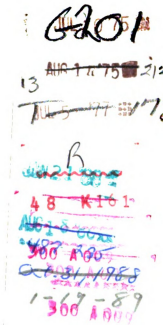
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ABSTRACT

AN ANALYTICAL AND STATISTICAL STUDY
OF THE HARMONY IN CARL NIELSEN'S
SIX SYMPHONIES

by Dean C. Wilson

Although a number of articles have been published on Carl Nielsen's works, as well as the book Carl Nielsen Symphonist, by Robert Simpson, no systematic study of the chords and root movement has been conducted. The purpose of this treatise is to supply this information.

One chapter is devoted to each symphony. These chapters begin with a general description of the symphony under consideration and include discussion of the over-all statistics for that symphony as a whole. Each movement of the symphony is then discussed similarly and statistics for that movement are presented and discussed.

The tabulations of chords include the number of occurrences of each type of chord, and both totals and percentage figures for the larger classes of chords (triads, seventh chords, etc.). The tabulations of root movement are similarly compiled.

Included in the discussion of the tabulations are peculiarities such as a chord previously not used, or some change in the prevalence of some chords or of root movement.

These are evaluated as to whether they are a peculiarity of the composer, are very traditional and therefore conservative, or are moving in the direction of more modern practices.

The tabulation of keys are quite minute, including many very brief modulations that many theorists would call tonicization of a chord by secondary dominant. These are included to give an accurate and detailed picture of the music.

Form is not a primary topic of this treatise, but a brief discussion of the form used in each movement of the symphonies is presented.

The composer's use of fugatos is discussed, particularly when unusual intervals of imitation, and/or polytonality is involved, but the subjects of thematic development and counterpoint are not primary topics of this treatise. Nonharmonic tones are mentioned, particularly when they are the antecedents of the same sonorities used as essential chord tones in later symphonies.

The tabulations of chords indicate a steady growth in the number of chord types used, and a general decrease in the use of the major-minor, and the diminished types of seventh chords. Also, the more complicated types of chords tend to evolve from nonharmonic tones.

The tabulations of root movement indicate a tendency toward progressively less use of root movement by perfect 4th, and more by 3rd and by 2nd, also, progressively more nearly equal use of the ascending and descending types of

root movement. Root movement by descending 2nd is sometimes more prevalent than that by ascending 2nd.

The composer uses foreign modulations extensively but tends to use 3rd relation considerably less than Wagner and his followers. In general, the style of Nielsen begins more like Brahms or Dvořák but eventually becomes somewhat like that of Vaughan Williams or Prokofiev. Some vestige of tonality is nearly always present, and each symphony ends in a key other than the one in which it began. Polytonality is used in the last three symphonies.

AN ANALYTICAL AND STATISTICAL STUDY OF THE HARMONY IN CARL NIELSEN'S SIX SYMPHONIES

by

Dean C. Wilson

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CHAPTER I

INTRODUCTION

I. PURPOSE OF THE DISSERTATION

The purpose of this dissertation is to describe and give detailed information about the harmony of Carl Nielsen's six symphonies. Although information is available about Carl Nielsen, short biographical sketches as well as listings of his compositions being readily found, there is but one book available in English that actually discusses the music in detail. This is Carl Nielsen Symphonist, by Robert Simpson. This book concerns all of Nielsen's works, although it covers the symphonies the most thoroughly. The areas of theory that are most thoroughly dealt with are form, key relationships, and to a lesser extent counterpoint and thematic developments. Although passing references are made to such items as unusual harmony and modulations, no systematic study has been made of root movement, the types of chords used and their prevalence, or of nonharmonic tones. Neither has a thorough investigation been conducted regarding the evolution of Nielsen's harmonic style as reflected in the changes in the use of root movement and chords throughout

the various movements of the six symphonies. This dissertation has been written to supply some of these missing details concerning the harmonic aspects of the symphonies.

II. SCOPE OF THE DISSERTATION

The central topics of this dissertation are root movement, chord types, and key systems as found in the six symphonies. The subject of form is included in the sections entitled Introductory Comments found at the beginning of each chapter that deals with a symphony, as well as at the beginning of each section dealing with an individual movement of a symphony. The subject of form is, however, not a primary one of this dissertation and is included as additional information to establish a broader understanding of the symphonies. Similarly, nonharmonic tones are not a primary topic of this work. Some description is occasionally given, especially in connection with the first symphony, but this generally relates to the evolution of chords from nonharmonic tones.

Questions regarding those composers who influenced Nielsen's creative development are not answered. Similarities to the works of other composers are occasionally noted, but such allusions do not necessarily imply that Carl Nielsen was influenced directly by these

composers. These allusions are made only with the intention of helping to describe the characteristics of the music in detail.

Similarly, questions of the aesthetic worth of Carl Nielsen's six symphonies, or of the composer's place in music history are not answered. It is possible that interest in the symphonies may result from the information contained in this dissertation, but the evaluation of them will be left to the reader.

III. METHOD OF ANALYSIS

All six symphonies have been analyzed harmonically using alphabetical letters denoting the root of the chords. The usual numbers were placed above these letters in the case of seventh, ninth, eleventh, and thirteenth chords, as well as chords with added tones. Beside the numbers abbreviations were included to indicate the type of interval used--M equals major; m, minor; p, perfect; aug., augmented; dim., diminished. Also, figured bass numerals were included to indicate the inversion of chords, except for quartal chords and those were isolated and handled separately. The procedure for quartal chords is described more completely later in this introduction in the section entitled TABULATION OF CHORDS.

All suspensions and retardations were also labeled

in the traditional manner: 9-8, 7-6, 4-3, et cetera. Other nonharmonic tones were also isolated, circled, and labeled according to types using the following abbreviations:

Abbreviation	Name	Definition
P.T.	Passing tone	A nonharmonic tone both approached and left by step in the same direction
N.T.	Neighboring tone	A nonharmonic tone approached by step and left by step in the opposite direction
E.T.	Escape tone	A nonharmonic tone approached by step and left by leap
App.	Appoggiatura	A nonharmonic tone approached by leap and left by step
F.T.	Free tone	A nonharmonic tone both approached and left by leap

Statistical studies of root movements and of chord types have been prepared for each movement of the six symphonies, and also for each symphony as a whole. The latter are of value in several ways. First, they establish a norm for the symphony from which the individual movements may be said to deviate. Second, and perhaps more important, from these norms for each symphony it is possible to establish trends of changes from one symphony to the next. Some of these trends are quite consistent and seem to be typical of other composers as well (development and increased use of the more complex chord sonorities). Others are perhaps more typical of Carl Nielsen, but nevertheless important in

indicating the growth of his technique of composition.

Both the tabulations of chords and of root movement contain percentage figures, and these have been rounded to the nearest tenth of a per cent. When the sum of the individual percentages totals either slightly more or slightly less than one hundred per cent, this is the result of an inbalance between the number of hundredths of a per cent rounded upward (.05 per cent - .09 per cent) and those rounded downward (.01 per cent - .04 per cent). The total deviations from one hundred per cent are always less than one per cent, generally not more than one or two tenths of one per cent.

As the analysis of the six symphonies progressed, it was discovered that changes of mode, changes of the 5th of a chord, and simultaneous changes of 3rd and 5th were quite prevalent, especially in the earlier symphonies. Because of this, a special tabulation of these was made and included under the heading of Changes of Sonority. A change of sonority may be defined as a change of some member of a chord other than the root. Their function is chiefly to add color to the harmony, although they also retard the rate of the harmonic rhythm. Because changes of sonority are not root movement, they have been tabulated separately. However, the tabulation of change of sonority has been placed directly below the tabulation of root movement. This proximity

facilitates comparison of the two tabulations. Such comparisons indicate that in some cases these changes of sonority are more prevalent than some types of root movement, and, therefore, a rather significant factor in the structure of the music.

Tabulations of keys have also been prepared for each movement of the six symphonies. The purpose of these tabulations is to give a rather detailed account of the many keys employed rather than to resolve arguments regarding the classification of modulations. For this reason, many questionable modulations have been included. For example: If C major were the central tonality, followed by a brief change to G major, and then a return to C major, it would be very questionable whether a real modulation had occurred. Many theorists would consider this a temporary accentuation of the dominant. Since the purpose of this dissertation is description, such a questionable modulation would be included, because it gives a more complete and precise picture of the details of the music.

IV. FORMAT OF THE DISSERTATION

One chapter is devoted to each of the six symphonies (chapters three through eight), the second chapter being on the life of the composer, and the ninth, a summary of the research. Each chapter that deals with a symphony begins with a section entitled Introductory

Comments, giving some general information about that symphony. This is followed by the tabulation of chords for that symphony as a whole, a discussion of this tabulation, tabulations of root movement and of changes of sonority, and discussion of these tabulations. This same format is then followed for each of the individual movements of that symphony with the addition of tabulations of keys and discussion thereof at the end of the section.

V. TABULATION OF ROOT MOVEMENT

The tabulations of root movement are organized with the following classifications:

1. By ascending 2nd (major, minor, or enharmonic equivalent).
2. Descending 2nd (major, minor, or enharmonic equivalent).
3. Ascending 3rd (major, minor, or enharmonic equivalent).
4. Descending 3rd (major, minor, or enharmonic equivalent).
5. Ascending perfect 4th (or enharmonic equivalent).
6. Descending perfect 4th (or enharmonic equivalent).
7. Tritone (augmented 4th or diminished 5th).

This classification is according to actual sound rather than spelling. For example, root movement by ascending augmented 2nd is classified as root movement by 3rd, since the sound of the interval is the same as a minor 3rd (presuming the use of the nearly universally accepted equal temperament system of tuning).

The tabulations of root movement are based upon a

complete performance of a symphony and all repeated sections are included according to the intentions of the composer. All such repeated sections have, therefore, been counted twice, and the root movement leading into the repeated section as well as that leading out of it have also been counted. In the case of first and second endings the root movement of both has been counted according to a complete performance of the music.

Unison writing. This is found in all of the six symphonies and frequently caused problems not only in the determination of roots, but of the type of chord implied as well. Such implied harmony has been counted under the following circumstances:

1. If the harmonic implications were clear because of an earlier or later occurrence with harmony.
2. If the unison passage was of an arpeggiated nature, thus clearly implying chords.
3. If the passage was very short (only a measure or two long) with clear implications of a chord or chords leading from the preceding complete harmony to that which followed.

In other cases, the unison passages have not been counted in the tabulations of root movement, and the interval between the last preceding complete chord and that which follows the unison passage has been considered to be a dead interval.

Two-part writing. This also is found in all of the six symphonies and caused some problems similar to

those of unison writing. The three cases discussed in the preceding paragraph apply also to two-part writing and have been handled in the same manner. The following special cases have been handled as indicated:

1. If one of the parts was a pedal tone, the harmony was determined by the rules governing unison writing unless the two parts were clearly related and formed harmony together.
2. If the two parts clearly formed chords, these chords were counted in the tabulation of root movement, and the missing members of the chords considered to be implied. The implied tones were determined according to the basic key of the passage and particularly by any appearance of the missing tones just before or after the chord in question.
3. In cases of highly chromatic writing where it was difficult to determine the essential harmony implied, the passage was not counted, and a dead interval was considered to exist between the chord immediately preceding the passage and that immediately following it.

Three or more part writing. This generally did not cause any difficulty in the determination of the root, since the root was usually present. If the root was present (usually in the bass part) but then dropped out, the root was still considered to be in effect even though no longer sounding.

Tertian chords. Triads, seventh chords, ninth chords, eleventh chords, and thirteenth chords have been analyzed in the traditional manner. That is, the triad (major, minor, augmented, and diminished) is considered to be the fundamental structure upon which

the other chords mentioned were based. Furthermore, any of these chords may be inverted (have some other tone than the root as the lowest sounding part without changing the root of the chord). Augmented triads and diminished-diminished seventh chords are acoustically ambiguous as to root. The theoretical root according to correct spelling of such chords was used considering the key of the music (Nielsen frequently misspells chords for reasons of ease in partwriting). In the case of an enharmonic modulation involving such a chord (one of uncertain root) a theoretical change of root has been used and the root movement from the old root to the new one counted in the tabulation. This theoretical change of root applies also to augmented sixth chords.

Italian and German sixth chords have been treated as enharmonic equivalents of the major-minor seventh chord (the former incomplete, lacking a 5th). The reason for this is based on acoustics. Since the equal temperament system of tuning is well established, the actual sound of these chords is identical. Furthermore, since the 3rd and 5th of these chords correspond to the natural fifth and sixth partials of the root, and the minor 7th (or augmented 6th) is quite close to the seventh partial, there is a strong acoustical basis for regarding the roots of these chords as identical.

The French sixth chord is questionable as to root.

It has been treated as an altered major-minor seventh chord, having a lowered 5th, and the root determined by the function of the chord. If, for example, the sonority G, B, D-flat, F (not necessarily so spelled) resolved to a C triad (major or minor), the function would be that of a G major-minor seventh chord with lowered 5th and G would be considered the theoretical root. If, however, the same sonority G, B, C-sharp, E-sharp (not necessarily so spelled) were to resolve to an F-sharp triad (major or minor), the function of the chord would now be that of a C-sharp major-minor seventh-chord with lowered 5th and in second inversion. Because of this, C-sharp would be considered the theoretical root of the chord in question.

A characteristic of Nielsen's symphonies, and of the Post-Romantic era in general, is that augmented sixth chords are sometimes used in an inversion. That is, an augmented 6th is not always formed between the lowest sounding part and an inner or an upper part. As a result of the inversion of the chord a diminished 3rd may be formed. For example, a rare use of the German sixth chord in 4-2 position has been found in the third symphony.[1] Since the function of the chord is not affected by the inversion (it resolves in the same manner and to the same chord as the normal position) such chords

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[1] Carl Nielsen, Symphony Number Three, Third Movement, Measure 301.

have been included in the tabulation of augmented sixth chords.

When the augmented-minor seventh chord appears in third inversion, an augmented 6th results between the lowest sounding part and an inner or an upper part. Such a chord has been located in the Finale of the third symphony.[2] The chord, D-flat, E-flat, G, B resolves to an A-flat major triad in first inversion, and with the characteristic expansion of the augmented 6th to an octave. The characteristic resolution of the augmented 6th suggests that the chord has become an unusual but genuine augmented sixth chord. However, the chord of resolution indicates that the function is not different from the augmented-minor seventh chord E-flat, G, B, D-flat. Because no examples that deviate from this type of function have been located, all such chords (augmented-minor seventh chords in third inversion) have been tabulated as augmented-minor seventh chords. For the benefit of the reader who is interested in this chord, it has also been included under the heading of augmented sixth chords under the heading of 6-4-2, but it is in parentheses to indicate that it has not been counted as an augmented sixth chord.

Chords with added tones. Added tones can create

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[2] Ibid., Fourth Movement, Measure 297.

a problem in the determination of a chord's root, a problem which affects the tabulation of root movement. A classical example, found in Bach's music and still fairly common in Nielsen's symphonies, is the chord progression of the supertonic triad to the leading tone triad in first inversion followed by the tonic chord (ii vii°_{6} I in the major mode, ii vii°_{6} i in the minor), with the leading tone triad formed by a movement of scale steps 6 to 7 and then to the tonic, the tonic chord sometimes being in first inversion. Some theorists consider the leading tone triad a passing chord and non-essential harmony. The fact that the chord progression is a form of imperfect authentic cadence (if the leading tone triad is essential) tends to make it a more conclusive sounding progression (sounding more final, complete, capable of functioning as a cadence) than the chord progression of the supertonic triad to the tonic. Another analysis of this progression is to consider the leading tone to be an added 6th with the supertonic triad. Although the upward resolution of the leading tone is the correct resolution, there is one weakness in this analysis. The supertonic triad with added 6th would be an incomplete chord lacking a 5th; whereas, the other analysis (ii vii°_{6} I or the minor form) more accurately describes two complete triads followed by the tonic chord. For these reasons the analysis ii vii°_{6} I (or the minor form) has been used in analyzing the six

symphonies of Carl Nielsen, and all three chords have been considered as essential harmony.

In the progression ii vii$^{6}_{5}$ I (or the minor form) the objection of incompleteness is overcome, and the leading tone seventh chord could be considered to be a complete supertonic triad with added 6th. Nevertheless, the upwards resolution of the leading tone can be explained as typical of this tone regardless of whether or not it happens to resemble an added 6th in so resolving. Also, the leading tone seventh chord has traditionally retained a stronger potential for cadences (forming an imperfect authentic cadence when followed by the tonic chord) than the supertonic chord has. Since Carl Nielsen tends to be traditional in his part writing and cadences (especially in the earlier symphonies), this more traditional analysis seems more appropriate and also a more correct explanation of the function of the harmony, and it has, therefore, been used in the analysis of his symphonies.

Another progression which gives rise to the possibility of double analysis is the plagal cadence involving the subdominant triad with added 6th (IV IV add 6 I in the major, iv iv add 6 i in the minor). This ornamental plagal progression became quite common in the nineteenth century and is fairly common in Nielsen's earlier symphonies, especially in the first. Using the methods of the previous case, this could be analyzed as IV ii$^{6}_{5}$ I

(or the minor form). Either analysis accounts for complete chords; therefore, no preference can be found on this basis. When considering the part writing, it is found that the alleged 7th of the supertonic seventh chord remains stationary at the resolution and needs no resolution. This causes suspicion as to whether the alleged 7th really is a 7th in function. Further examination reveals that it is the root of the alleged supertonic seventh chord that is dissonant, and that it resolves upwards in the manner of an added 6th. Since this tone, the supertonic scale step, is the dissonant tone, and because this scale step has not been bound by any traditional rule that would otherwise explain its upwards resolution, the analysis IV IV add 6 I (or minor form) has been used in the six symphonies.

Quartal chords. Chords based on 4ths (with each adjacent essential chord tone an interval of a 4th away) are generally called quartal chords. Chords involving both 4ths and 5ths have also been called quartal chords, because the 5ths can be considered the result of inversion of the chord. Actually, a case could be made for calling these quintal chords, considering all 4ths as the result of some inversion of the chord. Since the term "quartal chord" has been more universally accepted, this term has been used in this dissertation to denote chords composed of 4ths, 5ths, or of both 4ths and 5ths.

Theoretically, the acoustical root of a three-tone chord built in perfect 4ths is the uppermost tone of the perfect 4ths, because only this tone contains the other two in its harmonic series. Unfortunately, the aural effect does not seem to affirm this. In short, a chord built up of perfect 4ths is a sonority accepted by the ear but having a doubtful root. To consider the root to be the lowest tone of such a chord would be arbitrary and violate the acoustical explanation already presented. Because of these considerations, chords composed of perfect 4ths or of both perfect 4ths and perfect 5ths have not been counted in the tabulations of root movement, and a dead interval has been considered to exist between the conventional (tertian) harmony preceding and that which follows such quartal chords.

Chords composed of tones which form a series of ascending perfect 5ths do have an acoustical and theoretical root, namely, the lowest tone. All of the other chord members are found in the harmonic series of this tone. Furthermore, such chords could be regarded as akin to tertian chords, but with missing members (no 3rd, no 7th, no 11th). Because of these factors, chords based on an ascending series of perfect 5ths (figuring from the lowest sounding tone upwards) have been counted in the tabulation of root movement, and the lowest sounding tone considered to be the root.

Chords composed of both perfect 4ths and perfect

5ths could be regarded as an inverted form of either chords based on the perfect 4th, or of chords based on the perfect 5th, but the aural effect does not seem to affirm this. Unlike tertian triads, the inversion seems to preserve neither the identity of the sonority nor the root. They simply become a different sonority, or at least obscure the root. For this reason only quartal chords composed of perfect 5ths have been counted in the tabulation of root movement.

Harmonic rhythm. The prevailing rate of the harmonic rhythm has been used to determine essential harmony, with certain exceptions to be discussed. It must also be pointed out that the prevailing rate of chordal change is often quite rapid in the case of Carl Nielsen's six symphonies.

Passing tones and passing chords. Occasionally, one or two passing tones create a complete chord moving faster than the prevailing harmonic rhythm. Such a chord is generally called a passing chord and not counted as essential harmony. This is often true of the leading tone triad in the progression ii vii°_{6} I (or the minor form), previously discussed. In this case, the leading tone triad has been considered essential because of the strength and completeness of the progression, but in all other cases such a chord has not been considered essential harmony. In the case of the ornamental plagal progression IV IV add 6 I (or minor form), for example, the added 6th

has not been considered essential unless it moves no faster than the prevailing rate of chord changes.

Auxiliary chords involving two passing tones and one neighboring tone. In the case just discussed, generally one or more tones remain stationary as the passing tones move. This tends to emphasize the transitory nature of the passing tones and strengthens the impression that even if they are not dissonant, they are nevertheless non-essential. With the addition of a neighboring tone all parts are now moving, and the static element is missing. This movement of all parts suggests that an acceleration in the harmonic rhythm has occurred. For this reason, all such chords have been considered to be essential harmony and, therefore, counted in the tabulation of root movement.

Neighboring tone chords. In cases where chords are formed by neighboring tones which all move in the same direction, only the essential chords have been counted. When chords are formed which involve neighboring tones moving in contrary motion, the partwriting is somewhat stronger than in the case just discussed. Because of this, the prevailing rate of the harmonic rhythm has been used to determine whether such chords are essential or not.

Appoggiatura chords. Appoggiatura chords have been treated as subject to the same rules as neighboring

tone chords.

Repeated chord progressions. These have all been counted if they did not exceed what seemed to be the basic rate of harmonic change, the prevailing rate found in that particular part of the symphony. When the rate of change was more rapid than this, the prevailing rate of harmonic change determined the number of repeated chord progressions counted. For example, if the repeated chord progressions were moving in sixteenth notes, but a separate melodic part sounding against these implied that eighth notes were the unit of the basic rate of chord change, then only one change per eighth note would be counted. If the basic rate of chord change were a quarter note, then only one change per quarter note would be counted. In summary, the basic rate of the harmonic rhythm has been used to determine how many chords of a repeated progression were counted.

Pedal points. These are quite common and are found in all of Nielsen's symphonies. Since the function of pedal points is static, pedal points have not been counted as part of the prevailing harmony except where the moving parts imply that they are an essential tone in the harmony.

Double pedal points at the perfect 5th. If these appear alone and are then later joined by other moving

parts, the double pedal points are considered to imply either a major or else a minor triad (according to the implications of the prevailing key) and this chord has been counted. After the entry of the moving part or parts they have been considered as subject to the same rules as pedal points.

Suspensions. The 7-6 suspension in three-part writing can cause a problem of analysis which affects both the root movement and the type of chord. The 7th could be analyzed as part of an incomplete seventh chord that lacks a 5th, and if the tone sounding the 6th were repeated on the chord following, this could be considered to be a portamento resolution of a seventh chord, the 7th prepared by suspension figure and resolved by anticipation. It is also theoretically possible for there to be two chords, a seventh-chord and a triad in first inversion, but this is unlikely to occur. All decisions have been made on the basis of the harmony implied by the style of the particular movement, especially by that of the section in which the 7-6 suspension occurred.

The 4-3 and the 9-8 suspension. Neither of these are apt to cause difficulties in determining the root of the chord. In the case of the former, a 5th is usually present causing complete harmony at the resolution. In

the case of the latter, other tones present generally determine the root.

The 8-7 suspension, (diminished octave and minor seventh). This and the inverted form 1-2 (augmented prime and major 2nd) are found in Carl Nielsen's symphonies, especially the later ones, but they do not cause problems in determining the root. The resolution clearly implies which tone is the root and eliminates any analysis involving split roots.

The 6-5, 5-4, and the 3-2 suspension. The 6-5 suspension causes no problems if a 7th is present. When no 7th is present, it has been handled in the same manner as a 7-6 suspension. The 5-4 suspension similarly causes no problem when a 6th is present; otherwise, it has also been handled similarly to the 7-6 suspension. The 3-2 suspension does not cause problems. It would not be so analyzed unless other parts clearly made the 3rd dissonant, and these other parts would determine the root.

Retardations. These have been handled in the same way as suspensions.

Neighboring tones. Neighboring tones involving the 5th of a triad and the tone a major 2nd above can cause difficulty in the determination of the root. If either tone was found in another part without the

neighboring tone, it has been considered to be the essential one. If both were found in other parts, both have been considered essential tones. If neither was found in another part without the neighboring tone, then the essential tone was determined by implied harmony. For example, if the sonority C-E-G with a neighboring tone from G to A were found, the following analyses would be possible:

1. The sonority is a C major triad in root position and A is a neighboring tone from G.
2. The sonority is an A minor triad in first inversion.
3. It is a C major triad in root position with an added 6th.
4. It is an A minor-minor seventh chord in first inversion.

Concerning the relative strength of the above analyses, the following evaluations can be made:

1. Number one is strong because the essential tone is accented by sounding first.
2. Number two is weak because the essential tone is not accented in this way.
3. Number three is strong only if the tone B or B-flat appears in the part on the next chord, thus implying resolution of the added 6th.
4. Number four is strong only if the tone F or F-sharp appears in the same part on the next chord, thus implying the resolution of G, the 7th of the A minor-minor seventh chord.

If the neighboring tone is a minor 2nd above the 5th of the chord, there is considerably less difficulty. The same rules as found in the preceding paragraph have been applied if either or both tones are doubled elsewhere

without the neighboring tone. When not so doubled, there is an alternation between a major chord and an augmented chord of same root (C E G, C E G-sharp or else an apparent fluctuation between a minor chord and a major one with root a major 3rd below that of the first (C E-flat G, C E-flat A-flat). In the first case, the major chord, being a stronger sonority, has been preferred unless the augmented chord happened to be a $\overset{+}{\text{III}}$ in a minor key or secondary chord of this type ($\overset{+}{\text{III}}$ of some chord).

Neighboring tones involving a 6th and 7th above the bass create problems similar to those of the preceding examples. The result is an apparent shifting of root by the interval of a 3rd (C E G A, C E G B-flat). Such cases have been treated in the same manner as the preceding examples.

It will be noted that all of the examples given have pertained to tertian chords and none to quartal. Although such problems are possible with quartal chord, this type of chord is quite rare in the symphonies of Carl Nielsen, none being found in any of the first four symphonies. The type of examples given are, therefore, representative of the most common problems encountered in the analysis of the symphonies.

Polyharmony. In cases where the two harmonic streams emerge from the preceding simpler harmony and

both then converge into the simpler harmony that follows, the root movement of both streams has been counted. That is, the root movement from the preceding simpler harmony to the lower stream of the polyharmony, the root movement of the lower stream, and the root movement leading back to the simpler harmony following have all been counted. The same procedure has then been applied to the upper stream of the polyharmony. In cases where a different group of instruments enters abruptly with its own harmony, independent of the main stream of the harmony, and then drops out, still unrelated to the main stream, a slightly different procedure has been used. The root movement of the main stream of the harmony has been counted as if there were no intrusion. Then the root movement of the intruding line has also been counted but with a dead interval before and after it. In cases of polytonality where there is clear harmony in one key, and only unison writing in the conflicting key, this has been treated as in the preceding examples, except that the rules of implied harmony have been used in determining the root movement of the unison writing.

VI. TABULATION OF CHORDS

The tabulations of chords are a study of the prevalence of all types of chords found in the six symphonies. These tabulations are directly related to

the tabulations of root movement. The latter indicates the number of occurrences of each type of root movement and the relative frequency of each type figured in per cent of all root movement. The tabulations relate to this by indicating what types of chords were used, how often they were used, and, also, include percentage figures. Also, both tabulations were based on essential harmony, and both were subject to the rules given in the preceding section dealing with root movement. There are some special cases that relate only to the chord tabulations, and these are given following the listing of the classifications of chords.

Triads. Triads are classified as follows: (1) major, (2) minor, (3) augmented, and (4) diminished. These terms conform to the traditional usage of them. Both the actual number of occurrences of each type and its per cent relative to the total number of triads are included.

Seventh chords. Seventh chords are depicted by hyphenated words. The first part of the term (major, minor, augmented, or diminished) indicates the type of triad that the seventh chord is based on. The second part of the term indicates the type of 7th present (major, minor, or diminished). Thus, for example, the term major-minor seventh chord designates that type which consists of a major triad and a minor seventh.

The percentage figure indicates what proportion of all seventh chords found are of that specific type.

Ninth chords. These are also classified with hyphenated words, but involve three parts. The first two parts indicate the type of seventh chord that the ninth chord is based on, and the third part indicates the type of 9th. If no 7th is present, the second part of the term indicates this. Thus, the term major-(no 7th)-minor indicates a ninth chord based on the major triad containing no 7th but a minor 9th.

Eleventh chords. These are classified similarly to ninth chords, except that the fourth word of the nomenclature indicates the type of eleventh present and the term "no 9th" may be used.

Thirteenth chords. These are classified in a manner analagous to eleventh chords.

Augmented sixth chords. These are classified into five types: (1) Italian, (2) French, (3) German, (4) minor-Italian, and (5) minor-German. The first three terms conform to traditional usage, except that the chords may be in some inversion. The last two terms indicate that these two chords are based on a minor triad but otherwise are identical to either the Italian or the German types of augmented sixth chord, also resolving in

the same manner.

Chords with added tones. These are classified according to the fundamental type of chord plus the interval of the added tone (or tones). Example: Major-minor seventh chord with added major 6th.

Quartal chords. Only two types are found, one based on a series of ascending perfect 4ths and one based on a series of ascending perfect 5ths. The latter type is found only in the fourth movement of the sixth symphony and this is mentioned in the discussions of this movement. Since all other quartal chords found are based on a series of ascending perfect 4ths, the only classification necessary is the number of essential tones in the chords. These are classified as follows: (1) three tones, (2) four tones, and (3) five tones.

It will be noted that quartal chords have been included in the tabulations of chords, but not used in the tabulations of root movement because of uncertainty regarding their root. Since they are a recognizable sonority, they have been included in the tabulations of chords, even though of uncertain root.

Simultaneous cross-relation. This occurs quite frequently in the symphonies of Carl Nielsen. In cases of simultaneous cross-relation where one tone resolves before the next chord change, the tone that resolves has

been considered as nonharmonic and the other, an essential tone. Such use has not been considered to affect the classification of the essential chord. When there is no resolution before the next chord change, both members have been considered to be essential tones of a chord with an added tone, and the chord has been so classified. These classifications are:

1. Triads with split 3rds (2 types of 3rd of the chord).
2. Triads with split 5ths (2 types of 5th of the chord).
3. Triads with both split 3rds and 5ths.
4. Seventh chords with split 3rds, with split 5ths, split 7ths, et cetera.
5. Ninth chords with split 3rds, split 5ths, et cetera.
6. Eleventh chords with split 3rds, 5ths, et cetera.

All of these chords are included under the larger classification of chords with added tones.

No classifications have been made of chords with split roots. Although apparent examples have been found of this, they are not so classified for the following reasons:

1. They are sometimes merely the result of misspellings (for ease of part writing).
2. The sound and function is either that of a chord with a major 7th or else a minor 9th, depending on the part writing.

Since chords with split roots, as found in Carl Nielsen's six symphonies, do not have an identity of their own that is different from either seventh chords or ninth chords, they have been given no separate classification.

Changes from triads to seventh chords and vice versa. The appoggiatura type preparation of the 7th of a seventh chord (skip from the 5th of the chord to the 7th) was used by Bach and other Baroque composers and is also found in Carl Nielsen's symphonies. In such cases both the triad and the seventh chord have been counted, unless the change is too rapid to be readily perceived, or unless the change is obscured by other nonharmonic tones. If used in conjunction with a 4-3, or a 7-6 suspension, only the seventh chord has been counted, because the triad is not established before the 7th appears.

Changes from 7th down to the 5th are not infrequent, especially in the earlier symphonies of Carl Nielsen. In the preceding case a new sonority resulted from the addition of a new tone, the 7th; but in this case a tone is now subtracted, resulting in a simpler sonority. The 7th, having been established, may now be considered to still be implied. For this reason, only the seventh chord has been counted. From this one case, the following general principle has been derived which applies to other cases:

> When a simple sonority changes to a more complex sonority (the same sonority plus another tone or tones), both chords have been counted, provided that the rate of the change permits clear perception of both chords; but if any tone or tones of a chord disappear, they have been regarded as still implied and the simpler chord has not been counted.

One exception to the just cited principle is found

when a 9-8 suspension is used in conjunction with a seventh chord. Here, although a ninth chord sounds, it is not counted because the 9th is clearly a nonharmonic tone. Therefore, only the seventh chord has been counted. Similarly, if a 7th is nonharmonic in function, the resulting seventh chord has not been counted.

In general, the procedures used in counting both chords and root movement have been based as much as possible on fairly traditional approaches to analysis, occasionally extending these to meet the needs of peculiarities of Nielsen's symphonies. By so doing, it is possible to compare these symphonies to other compositions that have been similarly analyzed. Thus, in CHAPTER THREE a number of comparisons have been made between the first symphony and the chorales of Bach.

It is hoped that this research on Nielsen's symphonies may be of value to others doing similar research on other composers. Finally, it is hoped that this research may in a small way shed some light on similar growth in the use of chords by other composers, contributing to an understanding of some of the general tendencies that developed after the Post-Romantic era.

CHAPTER II

THE LIFE OF THE COMPOSER

Carl August Nielsen was born June 9, 1865 in the parish of Nørre-Lyndelse, which is located in the middle of the island of Fyn. Nørre-Lyndelse is only ten miles from Odense, the birthplace of another very famous Dane, Hans Christian Andersen. Carl Nielsen's parents were Niels Jørgensen and Maren Kirstine. The surname of Carl Nielsen and his father differ because of the then practiced Scandinavian custom of forming surnames by taking the first name of the father and adding the suffix "sen", thus indicating in the name Carl Nielsen that Carl is the son of Niel. This fact is mentioned because the custom is no longer practiced and may, therefore, be unfamiliar to the reader.

Although Carl Nielsen's father was primarily a house painter by profession, occasionally doing odd jobs on farms, he was also a town musician and frequently played at dances. Because of this, Carl Nielsen was able to receive some musical instruction and also gained some experience by playing at dances. He especially enjoyed improvising counter melodies to the dance music, also writing some melodies of his own. These

early experiences influenced the composer profoundly, for although his symphonies do not actually contain folk dances, the style is present.

The composer's first full-time position was as a bugle player (eleventh chair) in the regimental band at nearby Odense, a position obtained in competition with other musicians after studying the instrument for only one month.[1] He also continued to practice violin and to do some composing during this period. He was accepted at the Royal Conservatory in Copenhagen in 1884 after an interview with the director, Niels Gade. Since Gade was a disciple of Mendelsohn and a firm believer in form, he had some praise to offer the young composer for his form. However, Carl Nielsen was accepted as a violin student and consequently received no training in composition!

After completion of his studies at the conservatory, Nielsen obtained a position as a second violinist with the Royal Orchestra at the Opera, receiving his appointment in 1889.

In 1890 he received one of the largest scholarship grants then offered by the Danish government and was, therefore, able to tour France, Germany, and Italy.

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[1]Frede Schandorf Petersen, Carl Nielsen The Danish Composer (Copenhagen: Press Department of the Ministry for Foreign Affairs, n.d.), p. 5.

It was in France that he met and married Anne Marie Brodersen, a young Danish sculptress who eventually obtained considerable fame in her own field. They remained married until Carl Nielsen's death, after which she made several monuments to her late husband. Perhaps the best known of these is a statue depicting Carl Nielsen astride a horse, a monument located in a park in Copenhagen.

The scholarship grant was undoubtedly very important to Carl Nielsen and must have encouraged him greatly in pursuing musical composition as a main goal in life. It also gave him considerable exposure to the music of other composers. Wagner was very popular at the time of Nielsen's visit to Germany, and Nielsen seemed to be quite impressed by a performance of Der Ring des Nibelungen. About Wagner he said, "Hut ab! (Hats off to him)."[2] Yet despite this praise there is very little tangible influence of Wagner in Nielsen's writing. The endless melody is not a type of writing that is characteristic of Nielsen. Neither did Nielsen like the leitmotif technique of composition. He preferred to let his music speak for itself rather than be used as a symbol of something extraneous to the music.

During this period Nielsen was able to study the

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[2] Ibid., p. 7.

works of Palestrina. He gained considerable respect for this composer and learned a great deal about counterpoint from this study, also gaining a healthy respect for the use of simple intervals. The fact that fugatos are found in all but the first symphony, and that all of these are used prominently, indicates the value that Nielsen placed on counterpoint, as does his progressive growth in the development of themes.

Nielsen slowly began to gain a reputation as a composer after his return to Denmark. The first symphony was premiered March 14, 1894 and was well received. His interest in personality and psychology manifests itself in the second symphony and in the Hymnus Amoris. The latter work was inspired by a painting by Titian which depicts a man killing his beloved. Nielsen made his setting of the work in Latin by first asking a friend (Dr. Axel Olrik) to write a text in Danish, and then asking another friend (Professor Johan Ludvig Heiberg) to translate this text into Latin.

During this period Carl Nielsen's three children, Irmelin, Anne Marie, and Hans Borge, were born.

The second symphony was well accepted, but Nielsen was already a controversial composer. There were many in Denmark who still looked for a continuation of ninteenth-century German Romanticism, but Nielsen was moving ahead toward more modern musical practices.

Nevertheless, as time went on Nielsen gained more and more advocates, and he eventually was able to overthrow the anachronistic musical values that had prevailed. It is not easy for most Americans to appreciate just how powerful this ultra-conservative thinking was in Denmark, and if Nielsen's early works presently seemed rather conservative to Americans, they certainly did not to the people of Denmark at that time.

From 1908 to 1914 Nielsen was an opera conductor at the Royal Theater. This enabled him to conduct some of his own works, but eventually he resigned because of controversies over duties. In general, he was more interested in composition than in recreating the music of other composers.

One year later he was appointed as a teacher at the Royal Conservatory. He remained there for the rest of his life, becoming the director just one year before his death.

Carl Nielsen was certainly a logical composer, as can be easily verified by an examination of his music. He considered the content of music more important than dazzling effects and is, therefore, not related at all in temperament to the French impressionists. Like Sibelius, he was profoundly impressed by nature; but, unlike Sibelius, he did not strive to express nature in his music. His interest in things human is very evident

in the second and fourth symphonies (The Four Temperaments, and The Unextinguishable). Not to be forgotten either is his sense of humour. This quality is quite apparent in the second symphony and also in the flute concerto, in which the flute seems to be taunted by the trombone. The contemptuous yawns of the trombone in the Humoreske of the sixth symphony are a rather grim joke, but Nielsen was very sick at the time he wrote this, and the distortion of values is, therefore, at least understandable.

A good example of his direct but good-natured approach to other people is found in an incident which occurred in 1923, when he went to London to conduct a performance by the London Symphony of his fourth symphony. According to Simpson, Nielsen had attempted to learn some English from one of the familiar language courses that claims proficiency in one hundred hours. After some study Nielsen greeted the players at the first rehearsal with the following statement:

> Gentlemen, I am glad to see you; I hope I also am glad to hear you.[3]

The players laughed, and Nielsen was well on the way to good relations with the players.

Toward the end of his life Nielsen was somewhat bitter about the lack of prosperity entailed in being

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[3]Robert Simpson, Carl Nielsen Symphonist (London: J. M. Dent and Sons, Limited, 1952), p. 204.

a composer and was also disappointed that his music had not become very well known outside of Denmark. However, this despair seems to have resulted from his heart trouble, for he was generally optimistic before this condition impaired his health and activities.

As interesting as they may be, speculations about the composer's character are of relatively little importance in comparison to considerations of his musical works and their effect on the musical world. Carl Nielsen was successful in breaking down the cult of Romanticism that dominated Denmark when he began writing. Thus, to his own countrymen, he was a modernist as well as an individualistic composer. There is little if any evidence that he influenced music greatly outside of his own country, but his ultimate place in history cannot be determined until the currently unresolved question of tonality versus atonality is resolved, a struggle still continuing at the present time.

Finally, it is worth noting that Carl Nielsen was a versatile composer. In addition to the six symphonies, the primary topic of this treatise, Nielsen also wrote two operas, five choral works with orchestra, many songs, four published string quartets and one quintet, two sonatas for violin, as well as compositions for oboe, for horn, two chamber works for wind instruments (one including string bass), and the concertos for flute, and

for clarinet. There are also a number of piano works and several for organ, and, finally, a number of incidental compositions composed for some special occasion or place. Thus, Nielsen has made contributions to the literature of music in a considerable number of musical forms. It is regretted that this treatise cannot cover some of the other areas, especially the opera Maskerade which seems worthy of research, but perhaps some other writer will undertake this. Nevertheless, the topic of the symphonies is certainly adequate to acquaint the reader with the main ingredients of Carl Nielsen's musical style.

CHAPTER III

SYMPHONY NUMBER ONE (1891-92)

I. THE SYMPHONY AS A WHOLE

Introductory Comments

At the time that the first symphony of Carl Nielsen was written, Dvořák had not finished the New World Symphony but had already written the symphony in G major. Mahler had written his first symphony but not his second. Debussy had written Prélude à l'Après-midi d'un Faune but not Pelléas et Mélisande. Sibelius would not complete his first symphony until seven years later. Bruckner was working on his ninth symphony, which, of course, he never completed.

The number of instruments required in Nielsen's first symphony is not at all unusual for the era in which it was written. In fact it is somewhat conservative. The score requires only two of each woodwind instrument (except for the flute which has three parts, one doubling on piccolo), two trumpets in E-flat, four French horns, two trombones plus one bass trombone, timpani, and the usual stringed instruments (no harp).

The orchestration is not unusual and in general is somewhat similar to that of Brahms and Dvořák. Nielsen gives the woodwinds solo passages occasionally, also the French horn. The other brass instruments have less solo work but sometimes are used as an independent group without strings or woodwinds.

The first symphony is not unusually long and in this respect is similar to the symphonies of Brahms. It also resembles these works by containing no programatic element either in the title or in the score.

In general the first symphony is more nearly related to the symphonies of Brahms and Dvořák than to those of Bruckner or Mahler, but as will be found in the pages that follow, there are also some idiosyncrasies which are characteristic of Nielsen.

Chords

Table I - Tabulation of Chords
Symphony Number One - Totals from all Movements

Triads							
Major	51.3% (656)	Minor	42.4% (543)	Augmented	1.6% (20)	Diminished	4.8% (61)

Seventh Chords			
Major-minor	51.5% (417)	Major-major	6.2% (50)
Minor-minor	19.4% (157)	Minor-major	1.0% (8)

Table I - Continued

Augmented-minor 5 .6%	Augmented-major 2 .2%
Diminished-minor 86 10.6%	Diminished-diminished 84 10.4%

Ninth Chords

Major-minor-minor 3	Major-minor-major 12
Major-major-minor 0	Major-major-major 1
Minor-minor-minor 2	Minor-minor-major 6
Minor-major-minor 0	Minor-major-major 0
Augmented Chords with Ninths 0	
Diminished-minor-minor 1	Diminished-minor-major 1
Diminished-diminished-minor 2	

Eleventh Chords

Minor-minor-major-perfect 1

Minor-minor-(no 9th)-augmented 11th 1

Augmented Sixth Chords

Italian 0 French 20 German 3

Chords with Added Tones: Major with added Major Sixth 1

	Number of Occurrences	Percentage All Chords
Total Number of Triads:	1280	59.7%
Total Number of Seventh Chords	809	37.7%
Total Number of Ninth Chords	28	1.3%
Total Number of Eleventh Chords	2	.1%
Total Number of Thirteenth Chords	0	.0%
Total Number of Augmented Sixth Chords	23	1.1%
Total Number of Chords with Added Tones	2	.1%
Total Number of Chords	2144	

There has been considerable interest among theorists regarding the frequencies with which the various types of chords as well as types of root movement are used. It has generally been thought that seventh and ninth chords grew to a new prominence during the nineteenth century and that root movement by 2nd and 3rd appear more often than in the Baroque era. Because of the interest in these aspects of composition, comparisons will be made between the first symphony and the practices of Bach as described in The Contrapuntal Harmonic Technique of the 18th Century, by Dr. Allen Irvine McHose. One certainly cannot deduce generalities about the music of the nineteenth century on the basis of observation of only one composer's work, especially not when the composer is as relatively unknown as Carl Nielsen. However, as a point of departure the comparison seems appropriate, since the style of Bach is relatively well known.

The statistics which McHose gives for the chords found in the 371 Chorales are, in part, as follows:

Diatonic Triad: 83%
Diatonic Seventh Chord: 14.8%
Altered triads and seventh chords: 1.5%[1]

These statistics do not indicate what percentage

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[1]Allen Irvine McHose, The Contrapuntal Harmonic Technique of the 18th Century (New York: Appleton-Century-Crofts, Inc., 1947), p. 149.

of the altered chords are triads, nor what percentage are seventh chords; but since the total of both is only 1.5 per cent, one may deduce that the total number of triads, both diatonic and altered, could not exceed 84.5 per cent, nor the total number of seventh chords exceed 16.3 per cent.

Returning now to the general belief that seventh chords became more prevalent in the nineteenth century, this is very definitely true in the case of Carl Nielsen's first symphony. Seventh chords are used more than twice as often as they were in the chorales of Bach (37.7 per cent in Nielsen's first symphony, and not more than 16.3 per cent in Bach's chorales).

Regarding the belief of a similar increase in the use of ninth chords, this also proves to be true, but to a considerably lesser extent than might be expected. Since McHose lists no ninth chords at all in the 371 Chorales, Nielsen's use (1.3 per cent) certainly shows some increase, but the ninth chord is used very rarely.

Eleventh chords are not found in Bach's chorales and are nearly nonexistent in the first symphony. The advance in the types of chords used is, therefore, restricted chiefly to a considerable increase in the use of seventh chords and very limited use of ninth and eleventh chords.

One might expect a considerable increase in the

use of augmented sixth chords. Since McHose[2] does not cite a specific percentage figure for this type of chord (it is some part of the 1.5 per cent total of altered chords) an exact comparison cannot be made; but Nielsen's use (1.1 per cent of all chords) if greater, is certainly not significantly more extensive. The rarity of the chord might tend to make it rather prominent when used, but the total number of times the chord appears remains very small. Also to be noted is that the Italian sixth chord is not used, and that the French type outnumbers the German by a total of twenty to three. The predominance of the French type is characteristic of all of the six symphonies, a trend that will be broken very rarely in individual movements and never in an entire symphony.

Considering now the individual types of seventh chords found in this symphony, as might be expected, the major-minor type is the most common. The minor-minor type is next most common and is used only slightly more than one-third as often as the major-minor.

Since increased use of dissonance was a characteristic development of the nineteenth century, one might expect more major-major seventh chords in the first symphony than are found. McHose[3] lists the IV^7 chord

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[2] Ibid., p. 149.

[3] Ibid., p. 150.

as accounting for 8.5 per cent of all seventh chords in the 371 Chorales but unfortunately does not indicate what percentage of these were in the major mode and, therefore, of the major-major type. Similarly, he cites a total of 2.6 per cent of all seventh chords as being VI^7 chords,[4] and although he says that most of these were found in the major mode, it is not possible to determine how many were in the minor mode and, therefore, also of the major-major type. He does, however, cite .4 per cent as a total for the I^7 chord and indicates that all of these were found in the major mode. From all of these considerations it seems likely that Bach used the major-major seventh chord more extensively than Carl Nielsen did in his first symphony.

The minor-major seventh chord is very rare in the first symphony, accounting for only one per cent of all seventh chords. Since the I^7 chord in the minor mode is the only example possible of the minor-major seventh chord as an unaltered chord, and McHose says that the I^7 is not found in the minor mode (in the chorales)[5] we may infer that if the chord did occur in the chorales, it would have to be among the 1.5 per cent total of altered triads and seventh chords. It is probably not

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[4] Ibid., p. 150.

[5] Ibid., p. 150.

found in the chorales and is exceedingly rare in the first symphony.

Only .6 per cent of all seventh chords in the first symphony are of the augmented-minor type. Since the $\overset{+}{III}^{7}$ is not found in the chorale style (according to McHose),[6] any augmented-minor seventh chords would have to be among the 1.5 per cent total of altered triads and seventh chords. This chord is exceedingly rare in the first symphony and probably nonexistent in the chorale style.

Both the diminished-minor and the diminished-diminished types of seventh chords are quite prevalent in the first symphony. Although each is outnumbered by the minor-minor type, taken together as a group (seventh chords based on the diminished triad) they actually outnumber the total of both the minor-minor and minor-major seventh chords (seventh chords based on the minor triad). This indicates that seventh chords of diminished sonority are a prevalent type and a significant part of the chord texture in this symphony. It also compensates somewhat for the low total of diminished triads, indicating that the composer possibly preferred seventh chords based on the diminished triad to the simpler diminished triad.

McHose cites a total of 12.5 per cent of all

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[6] Ibid., p. 150.

seventh chords as being vii^{7} chords, and 37.5 per cent as being II^{7} chords.[7] All of the former would be either diminished-minor or else diminished-diminished seventh chords, and all of the latter that were in the minor mode would be diminished minor seventh chords. Unfortunately, exactly how many of the latter were in the minor mode is not given, but if even one-third of them were in this mode, 24.8 per cent of all seventh chords (in the chorale style) would be of diminished sonority (diminished-minor or else diminished-diminished). It seems probable then that Bach used this type of chord as much as or perhaps more than Carl Nielsen did in his first symphony.

Since ninth chords are not found at all in the chorale style, Nielsen's use, even though rare, clearly indicates some growth in sonority beyond the practices of the Baroque era. As might be expected, the major-minor-major or so-called "dominant ninth chord" is the most common type, accounting for a total of twelve of the total twenty-eight ninth chords found in this symphony. Also, as might be expected, the minor-minor-major type is next most common and accounts for six out of the total. The major-minor-minor and the minor-minor-minor types are both rare in the first symphony but become

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[7] Ibid., p. 150.

somewhat more prevalent in the later symphonies. Diminished chords with 9ths are found only with minor 7ths, but surprisingly enough, three of these have a minor 9th and only one has a major 9th.

In general the most prevalent types of ninth chords are those based upon the most prevalent types of seventh chord, and the major 9th is preferred. Ninth chords based on the augmented triad are not found.

The major is the most common type of triad and accounts for 51.3 per cent of all triads. This is followed by the minor triad, which totals 42 per cent of all triads. One might expect more minor triads since the first symphony is in G minor, but the prominence of the keys of C major and E-flat major and the frequent use of change of mode are perhaps the factors which swing the balance in favor of the major triad. The predominance of the major triad over the minor is quite characteristic of all of Carl Nielsen's six symphonies and, therefore, constitutes a trend, one that is rarely broken except in individual movements.

The total number of augmented triads appears unusually small (only 1.6 per cent of all triads). This type of triad is actually more prominent than the statistics might imply, but since many examples were clearly the result of nonharmonic tones, they were, therefore, not counted in the tabulation because the

tabulation is only of chords used as essential harmony.

Diminished triads are also quite rare (totaling only 4.8 per cent) but the reason for this is entirely different. The cause seems to be a decided preference on the part of the composer for seventh chords based on the diminished triad rather than the simpler diminished triad.

Root Movement

Table II - Tabulation of Root Movement
Symphony Number One - All Movements

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	148	9.0
By descending 2nd	156	9.5
By ascending 3rd	106	6.4
By descending 3rd	225	13.7
By ascending perfect 4th	543	33.0
By descending perfect 4th	395	24.0
By ascending or descending tritone	73	4.4
Total Number of Root Movement	1646	

Tabulation of Change of Sonority	
Change of Mode	142
Change of 5th	22
Change of 3rd and 5th	32

McHose gives the following tabulation of root movement for the music of Bach, Graun, Handel, and other

composers of the Baroque era:

Prime	16 per cent
5th	52 per cent
2nd	21 per cent
3rd	11 per cent[8]

If primes are eliminated, since they are simply repeated chords, and the statistics recalculated, the new results will be as follows:

5th	61.9 per cent
2nd	25.0 per cent
3rd	13.1 per cent

These statistics of root movement can now be compared with the ones prepared for Carl Nielsen's symphonies, but with the one shortcoming that the figures for the Baroque composers do not indicate the direction of the root movement.

By comparing the statistics for the first symphony to those given above, it is clear that although root movement by perfect 5th is used somewhat less in the first symphony than by the representative composers of the Baroque era, the total use remains more than 50 per cent, and root movement by perfect 5th remains the most prevalent type of chord progression. It is also clear that there is some decrease in the use of root movement by 2nd, and that it has been superceded by root movement by 3rd.

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[8] Ibid., p. 150.

There has been a general belief among theorists that root movement by 5th became less prevalent in the nineteenth century and that those by 2nd and by 3rd became more prevalent. The first symphony substantiates this in the case of root movement by 5th and by 3rd, but the decrease of that by 2nd is a peculiarity of the first symphony.

As interesting as these observations may be, they do not give a complete picture of the situation since the direction of the root movement is also of great importance. Root movement by ascending perfect 4th generally creates normal progressions, that is, normal according to harmony as established by Rameau and subsequent writers. For example, in the major mode the following progressions by ascending perfect 4th are all normal:

iii to vi
vi to ii
ii to V
V to I
I to IV

On the contrary, root movement by descending perfect 4th generally will not result in a normal progression unless moving from the tonic chord. Since root movement by descending perfect 4th is used quite extensively in the first symphony, one might well suspect that not all of these are root movement from the tonic, and that, therefore, a considerable number of irregular chord

progressions (irregular according to traditional harmony) would be present. The assumption proves to be correct, and this is a factor which many listeners criticize about Carl Nielsen's music. From the traditional standpoint such progressions tend to cause uncertainty of tonality by moving away from the tonal center rather than towards it, characteristics definitely found in the first symphony.

Root movement by ascending 2nd is more likely to result in normal chord progressions than those by descending 2nd; those by descending 2nd, except from the tonic, are apt to result in progressions which either move towards the tonal center more rapidly than normal (vi to V; iii to ii; and ii to I) or else move away from the tonal center (V to IV; and IV to iii). Since root movement by descending 2nd is actually used more than that by ascending 2nd (which is in itself a deviation from traditional practices), the result is similar to that found in the case of root movement by descending perfect 4th; a considerable number of irregular chord progressions are found that may disturb some listeners.

Root movement by 3rd proves to be more normal than the other types just discussed, for that by descending 3rd (most apt to result in normal chord progressions) is used considerably more than that by ascending 3rd (most apt to result in irregular chord

progressions), outnumbering it by more than two to one.

Root movement by augmented 4th (or diminished 5th) is certainly not used very extensively. Considering that the diatonic chord progression of IV to vii° in the major mode as well as iv to vii° in the minor mode are both normal chord progressions and found in this symphony (also used by Bach) the total of only 4.4 per cent for root movement by augmented 4th is very low. This low total is, therefore, conservative in implication and distinguishes the composer from other composers of the Post-Romantic era who did make extensive use of this progression. The low total is characteristic not only of this symphony but those following, except the sixth.

Changes of Sonority

As was mentioned in the introduction there is a considerable difference between the number of chords counted and the number of chord progressions, for which reason a study of changes of sonority (change of chord involving no change of root) has been conducted. The total number of chords (for the first symphony) is 2144, and the number of chord progressions is 1646. Since there was only one unison passage where root movement could not be counted, and since there would normally be one more chord than chord progression, there still remains a total of 496 chords not accounted for (2144-2=2142).

Change of mode, change of 5th, and change of both 3rd and 5th account for 216 of these; the remaining 280 are the result of changes from triads to either seventh chords or to ninth chords by the addition of the 7th or of both 7th and 9th to an already established triad, or else they are the result of a change within a chord of one type of 7th to another of different type. The last mentioned type of change (change of 7th) is a most interesting practice of the composer and is discussed further in the section pertaining to the individual movements of this symphony.

Change of mode is very prominent in the first symphony and as indicated in the tabulation occurs no less than 142 times. Some listeners are disturbed by the extensive use of this type of chord change and claim that it causes vagueness of modality and sometimes tonality. Considered from a different point of view it demonstrates an expanded concept of key, one encompassing the chords of both the major as well as minor modes.

There are three different types of change of 5th. First, there is the change by descending half-step which causes a change from a minor chord to a diminished one. This will definitely tend to obscure the tonality and opens possibilities of modulation since the resulting diminished triad can readily function as a leading tone triad or diminished supertonic triad of a new key.

Change of 5th by ascending half-step from a major triad produces an augmented triad but no change of root (unless followed by an enharmonic modulation). This type of chromatic writing was used by Mozart and was, therefore, certainly not new when Carl Nielsen wrote his first symphony, but it does lend color to the texture of the music. One other type of change of 5th is by descending half-step from a major-minor seventh chord. This results in a French sixth chord. (Example: Essential chord tones C E G B-flat change to C E G-flat B-flat). This change also has possibilities of enharmonic modulation since the French sixth can be re-spelled (C E F-sharp A-sharp, in the example just cited) and move to a distant key.

The change of both 3rd and 5th (simultaneously) involves a major chord changing to a diminished one on the same root. This combination of changing both the 3rd and the 5th of a chord can be very dramatic in destroying the sense of tonality. It, like the change of 5th, has many possibilities for foreign modulations since a primary chord in the major mode can suddenly become transformed into a leading tone chord of a new key (either major or minor) or into a supertonic chord of a new minor key.

Nonharmonic Tones

Although nonharmonic tones are not a primary topic of this treatise some mention of them is of importance for several reasons. First, because it will help familiarize the reader with the music and give a more complete perspective of the technique of composition; second, because the first symphony contains some rather unusual nonharmonic tones; and third, because some of the nonharmonic tones used (especially when simultaneous cross-relation is involved) are the predecessors of some typically modern chord sonorities that are found in the later symphonies (the fourth, fifth and sixth), most especially chords with simultaneous cross-relation (split 3rds, 5ths, and/or 7ths).

Although neither the origin of chords with added tones nor that of chords with split 3rds, 5ths, or 7ths can be conclusively derived from an investigation of any one composer (especially such an unfamiliar composer as Carl Nielsen), conclusions can be drawn as to their growth and development in the case of the individual composer being investigated.

Passing tones. Ascending and descending passing tones are found both in accented as well as in unaccented forms. The unaccented passing ascending 6th is used far more frequently than the chord with added 6th (as an

essential chord-tone). The relationship of the two is similar to that of the passing 7th and seventh chord found in the chorales of Bach.

Chromatic passing tones are found and occasionally cause simultaneous cross-relation. Although no examples of simultaneous cross-relation used as essential chord-tones have been found in the first symphony, they do occur in the second symphony. The chromatic passing tones of the first symphony are the antecedents of these modern chords found in the second symphony, and this growth is, therefore, arrived at by an evolutionary process rather than as a sudden incorporation of new sonorities.

Suspensions. All of the commonly found types used in the Baroque era (the 2-3, 4-3, 7-6, and 9-8 types) are also found in the first symphony, as well as some advanced types. One unusual example involving simultaneous cross-relation is a 3-3 suspension (diminished to minor in the bass) correctly spelled and prepared.[9]

Retardations. The use of chromatic harmony found in the first symphony occasionally results in retardations involving simultaneous cross-relation. The following types have been found:

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[9]Carl Nielsen, Symphony Number One, Second Movement, Measure 62.

1. An 8-9 retardation (augmented octave and major 9th, both actual and not the result of incorrect spelling) on a major-minor type seventh chord in third inversion, and, therefore, involving split 7ths.[10]

2. A 3-3 retardation (minor 3rd resolving to a major 3rd, both correctly spelled) found on a major triad in root position, and, therefore, involving the sonority of split 3rds.[11]

Neighboring tones. These have also been found in situations where they produce simultaneous cross-relation. In one case simultaneous upper and lower neighboring tones produced the sonority of a doubly diminished octave.[12]

Anticipations. These have also been found in situations where they caused simultaneous cross-relation.[13]

From the descriptions of nonharmonic tones it is clear that occurrences of simultaneous cross-relation are not only found in the first symphony, but they appear frequently enough to be considered a fairly prominent technique of the composer. Their employment

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[10] Ibid., First Movement, Measure 158, first beat.

[11] Ibid., First Movement, Measure 158, third and fourth beats.

[12] Ibid., First Movement, Measure 24, third beat.

[13] Ibid., Fourth Movement, Measure 383, second and third beats.

stems from the occasional use of extremely chromatic writing, a characteristic which is also prominent in Nielsen's later symphonies as well as in the first one.

II. THE FIRST MOVEMENT

Introductory Comments

The first movement is the longest one in the first symphony, totaling four hundred forty measures (if the repeat of the first ninety measures is taken) and is clearly in sonata form. Both the length and the form are typical of the first movements in all of Nielsen's symphonies except the fifth, and even in this case the first movement is related in form to the sonata. Thus the composer is consistently traditional in his use of sonata form in the first movements of his symphonies and also by making these first movements relatively long.

The content is in general also quite traditional. There are two main subjects; both are treated in the development section, and both appear in normal order in the recapitulation. The movement ends with a coda based on a fragment of the first subject, which is, of course, also quite traditional. Furthermore, the main sections of the movement (exposition, development, and recapitulation) are quite clearly separated from each other and rather clearly defined.

The key relationships used deviate from the classical form as used by Mozart and Haydn but are not exceedingly unusual for the era in which the work was written. In the exposition the first subject begins in G minor but contains a theme in D-flat major. In the recapitulation the first subject also begins in G minor but the theme which in the exposition was in D-flat major is now in E major. The second subject appeared in D-flat major in the exposition but appears in B-flat major in the recapitulation. From these examples, it is clear that the key relationships in the recapitulation vary considerably from those of the exposition.

Not only do the key relationships change in the recapitulation, but a considerable amount of new thematic development is carried out. Both changes of key relationship and the use of new thematic development in the recapitulation are not only characteristic of this movement but also of others in the symphonies that follow.

The cadence at the end of the first movement is of some interest because of the unusual treatment of the 7th in a seventh chord. The final chord progressions of the movement are:

i iv^7 i iv^7 i iv^7 i iv^7 i V i

In each case the 7th of the subdominant chord moves downwards to the 5th (of the same chord) before the tonic chord following sounds. This free treatment of 7ths is

typical of the composer and is a technique of composition which is found in all of the six symphonies, although not always as prominently as in the example just cited.

Chords

Table III - Tabulation of Chords
Symphony Number One - First Movement

Triads			
Major 52.2% 200	Minor 38.9% 149	Augmented 3.1% 12	Diminished 5.7% 22
Seventh Chords			
Major-minor 48.3% 130		Major-major 4.1% 11	
Minor-minor 20.4% 55		Minor-major 1.5% 4	
Augmented-minor 0.4% 1		Augmented-major - 0	
Diminished-minor 12.6% 34		Diminished-diminished 12.6% 34	
Ninth Chords			
Major-minor-minor 2		Major-minor-major 2	
Major-major-minor 0		Major-major-major 0	
Minor-minor-minor 2		Minor-minor-major 4	
Minor-major-minor 0		Minor-major-major 0	
Augmented chords with ninths 0			
Diminished-minor-minor 1		Diminished-minor-major 1	
Eleventh Chords - None found.			

Table III - Continued

Thirteenth Chords - None found.

Augmented Sixth Chords

Italian 0 French 8 German 1

Chords with Added Tones: Major with added major sixth 2

	Number of Occurrences	Percentage All Chords
Total Number of Triads	383	56.7
Total Number of Seventh Chords	269	39.9
Total Number of Ninth Chords	12	1.8
Total Number of Eleventh Chords	0	.0
Total Number of Thirteenth Chords	0	.0
Total Number of Augmented Sixth Chords	9	1.3
Total Number of Chords with Added Tones	2	.3
Total Number of Chords	675	

The chord tabulations for the first movement in general vary only slightly from those of the symphony as a whole.

Triads. Triads are used only slightly less than is usual for this symphony but there is some change in the statistics of the individual types. The major, augmented, and diminished types are used slightly more than usual, and the minor type slightly less. The increased use of the augmented triad is probably the most

significant change, since it is nearly twice as prevalent as normal.

Seventh Chords. Although seventh chords are used slightly more than is normal for this work and there are some changes in the frequency with which the individual types appear, neither of these changes is very significant. The major-minor, and major-major types show some decrease; the minor-minor, diminished-minor, and diminished-diminished types, increase; but the major-minor type remains the most common, outnumbering the minor-minor by a ratio greater than two to one. The equal use of the diminished-minor and the diminished-diminished types of seventh chords is quite typical of this symphony.

Ninth Chords. Since ninth chords are very rare, the deviations in the proportion between the various individual types is not especially significant. It is, however, interesting to note that the major-minor-major type, the most common type in the symphony as a whole, is equaled in prevalence by both the major-minor-minor and the minor-minor-minor types, and is exceeded by the minor-minor-major type.

Augmented Sixth Chords. There is no significant variation in either the total use of this chord or in the extent that the individual types are used. The

ratio of eight French sixth chords to one German Sixth is quite close to the norm for this symphony.

The most significant deviations found in the chord tabulation are:

1. The ratio of seventh chords to triads is higher than usual for this symphony as a whole.
2. The less common types of ninth chords are slightly more prevalent than usual in this movement.
3. The augmented triad, generally rare in this work, is used slightly more frequently than usual.

Root Movement

Table IV - Tabulation of Root Movement
Symphony Number One - First Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	42	8.1
By descending 2nd	64	12.4
By ascending 3rd	38	7.4
By descending 3rd	78	15.1
By ascending perfect 4th	160	30.9
By descending perfect 4th	109	21.1
By ascending or descending tritone	26	5.0
Total Number of Root Movements	517	

Tabulation of Change of Sonority

Change of Mode	52
Change of 5th	4
Change of both 3rd and 5th	15

There is some decrease in the use of both root

movement by ascending perfect 4th and that by descending perfect 4th, but the ratio between the two types is very close to the norm.

There is some increase in the use of root movement by descending 2nd; consequently, it outnumbers that by ascending 2nd by nearly three to two. This deviation is significant, especially because of the tendency of root movement by descending 2nd to produce abnormal chord progressions (abnormal according to principles of traditional harmony).

Both types of root movement by 3rd are used more than is usual for this symphony, but the ratio between the two types is quite normal, that by descending 3rd outnumbering that by ascending 3rd by more than two to one, a ratio that would tend to favor normal chord progressions.

Since the composer had no qualms about using the interval of the augmented 4th between the keys of the first and second subject in the exposition, it seems surprising that he did not use more root movement by this interval than is found. This low total of root movements by augmented 4th is typical of all of the composer's symphonies except the sixth, and is a conservative element as regards chord progressions.

The most significant deviations found in the tabulation are the reduced frequency of root movement by perfect 4th, a change having modern implications, and the

increased use of root movement by descending 2nd, significant because this is apt to cause chord progressions which deviate from traditional practices.

Tonality

The entire first symphony is basically conceived in the major-minor tonal system of the nineteenth century, but there is one peculiarity found in the major mode. The Mixolydian, or lowered 7th scale degree (a major 2nd below the tonic) is used both melodically and harmonically, and since it is often used alternately with the normal leading tone (a minor 2nd below the tonic), it would be misleading to say that the Mixolydian mode has an identity separate from the major. The two forms of 7th scale degree are blended in such a way as to imply that the composer's concept of the major mode includes both, just as the minor mode has two forms of this scale degree (a major and a minor 2nd below the tonic). Regarding this, Robert Simpson says:

> His [Carl Nielsen's] long and close proximity with folk-music made the major scale with a flat seventh (the so-called Mixolydian Mode) quite familiar to him, and it is also typical of his sunny disposition that when he composes in a minor key, the minor third may behave without warning as if it were a flat seventh in a major key.[14]

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[14]Robert Simpson, Carl Nielsen Symphonist (London: J. M. Dent and Sons, Limited, 1952), p. 9.

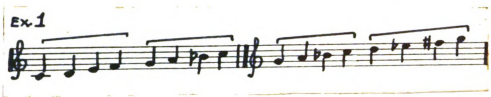
The Mixolydian 7th, until accepted as a part of the concept of an expanded major tonality can be upsetting to the listener. The traditional use of the lowered 7th in the nineteenth century was to modulate to the subdominant. Upon first hearing of the first symphony, the composer's traditional use of the lowered 7th would tend to establish this as a norm and the appearance of the same lowered 7th functioning within the key as a Mixolydian 7th cause one to expect a modulation which does not occur. From this phenomenon a principle can be derived. In the first symphony, the lowered 7th degree has two functions:

> First, as an altered tone which prepares a modulation.
> Second, as a Mixolydian 7th and an integral part of the already established tonality.

This dual function may again be a factor contributing to the general criticism occasionally heard that Carl Nielsen's music seems confused or ambiguous in tonality. When the nature of the lowered 7th, as used by the composer, is understood, this subjective doubt is removed and the music is better understood. Whether the music is consequently better liked or not remains a question of musical taste, but it must be admitted that the lowered 7th is used in an organized manner and is neither haphazard nor confused in concept.

When the major scale with lowered 7th is organized into two tetrachords, it is interesting to note that the upper one is identical to the lower tetrachord of a minor

scale.



In Example 1, C major and G minor were deliberately selected because these are the two keys found in this movement of the symphony. It is clear that the two keys share a common tetrachord and are, therefore, more closely related than the traditional C major and G minor would be. Since the two keys as used by Nielsen share a common tetrachord, melodic lines lying within this tetrachord could be in either key. Only the presence of E-flat or F-sharp (both belonging to G minor) would determine the tonal center. (The tone F is found in both C major and the natural form of G minor, and E, both in C major and the melodic form of G minor when ascending.) This common tetrachord is no mere coincidence, but rather a concept which is exploited considerably by the composer. If we were looking for a name for this phenomenon, it might be called modulation by common tetrachord. The opening five measures of the first symphony illustrate this principal and are given in Example 2.

There are several items of interest found in this example. Since the symphony is in G minor, the opening chords may be analyzed in two different ways. Either the symphony begins in G minor with a major subdominant triad (raised 6th scale degree) which progresses directly to the tonic triad in second inversion, and then to a dominant seventh chord followed by a tonic triad; or else it begins in C major (with mixolydian 7th) with a tonic triad followed by the minor form of the dominant triad which then becomes the tonic chord in G minor. In the second measure the D^7 chord tends to establish G minor as the tonic, but the G major triad following seems to function as a dominant triad in C major and causes the D^7 chord to function as a dominant of the dominant.

In the fourth measure the F major triad, although found in C major, has been preceded by a G major triad. This root movement is definitely moving away from the tonal center and suggests that G is the real tonal center and the F major triad, a subtonic chord (triad with root a major 2nd below the tonic). The D major triad which follows affirms this supposition and is then followed by a G minor triad, which for the first time clearly establishes G minor without ambiguity.

Looking at the melodic line it will be seen that the entire passage lies within the tonality of C major (with lowered 7th). Another interesting fact is that it

also is within the Dorian mode on G, if accidentals are permitted, and forms an authentic cadence composed of two major triads. Another interesting feature is that if the Dorian mode on G is considered to be the tonality, there are no irregular chord progressions. The G major triad is a tonic triad with Picardie 3rd; the F major triad a subtonic chord; the D major triad, a major dominant triad, and the G minor triad, an unaltered tonic triad. There is one major drawback in this analysis. This entire section of the movement is repeated, and the first ending, which leads back to the beginning, ends with a G major triad which functions as a dominant to the C major triad in the first measure. Thus on the repeat C major is quite clearly established.

These problems that occur in the beginning of the symphony should make quite clear to the reader the reasons why it is difficult or even impossible always to determine the tonalities used in this symphony. The entire work abounds with passages containing ambiguities such as these. As was stated previously, these ambiguities are mostly caused by the following factors:

1. Change of mode.
2. Root movement by descending 2nd.
3. Root movement by descending perfect 4th.

With the understanding that absolute precision is not possible, the tabulation of keys follows. Although the tonal centers cannot always be determined, the keys

cited will give the reader a rather precise picture of the number of accidentals used at a particular passage in the movement. If, for example, G minor is given as the prevailing key, this key may not be established with great certainty, but the melodic lines and chords will be within this key.

Keys

Table V - Tabulation of Keys

Measure	Key	Subject
	Exposition	
1-4	C (Mixolydian 7th)-g	IA
6-9	B-flat	IB
10-16	A-flat	
17-37	g Natural and raised 7th	
38-43	F	
44-45	Uncertain, unison, chromatic	
47-54	D-flat-d-flat Mixolydian 7th	II
55-58	B (C-flat)	
58-59	G	
60-62	E-flat	
63-68	f	
69-78	b-flat-B-flat	Second Theme of II
78-81	c Emphasis of ii in B-flat	
82-91	B-flat Mixolydian 7th	
92- 4	C Mixolydian 7th, Repeat to beginning	
82-90	B-flat end of repeat to 2nd ending	
	Development	
93-112	f	IA
113-117	F	IIA
118-121	B-flat-b-flat	
122-126	E-flat	

Table V - Continued

Measure	Key	Subject
127-129	e-flat, Natural 7th	
130-134	E-flat, Mixolydian 7th	
135-136	A-flat, Begins sequence up a 5th	IA
137-138	e-flat	
139-140	b-flat	
140-142	f	
142-145	D chromatic modulation	
146-147	a same sequence as at 135	
147-149	e	
149-154	b	
155-158	B secondary dominants emphasize E, F-sharp, which are IV, and V in B	IIA
159-160	F Very chromatic	Fragments of IA and IIA combined
161-163	f Natural 7th	
164-166	c Not certain	
167	d Authentic cadence	
168	f or c, not certain	
169	d	
170	f or c Natural 7th	
171	d Authentic cadence	
172-173	f No tonic chord	
174-175	g	
176	b-flat or f Natural 7th	
177	g Authentic cadence	
178	f	
179-183	g	
184-186	g Link based on subject IA	
	Recapitulation	
187-192	g Clearer than at beginning of exposition	IA
192-196	c Natural 7th	
197-200	a-flat	
201-203	g	
204-206	g Dorian Chords i and IV	IB
207-211	A-flat	
212-214	a-flat	New, development of IB
215-217	c-sharp (d-flat)	

Table V - Continued

Measure	Key	Subject
218-221	F-sharp Mixolydian 7th used melodically, normal 7th harmonically	
222-225	A-flat Mixolydian 7th	
226-234	B-flat Mixolydian 7th	
235-240	g vii° and ii° only	
241-251	E Mixolydian 7th descending, normal 7th ascending	IA (new) IIB
252-262	F-sharp Mixolydian 7th melodically, both 7ths harmonically	
263-277	B-flat series of Dominant 7ths	IIA
278-280	E-flat	
281	A-flat	
282-283	E F-flat	
284-286	A same series of Dominant 7ths as above	
287-294	D	
295-311	g Coda	Subject IA
318-322	C	
322-350	g	

The first part of the first subject (Ia) involves a conflict between the key of C (with some use of Mixolydian 7th) and G minor. The second part of the first subject (Ib) is in G minor and affirms this key as the tonal center of the symphony.

The main modulations are to A-flat major (in Ia) then to G minor (Ib) and finally to F major (in Ib). The sequence of two modulations, each of a descending 2nd, parallels the prominence of root movement by descending 2nd. These modulations are the most foreign ones in the first subject and involve a key change of only two

accidentals from each key to that which follows.

The first part of the second subject (IIa) is in 3rd relation to the passage preceding it (F major to D-flat major) and contains one modulation of a descending 2nd (D-flat major to B major) followed by a sequence of two modulations of descending major 3rds (B major to G major to E-flat major) and then modulates up a major 2nd (to F minor).

Subject IIa resembles Ia in containing a sequence of two modulations by descending 2nd, but it offers contrast by also containing a sequence of two modulations by descending major 3rd.

Subject IIb contains more extensive use of change of mode (as a type of modulation) than the preceding materials, the changes being between B-flat major and B-flat minor. It also contains a conflict between two keys, B-flat major and C major with Mixolydian 7th, and in this way resembles Ia, although the conflicting keys are not the same or in the same relationship to each other. At the end of IIb there is a sudden chromatic change (in the first ending) causing an authentic cadence in C major, the G major triad being in the first ending, and the C major triad being the first chord of Ia which follows. This cadence causes ambiguity of tonality, making it difficult to determine whether G minor or C major is the real tonal center.

Only Ia and IIa are treated in the development section (Ib and IIb are developed somewhat in the recapitulation section and are, therefore, not transitory). Ia is developed first, then IIa, more Ia, and then elements of the two themes are developed simultaneously. It is, therefore, convenient and profitable to compare the types of modulation used in the sections treating only Ia to those dealing only with IIa.

Sequences of modulations by ascending perfect 5th are used almost exclusively in the development of Ia. There is a sequence of four keys in this relationship followed by one modulation from F major to the relative minor, D minor, (measure 142), and then a sequence of four keys each a perfect 5th above the preceding key.

Change of mode is prominent in the development of IIa, as is a short sequence of three keys each a perfect 5th higher than the preceding key.

The remainder of the development section (measures 155-186) contains treatment of both Ia and IIb. In contrast to the preceding passages (in the development section) there is only one modulation by perfect 4th. Other than one modulation by augmented 4th and some change of mode, the remainder of the modulations are all by major 2nd or else by minor 3rd. Those by minor 3rd are between relative major and minor keys (or vice versa) and those by major 2nd between two minor keys. It will be

noted that except for the modulation by augmented 4th and the modulations by change of mode, none of the modulations involve a change of more than two accidentals and are, therefore, to relatively close keys.

The recapitulation varies considerably from the exposition. Ib and IIb are developed (compensating for their absence in the development section), and the keys used occasionally vary considerably from their original form. The new keys are partly the result of the new developments of Ib and IIb, but some are simply variations from the exposition and used to create contrast. Both the inclusion of new development in the recapitulation section and the changes in the keys used are typical not only of this movement but of others in the symphonies which follow when sonata form is used.

Modulations by perfect 4th are still very prevalent as are modulations by descending minor 3rd (from a major key to its relative minor). There is, however, one very striking modulation (by descending minor 3rd) which was not used before, and this is a modulation from G minor to E major, one involving a change of six accidentals.

It will be remembered that in the exposition the modulation from F major to D-flat major (when subject IIa was introduced) was very prominent. This modulation does not occur in the recapitulation because of the inverted order of presenting IIa and IIb (IIb appears before IIa

in the recapitulation).

There are several interesting new modulations found in the exposition. At measure 197 there is one from C minor to A-flat minor by common chord, III in C minor (an E-flat triad) becoming V in A-flat minor. At measure 241 there is the previously mentioned modulation from G minor to E major, which is, of course, very foreign, involving a change of six accidentals.

Conclusions concerning modulations in the first movement. The relative rareness of modulations in 3rd relation (between keys of like mode) distinguishes the movement from writings of Wagner and of the composers influenced by him. Modulations by 2nd and by 3rd, especially in sequences, are a distinct feature of the movement although not necessarily peculiar to Carl Nielsen. The large number of modulations to keys a perfect 4th distant, and between relative major and minor keys mark the tonal scheme as rather conservative in comparison to Mahler, Bruckner, and Wagner. Modulations to very distant keys do, however, become rather prominent when used because of their great rareness.

III. THE SECOND MOVEMENT

Introductory Comments

The second movement (Andante) is in episodical

form (ABA Coda). The first part (part A) is basically in G major and is structurally one long continuous melodic line with no repetition of any periods within it. If the concepts of altered chords and of tonicization are used, the entire section could be considered to remain in G major.

The second main section of the movement, which begins at measure 20, is in the parallel minor (G minor) of the first section. It could conceivably be considered to be entirely in this key, but the remoteness of some of the chords would tend to imply that at least some modulation does occur. For example, the A-flat minor triad found in measure 33 is very remote, although it is possible to consider it a minor form of the Neapolitan chord.

When the first section returns at measure 58, it is considerably altered both rhythmically and harmonically. The accompaniment is now in compound meter and creates a rhythmic pattern of two against three, since the melodic line is in simple meter. Like the first presentation of this section, it could be considered to be entirely in G major, but the remoteness of some of the chords implies at least some modulation. For example, the E-flat minor triad at measure 70 would have to be considered as an altered submediant triad, even if borrowed from the parallel minor, because the G-flat is foreign to both G major and to G minor.

Chords

Table VI - Tabulation of Chords
Symphony Number One - Second Movement

Triads

Major 91 57.2% Minor 64 40.3% Augmented 1 .6% Diminished 3 1.9%

Seventh Chords

Major-minor 65 51.2% Major-Major 4 3.1%

Minor-minor 35 27.6% Minor-major 0

Augmented-minor 0 Augmented-major 0

Diminished-minor 15 11.8% Diminished-diminished 8 6.2%

Ninth Chords

Major-minor-minor 0 Major-minor-major 6

Major-major-minor 0 Major-major-major 0

Minor-minor-minor 0 Minor-minor-major 1

Minor-major-minor 0 Minor-major-major 0

Augmented Chords with ninths 0

Diminished Chords with ninths 0

Eleventh Chords: None found.

Thirteenth Chords: None found.

Augmented Sixth Chords

Italian 0 French 7 German 0

Table VI - Continued

	Number of Occurrences	Percentage All Chords
Total Number of Triads	159	53.0
Total Number of Seventh Chords	127	42.3
Total Number of Ninth Chords	7	2.3
Total Number of Eleventh Chords	0	--
Total Number of Thirteenth Chords	0	--
Total Number of Augmented Sixth Chords	7	2.3
Total Number of Chords with Added Tones	0	--
Total Number of Chords	300	

Triads. The triad totals 6.7 per cent less than the overall average for triads in this symphony, also 3.7 per cent lower than in the preceding movement, but it is nevertheless the most prevalent type of chord, accounting for more than half of all chords. Of these, the major triad is the most common type and above average (for this type of triad) by six per cent. The minor triad totals 2.1 per cent lower than usual, and the diminished triad is exceedingly rare. The most important change is that of the diminished triad, since the total use has fallen from 4.8 per cent (the average for this type of chord in this symphony) to 1.9 per cent.

Seventh Chords. Seventh chords are used more in the second movement than in any other movement of the first symphony, but they total only five per cent above the average. Although the major-minor type is still the

most common, accounting for more than one-half of all seventh chords, there is a very substantial increase in the use of the minor-minor type. Another change is that the diminished-diminished type seventh chord is used barely half as often as the diminished-minor (the two types are used nearly equally in the symphony as a whole). Both the decreased use of the diminished-diminished type, and the increased use of the minor-minor type are unusual for the first symphony but anticipate a trend found in the symphonies which follow.

Ninth chords. Although ninth chords are very rare, they are found nearly twice as often as usual for this symphony. The only types found are the major-minor-major and the minor-minor-major, and both of these are based upon either of the two most-used types of seventh chord, the major-minor, and the minor-minor. This, plus the fact that both types use the major 9th, indicates that they are the most conservative types of ninth chords.

Augmented sixth chords. The total use is not significantly high though above average for this type of chord. The fact that the French sixth is the only type found is unusual, but the German type is usually quite rare; its total absence in this movement is, therefore, not especially significant.

The overall chord texture of the second movement

is generally conservative in comparison to other movements of this symphony. Both augmented as well as diminished triads are less numerous than average, and only the most conservative types of ninth chords are found. Only seventh chords show growth in a modern direction.

Root Movement

Table VII - Tabulation of Root Movement
Symphony Number One - Second Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	19	8.3
By descending 2nd	14	6.1
By ascending 3rd	11	4.8
By descending 3rd	28	12.2
By ascending perfect 4th	91	39.7
By descending perfect 4th	59	25.8
By ascending or descending tritone	7	3.1
Total Number of Root Movements	229	

Tabulation of Change of Sonority

Change of Mode	22
Change of 5th	7
Change of both 3rd and 5th	5

There are a number of deviations from the average of the entire symphony that are found in the tabulation of root movement, and they are all conservative in nature, moving backwards towards the practices of the Baroque era.

Root movement by 4th. There is a substantial increase of root movement by ascending perfect 4th but not by descending perfect 4th. Not only does increased use of root movement by perfect 4th have conservative implication, but root movement by ascending perfect 4th, the type most apt to produce normal chord progressions, shows the greater increase.

Root movement by 3rd. There is a decrease found for both the ascending and descending types. This is in itself a conservative implication, as is the particularly restricted use of the type most apt to produce irregular chord progressions, root movement by ascending 3rd.

Root movement by 2nd. Although both types are used less than is usual for this symphony, root movement by descending 2nd is used less than that by ascending 2nd. This is especially significant since the predominance of root movement by descending 2nd over that by ascending 2nd is one of the most salient features of the root movement found in this symphony.

All changes are conservative, the only peculiarity of the symphony as a whole that is retained being that root movement by 3rd remains predominant over that by 2nd.

There is, however, one important fact about root movement which does not appear in the tabulation, a fact which causes some unusual chord progressions. The use of

the natural minor results in a minor dominant triad (or chord). This causes some very modal chord progressions, even when progressing by ascending perfect 4th to the tonic. Similarly, the subtonic triad (with root a major 2nd below the tonic degree) produces some rather modal sounding harmony even when the root movement is normal.

Because of the considerable interest in modal harmony, the reader's attention is directed towards the comments accompanying the tabulation of keys. There he will find more detailed information about the composer's use of such harmony.

Keys

Table VIII - Tabulation of Keys

Measure	Key	Comments	Form
1-10	G	Somewhat chromatic, somewhat vague	Part A
11	C		
12	F	Series of modulations by 4th	
13	B-flat		
14	b-flat & f	Chromatic modulation on 3rd beat	
15	g		
16-17	G-g		
18-19	G	Minor iv helps prepare for g of second section (part B) following	
20-23	g	Natural 7th, very modal	Part B
24-27	g	Unusual harmony g b-flat b i iii iii f F D g vii VII V i	

Table VIII - Continued

Measure	Key	Comments	Form
28-29	G	Mixolydian 7th, I^7	
30	(C)	IV in G	
31	(F)	VII in G	
32	g	3rd relation E^{b7} C E^{b7} C	
33-34	a-flat		
35-36	a		
37	G		
38	G	IV^7 with alternately major, then minor 7th	
39	g	iv^7 iv, 7th approached by passing tone from 5th of chord, disappears by leaping down 3rd	
40	G		
41-42	g		
43-44	c or g	c: v^7 i v^7 i, natural 7th g: i^7 iv i^7 iv, natural 7th, very modal	
45-46	g	VII III, natural 7th	
47-48	G		
58-61	G		Part A
62-65	G-g	Unusual deceptive progression, cadence expected D^7 b^7 b^b e C D G G: V^7 iii^7 g: iii vi IV V I	
66-67	(C)	IV in G	
68	(F)	Series of dominant 7ths (F=VII in g)	
69	(B-flat)	B^b=III in g	
70	(e-flat)	e^b=vi in g	
71-72	f	f=vii in g	
73	g		
74-76	G-g	$a^{\#7}$=$ii^{\#7}$ from minor, tonic is major	
77-79	G		
80-87	G	Neapolitan sixth chord prominent	Coda

The modulations used are in general very conservative for the era in which this symphony was written, and the chief interest centers on the concept of tonality

used--one with considerable use of the Mixolydian 7th. The sequence of three modulations by descending perfect 4th (each new tonic is a perfect 4th below that of the preceding key) at measures ten through thirteen is not especially unusual. Similarly, the sequence of five major-minor seventh chords, each progressing by ascending perfect 4th, is a very common musical cliché of the nineteenth century.

The modulations from G minor to A-flat minor and then to A minor (measures 32-35) are the most interesting modulations found in the tabulation. However, these are not unusual when compared to some of the modulations found in the works of Mahler, Bruckner, or Wagner.

IV. THE THIRD MOVEMENT

Introductory Comments

The third movement basically resembles a scherzo but has some peculiarities. It is somewhat slower than the scherzo as written by Beethoven and is in this respect more like the type of movement Brahms wrote, i.e., the third movement of Brahms' first symphony. Another difference from the scherzo of Beethoven is the form. Carl Nielsen uses a form closely related to the rondo. Three themes (A, B, and C) are used, and the first (or a fragment thereof) always appears before and after each of the other two themes. There is some

development of material, but since the movement lacks a clear development and recapitulation, the form seems closer to the rondo than to the sonata rondo.

Because of the unfamiliarity of this symphony, the three main themes are presented below and discussed to help acquaint the reader with the music.

Example 3 (measures 6 through 8) shows the first appearance of theme A. It demonstrates very clearly the composer's use of the normal 7th scale degree (in E-flat major) followed by the mixolydian 7th. Also very characteristic is the preparation of both of the 7ths (D and D-flat) from the 5th of the chord (B-flat), and also that both resolve downwards to the 5th without any change of chord. This absorption, so to speak, of 7ths into the 5th of the chord with no other resolution (either real or implied) is very characteristic of the composer, not only in the first symphony but in those that follow as well.

Example 4 (measures 32 through 35) shows the first three measures of theme B. Of interest is the use of duple meter, a deviation from the traditional scherzo which was also used by Kallinikof in the scherzo of his first symphony. Also worth noting is the plagal cadence with passing added 6th (the 6th moves too rapidly to be considered an essential chord tone). This example gives some evidence (at least in the case of Carl Nielsen) that the added 6th (as an essential chord tone) is related to the passing sixth in the same way that the 7th as an essential tone in a chord was to the passing 7th at the time of Bach. That is, the use as an essential chord tone stems from use of the same interval as a nonharmonic tone (passing tone in this case). The later symphonies of Nielsen prove that the added 6th does become more prevalent than in the first symphony.

Example 5 (measures 88 through 93) has several interesting features. First, alternations between G minor and C minor triads sound modal and make it difficult to determine whether C or G is the real tonal center. Measures 92 and 93 contain a more exposed use of chords in 3rd relation than has been found earlier in this symphony. This same chord progression is repeated three measures later (first by the woodwinds, then by the strings). This passage reminds one very much of Dvořák's fifth symphony. It can be definitely stated that in this case Nielsen was not influenced by this work, since it was written later than Nielsen's first symphony.

Chords

Table IX - Tabulation of Chords
Symphony Number One - Third Movement

Triads

Major $\frac{57.4\%}{139}$ Minor $\frac{37.6\%}{91}$ Augmented $\frac{1.7\%}{4}$ Diminished $\frac{3.3\%}{8}$

Table IX - Continued

Seventh Chords

Major-minor	52.9% 81	Major-major	10.4% 16
Minor-minor	11.1% 17	Minor-major	.7% 1
Augmented-minor	0	Augmented-major	0
Diminished-minor	10.4% 16	Diminished-diminished	14.4% 22

Ninth Chords

Major-minor-minor 0	Major-minor-major 3
Major-major-minor 0	Major-major-major 1
Minor-minor-minor 0	Minor-minor-major 0
Minor-major-minor 0	Minor-major-major 0

Augmented Chords with ninths 0

Diminished Chords with ninths 0

Eleventh Chords: None found.

Thirteenth Chords: None found.

Augmented Sixth Chords

Italian 0 French 3 German 0

	Number of Occurrences	Percentage All Chords
Total Number of Triads	242	60.2
Total Number of Seventh Chords	153	38.1
Total Number of Ninth Chords	4	1.0
Total Number of Eleventh Chords	--	--
Total Number of Thirteenth Chords	--	--
Total Number of Augmented Sixth Chords	3	.7
Total Number of Chords	402	

None of the main classes of chords (triads, seventh chords, ninth chords, etc.) deviate as much as one per cent from the averages for each in the symphony as a whole. There are, however, some changes in the extent that individual types of chords are used.

Triads. The major triad is used more in the third movement than in any other movement in this symphony but the total is only 6.1 per cent above the average for major triads in this symphony. The minor triad is rarer than in any other movement, but only 4.8 per cent below the average for minor triads. Diminished triads are slightly less common than usual, and augmented triads are very close to the norm.

Seventh chords. Seventh chords based on the major triad are unusually prevalent, accounting for nearly two-thirds of all seventh chords. This increase parallels the high total of major triads. Similarly, seventh chords based on the minor triad are unusually scarce, paralleling the low total of minor triads. The diminished-diminished type outnumbers the diminished-minor. This is the only movement of this symphony where this occurs, and it is in considerable contrast to the preceding movement where the reverse was true (the diminished-minor outnumbered the diminished-diminished type).

The prevalence of the major-major seventh chord is

very significant, because it is used nearly sixteen times as much as usual for this symphony. The implications of this are definitely modern since the major-major seventh chord is one of the more dissonant types.

Ninth Chords. The only types found are based on the major triad. This in a small way also reflects the general trend of this movement to favor major type chords.

Augmented Sixth Chords. As in the preceding movement the French sixth is the only type found.

Chords with added tones. Although none are found, the passing added 6th must be mentioned as being prominent in this movement though not very prevalent. This is significant since this sonority is the antecedent of the chords with added 6ths found in the later symphonies.

The unusually large number of chords of major sonority is entirely in keeping with the scherzo-like character of the movement. This abundance of major type chords, especially the major-major seventh chord, contrasts with the preceding movement and adds variety to the symphony as a whole.

Root Movement

Table X - Tabulation of Root Movement
Symphony Number One - Third Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	32	9.6
By descending 2nd	27	8.1
By ascending 3rd	36	10.8
By descending 3rd	64	19.3
By ascending perfect 4th	95	28.6
By descending perfect 4th	66	19.9
By ascending or descending tritone	12	3.6
Total Number of Root Movements	332	

Tabulation of Change of Sonority

Change of Mode	8
Change of 5th	2
Change of both 3rd and 5th	4

Root Movement by perfect 4th. This is used considerably less than in any other movement of this symphony. The total of less than 50 per cent is unusually low, but would be quite ordinary in the later symphonies, and it, therefore, anticipates the trend of these. Decreased use of root movement by perfect 4th is probably typical of the twentieth century in general and, therefore, is modern in implications. The proportion between the two types, descending and ascending, is not unusual.

Root Movement by 3rd. Both types (ascending and

descending) are used unusually extensively, and each is more prevalent than either type of root movement by 2nd. Root movement by 3rd is, therefore, a very prominent feature of the third movement. The predominance of that by descending 3rd over that by ascending 3rd is a conservative element, being quite normal in music of an earlier period, but the unusually high overall total of root movement by 3rd is more significant than the conservative proportion between the two types.

Root Movement by 2nd. This is quite close to the average in total, but the proportion between the two types is reversed, root movement by ascending 2nd now prevailing over that by descending 2nd. This prevalence of root movement by ascending 2nd was also found in the preceding movement and is conservative in its implications.

The most significant changes are the decrease of root movement by perfect 4th to less than 50 per cent of the total, and the increase of root movement by 3rd to slightly less than one-third of the total.

Changes of Sonority

Change of mode is used very infrequently--another peculiarity of the third movement.

Keys

Table XI - Tabulation of Keys

Measure	Key	Comments	Form
1-14	E-flat		Part A
15-17	F		
18-20	G		
21-26	e-flat		
27-31	E-flat		
32-37	c		Part B
38-39	g		
40-42	C	Mixolydian and natural 7th	
43-45	(G)	Emphasis of dominant	
46-50	C	Cadence ii^7 V IV, deceptive	
51	d		
52-53	e		
54-57	g	Subtonic chord F and V^7 (D^7) natural and harmonic form of minor	
58-59	(d)	Emphasis of dominant	Link (A')
60-63	(d)	Emphasis of supertonic	Link (A')
64-65	g	Authentic cadence	Link (A')
66-68	g		Part C
69-79	E-flat		Part C
80-87	E-flat	First ending, leads to beginning	Link (A&B')
80A-87A	E-flat	Second ending	Link (A'&B')
88-97	g	3rd relation E^b-C, still in g	Part C (slow)
98-100	F		Part A
101-104	G		
105-108	a		
109-117	c	Unusual 3rd relation c a^b c a^b c a^b reminiscent of Part C	Part C'
118-121	e-flat	Same progression as above up a minor 3rd. e^b c^b e^b c^b e^b c^b	
122-123	f-sharp	Authentic cadence	
124	c-sharp	Authentic cadence	
125-129	f-F	Minor with Picardie 3rd on tonic	A developed
130-137	F		
138-143	B-flat		
144-149	E-flat		
149-156	E-flat		Part A
157-158	F		
159-162	B-flat		
163-169	c-sharp		A developed
170-173	(g-sharp)	Emphasis of dominant in c-sharp	

Table XI - Continued

Measure	Key	Comments	Form
174-182	E		
183-198	E-flat	Modulation involving French sixth	
199-207	3rd relation, E^{b} C E^{b7} a^{b} c a^{b}		Part C (slow)
208-227	E-flat		Part A and Coda

Table No. XII has been prepared to demonstrate the frequency of modulations to the variously related keys. Also, although not strictly a modulation, change of mode is included in this and other similar tables because of its special significance in Nielsen's music.

Table XII - Frequency of Modulations

Interval Between Tonics	Relationship of Keys	Number of Occurrences
Unison	(change of mode)	1
2nd	closely related	3
2nd	foreign	6
3rd	closely related	6
3rd	foreign	7
perfect 4th	closely related	5
perfect 4th	foreign	1

From Table No. XII the following facts are obtained:

1. The number of close modulations used and that of

foreign modulations used are identical (14).
2. Modulations by 3rd are the most common type occurring thirteen times.
3. Modulations by 2nd are next most common, totaling nine occurrences.
4. Modulations by perfect 4th are next most common, totaling six occurrences.
5. Change of mode (as a modulation) is least common, occurring only once.

The prevalence of modulations between keys a 3rd apart parallels the unusually high quantity of root movement by the same interval.

V. THE FOURTH MOVEMENT

Introductory Comments

The final movement is in sonata allegro form, as was the first movement; and like the first movement it begins with a C major triad, then moves to G minor. Unlike the first movement, which ended in G minor, the fourth movement ends in C major. It is certainly unusual for the era in which the first symphony was written for a symphony to end in a key other than that which it is allegedly written. Robert Simpson says that this might historically be the first use of this.[15] The ending in C major is not arbitrary nor entirely unexpected since there was doubt at the beginning of the symphony as to

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[15]Simpson, op. cit., p. 9.

whether C major or G minor was the principal key, and also because the end of the exposition set up a perfect authentic cadence to the C major triad at the repeat of the beginning.

The first subject begins and ends in G minor but contains a number of modulations. A transitory theme that is in D minor and is answered in A minor (both in natural or Aeolian minor) leads into the beginning of the second subject (which is in B-flat major and sometimes minor).

The second subject is composed of four themes which later become interwoven and developed into new hybrid themes in the development section. In the development section not only are themes from the second subject combined with each other but also with materials from the first subject as well. These developments are generally quite straightforward and the derivation of these quite clear.

The recapitulation presents all of the themes of the exposition and in the same order as they first appeared, but there is one peculiarity. A new theme, evolved from materials of the development section, appears directly after the first subject. This evolution of a new theme from materials presented earlier is characteristic of the composer, as is the appearance of such a new

theme in the recapitulation. Even more of this will be found in the later symphonies.

The principal themes of the fourth movement are given in part in Examples 6 and 7.

Example 6 is of the opening measures of the movement; the C major triad at the beginning is clearly seen. The most distinctive features of the melodic line are the two ascending perfect 4ths followed by a descending arpeggio figure.

Example 7 (measures 37-40) is part of the transitional theme leading into the second subject. Ninth chords are implied on the second and fourth beats of both the first and third measures. The absence of both the 3rds and the 7ths in the ninth chords creates a sonority identical to that of a quartal chord composed of three perfect 5ths. However, the partwriting, especially the preparation and resolution of the 9th, strongly implies the function of a ninth chord, the 9th being prepared by neighboring tone figure and resolving downward by 2nd. This example, even though used here as a ninth chord in a very traditional manner, is the antecedent of the more modern use as quartal harmony which is found in the sixth symphony. It serves as an example of how the composer tends to first use very modern sonorities in a very traditional manner and then in later years use them in a more modern manner. This evolutionary development of new sonorities is more typical of the composer than is a sudden and revolutionary employment of new sonorities.

Chords

Table XIII - Tabulation of Chords
Symphony Number One - Fourth Movement

Triads

Major	Minor	Augmented	Diminished
45.6% 226	48.2% 239	.6% 3	5.6% 28

Seventh Chords

Major-minor 54.2% 141	Major-major 7.3% 19
Minor-minor 19.2% 50	Minor-major 1.1% 3
Augmented-minor 1.5% 4	Augmented-major .8% 2
Diminished-minor 8.1% 21	Diminished-diminished 7.7% 20

Ninth Chords

Major-minor-minor 1	Major-minor-major 1
Major-major-minor 0	Major-major-major 0
Minor-minor-minor 0	Minor-minor-major 1
Minor-major-minor 0	Minor-major-major 0
Augmented with Ninth 0	
Diminished-diminished-minor 2	

Eleventh Chords

Minor-minor-major-perfect 1

Minor-minor with no 9th, and Augmented 11th 1

Augmented Sixth Chords

Italian 0	French 2	German 2

Table XIII - Continued

	Number of Occurrences	Percentage All Chords
Total Number of Triads	496	64.7
Total Number of Seventh Chords	260	33.9
Total Number of Ninth Chords	5	.7
Total Number of Eleventh Chords	2	.3
Total Number of Thirteenth Chords	--	--
Total Number of Augmented Sixth Chords	4	.5
Total Number of Chords	767	

There is considerable change in the balance between triads and seventh chords, but no other basic type of chord (ninth chords, eleventh chords, etc.) deviates from the norm for that type of chord by as much as one per cent. The increase in the use of triads is quite significant since this type of chord accounts for nearly two-thirds of all chords, a quite high total compared to the 53 per cent found in the second movement. The decrease in the use of seventh chords is not as great a change, but the fourth movement does have the lowest proportion of seventh chords found in the first symphony.

Triads. Minor triads are more numerous than major ones, and this is the only movement in this symphony where this occurs. The cause appears to be the extensive use of the minor mode in the first and second subjects as

well as in the transitional theme. Another contributing factor is the considerable use of the natural (or Aeolian) form of the minor with its characteristic minor dominant triad.

Seventh Chords. A slightly higher proportion of seventh chords of the major-minor type are found than usual but the change is not especially great. The percentages of both diminished-diminished and of diminished-minor seventh chords are lower than usual but not significantly so. Increased use of the major-minor type has conservative implications because of the prevalence of this chord in the nineteenth century.

Ninth Chords. The diminished-diminished-minor ninth chord is not found in any other movement of this symphony. Although it is exceedingly rare in this movement, its use has some significance because of its considerable dissonance (caused by the minor 9th). Increased use of dissonance is, of course, a characteristic development of twentieth-century music, and the appearance of such chords is, therefore, worth noting.

Eleventh Chords. Eleventh chords are not found in any other movement in this symphony. Their use, although rare, is of interest because it has definite implications of growth in the direction of twentieth-century practices.

Increased use of triads, with a corresponding

decrease in seventh chords, is a change of the conservative type, moving in the direction of music of an earlier time. Nevertheless, in the case of Nielsen this begins a trend which continues through his fourth symphony. The change anticipates particularly the proportion between triads and seventh chords that will be found in the second symphony.

The first appearance in this symphony of several new and rather dissonant chords also anticipates the practices of the second symphony in which even more new chords will be found.

The predominance of the minor triad over the major type found in this movement is a definite peculiarity and one that is rarely encountered in Nielsen's symphonies, the third movement of the sixth symphony being the only other movement where it is found.

Root Movement

Table XIV - Tabulation of Root Movement
Symphony Number One - Fourth Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	55	9.7
By descending 2nd	51	9.0
By ascending 3rd	21	3.7
By descending 3rd	55	9.7
By ascending perfect 4th	197	34.7
By descending perfect 4th	161	28.3

Table XIV - Continued

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending or descending tritone	28	4.9
Total Number of Root Movements	568	

Tabulation of Change of Sonority

Change of Mode	60
Change of 5th	9
Change of both 3rd and 5th	8

Root Movement by perfect 4th. Both types are used more than usual, especially that by descending perfect 4th which is used more extensively than in any other movement of this symphony. These increases have conservative implications.

Root Movement by 3rd. There is a decrease in the use of both types, and that by ascending 3rd is less prevalent than root movement by augmented 4th--very unusual, especially for the first symphony. The decreased use of root movement by 3rd is in contrast to the abundance of this type of chord progression found in the preceding movement. Such contrast in the use of root movement is typical of the composer and will be found in other symphonies.

Root Movement by 2nd. The tabulations are nearly identical to those found in the preceding movement, with a slight predominance of root movement by ascending 2nd over that by descending 2nd.

The most important change found in the tabulation is the decreased use of root movement by 3rd, which is very much in contrast to the preceding movement. In each main class of root movement (by 2nd, by 3rd, by perfect 4th) the type most apt to produce normal (or traditional) chord progressions is most prevalent (by ascending perfect 4th, descending 3rd, and ascending 2nd.)

Change of Sonority. Changes of mode are about as prevalent as they were in the first movement, but this is in contrast to the third movement where they were particularly uncommon.

Keys

Table XV - Tabulation of Keys

Measure	Key	Comments	Part of Form
		Exposition	
1-9	g		Subject I
10-16	e-flat		
17-24	F	Mixolydian and Major 7th alternate	
25-27	G		
28-32	g		
33-34	c	Harmonic form of scale in two-part writing	

Table XV - Continued

Measure	Key	Comments	Part of Form
35-36	g		
37-44	d		transitional theme
45-48	a		transitional theme
49-56	b-flat		Subject IIa
57-65	B-flat		Subject IIa
66-69	b-flat		Subject IIb
70-72	b-flat-B-flat	Chords of both modes	
73-76	B-flat		Subject IIc
78	b-flat		
79-81	E-flat	Elements of IIb and IIc combined into new thematic material	
82-83	b-flat		
84-85	(F)	Secondary dominant of V in b^b	
86-87	c		
88-89	C		
90	c		
91-92	g		
93-94	(C)	Accentuation of dominant of g	
95-96	g		
97-108	b^b		
109-119A	B-flat	Elements of Subj. IIa, IIb, and IIc	
120-121A	g	Measures 1-116 now repeated	Link
109-126	B-flat		
		Development Section	
127	d		
128-131		Contrapuntal sequence with series of dominant 7ths, A^b, G, $F^\#$	
132-142	F	Development of Subject IIb	
143-145	g		
146-152	g	Subjects IIb and I contrapuntally combined	
153-163	A-flat		
164-170	C	Subject IIb developed	
170-177	F		
178-181	B-flat		
182-201	B		
202-204	g	Unison writing	
205-207	e-flat	Unison writing	
209-213	B	Two part writing, the two part cannon with third part pedal	

Table XV - Continued

Measure	Key	Comments	Part of Form
214-215	E		
216-229	D-flat	Enharmonic modulation	
230-233	D-flat		Transitional theme developed
234-241	b-flat		
242-246	f		
247-269	g	Deceptive cadence	
		Recapitulation	
270-276	g		
277-283	e-flat		
284-288	F		
289-291	A-flat		
292-293	F-sharp-f-sharp	Change of mode	
294-300	g		
301	(C)		
302	(F)	Sequence of 7th chords, still	(New material
303	(B-flat)	g minor	related to Sub-
304	(E-flat)		ject I)
305-309	g		
309	E-flat		
310	A-flat		Same thematic
311	D-flat	Sequence of Major-major	material as
312	G-flat	7th chords	above
313	C-flat		
314	F-flat		
315-319	E-flat	Mixolydian 7th	Subject IIa
320	e-flat		
321-327	a-flat		
328-331	g		Link based on IIa
332-339	g		Subject IIb
340-346	G		Subject IIc
347-348	C		
349-350	g		
351-352	D		
353-363	a		
364-371	g		
372-375	F		Coda based on IIb
376-378	a	Natural minor, chord i and v only	
379	G		
380-382	g		
383	(d)	Emphasis of v in g	
384-387	g		
388-395	C	First Mixolydian 7th then normal major 7th	

Because of the very large number of modulations (or implied modulations), Table No. XVI has been prepared to indicate the types of modulation and the number of occurrences of each.

Table XVI - Type of Modulation and Number of Occurrences

Type of Modulation	Number of Occurrences
By change of mode	10
By 2nd to closely related key	3
By 2nd to foreign key	14
By 3rd to closely related key	8
By 3rd to foreign key	9
By perfect 4th to closely related key	23
By perfect 4th to foreign key	1
By augmented 4th (always foreign key)	0
Total number of modulations by 2nd	17
Total number of modulations by 3rd	17
Total number of modulations by perfect 4th	24
Total number of modulations by augmented 4th	0
Total number of modulations to close keys	34
Total number of modulations to foreign keys	24

From this table the following facts are derived:

1. Modulations to closely related keys are more prevalent than those to foreign keys.
2. Modulations to keys a perfect 4th distant are the most numerous single type of modulation.
3. The numbers of modulations to keys a 2nd away and to keys a 3rd away are equal.
4. Modulations to keys an augmented 4th distant are not found.

Some interesting modulations found in the tabulation of keys are:

1. Two sequences of modulations by perfect 4th, one involving six keys (measures 305 to 309) and the other a series of four keys (measures 301 to 304).
2. A tier of three keys a major 2nd apart (A minor, G minor and F major found at measures 353-372).

Although modulations to keys an augmented 4th away are not found, there are several to keys a minor 2nd distant (A minor to B-flat, measure 49; B-flat major to B major, measure 315).

At measures 201-209 there is a sequence of modulations by descending major 3rd which outlines an augmented triad and ends on the same key that the sequence began on (B major, G minor, E-flat minor, and B major). Immediately following is a sequence of two modulations by descending minor 3rd which, therefore, outlines a diminished triad (E major, D-flat major, and B-flat minor).

Modulations between minor keys a major 3rd apart occur (G minor to E-flat minor, measure 10, also measure 277).

In summary, the main features found are:

A wide variety of intervalic relations between keys, some sequences of modulations, but more modulations to closely related keys than to foreign ones. In comparison to the writing of Mahler, Bruckner, and Wagner the predominance of modulations to closely related keys seems rather conservative, but the wide variety of modulations used does lend some interest to the movement.

CHAPTER IV

SYMPHONY NUMBER TWO - DE FIRE TEMPERAMENTER (The Four Temperaments)

I. THE SYMPHONY AS A WHOLE

Introductory Comments

The second symphony was written in the years 1901-1902.[1] The title suggests that the composition might be program music, but this proves to be true only in a limited sense. Unlike the tone poems of Lizst and Richard Strauss, where the programatic element may supersede the form in importance, The Four Temperaments is primarily a symphony in four movements and only secondarily program music. The programatic element definitely affects the character of the music in the types of themes, harmony, and key relationships used, but not the form.

The traditional order of inner movements has been inverted, the second movement being similar to a scherzo, and the third one being a slow movement. This inversion of the more usual order is, of course, not revolutionary,

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[1]Robert Simpson, Carl Nielsen Symphonist (London: J. M. Dent and Sons, Limited, 1952), p. 25.

and is fairly typical of Nielsen, being also found in the fourth and sixth symphonies.

Nielsen was inspired to write the second symphony as the result of an experience which he had had several years earlier. According to Robert Simpson, Carl Nielsen, when stopping overnight at an inn, saw a satirical picture on the wall. The picture was divided into four parts, each part depicting one of the four temperaments and labeled: "Den koleriske, Den flegmatiske, Den melankoliske and Den sangviske."[2] (The choleric, the phlegmatic, the melancholy, and the sanguine.) The composer was so impressed by the picture that he eventually conceived of writing a symphony in which each of the four movements would depict one of the four temperaments. The second symphony is the realization of this idea.

The instrumentation of the second symphony is identical to that of the first except for the addition of a third trumpet part and one for English horn. The third trumpet part is often independent of the other trumpet parts, thus indicating some expansion in the orchestration. The English horn, however, is used for a total of only six measures (in the third movement) and never simultaneously with either of the oboe parts. Its use is, therefore, very restricted and almost seems

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[2]Ibid., pp. 42-45.

hesitant, rather conservative writing for the era in which this symphony was written.

Because of the relative unfamiliarity of the first symphony it was necessary in the preceding chapter to go into considerable detail regarding the work's various technical features and the implications of the tabulations, occasionally even to digress somewhat by discussing the melodic characteristics and nonharmonic tones. Now that these necessary details have been presented, the comments regarding the second symphony and those that follow can be restricted more to differences such as the use of chords not found in the preceding symphony, changes in either the chord tabulation or those of root movement, and any expansion in the concept of tonality. More specifically, interest will center on any changes in the use of seventh, ninth, and eleventh chords and on any chords containing simultaneous cross-relation (split 3rds, 5ths, and/or 7ths). Any changes in the frequency with which the various types of root movement are used will be of interest, particularly any decreases in root movement by perfect 4th. Changes in the types of modulation will also be of interest but the implications of such changes will be difficult to evaluate because so many types were already cultivated by the beginning of the twentieth century and because the trends of modulation in the twentieth century are not clearly established.

Chords

Table XVI - Tabulation of Chords
Symphony Number Two - Totals from all Movements

Triads

Major	Minor	Augmented	Diminished
57.9% (713)	35.0% (431)	2.8% (34)	4.4% (54)

Seventh Chords

Major-minor 38.7% (241)	Major-major 4.8% (30)
Minor-minor 26.2% (163)	Minor-major .3% (2)
Minor-diminished .2% (1)	
Augmented-minor 0	Augmented-major 1.3% (8)
Diminished-minor 13.7% (85)	Diminished-diminished 14.8% (92)

Ninth Chords

Major-minor-minor 1	Major-minor-major 9
Major-major-minor 0	Major-major-major 1
Minor-minor-minor 2	Minor-minor-major 6
Minor-(no 7th)-minor 2	Minor-(no 7th)-major 1
Minor-major-minor 0	Minor-major-major 0
Diminished-minor-minor 1	Diminished-diminished-minor 2

Eleventh Chords

Major-minor-major-perfect 6

Major-minor-major-augmented 1

Major-major-major-perfect 2

Minor-minor-major-perfect 1

Table XVI - Continued

Thirteenth Chords

Major-major-major-perfect-minor 1

Augmented Sixth Chords

Italian 3 French 17 German 14

Minor German 4

Chords with Added Tones

Triads with split 3rds 2

	Number of Occurrences	Percentage All Chords
Total Number of Triads	1232	63.8%
Total Number of Seventh Chords	622	32.2%
Total Number of Ninth Chords	25	1.3%
Total Number of Eleventh Chords	10	.5%
Total Number of Thirteenth Chords	1	.1%
Total Number of Augmented Sixth Chords	38	2.0%
Total Number of Chords with Added Tones	2	.1%
Total Number of Chords	1930	

As compared with the first symphony there is a slight increase in the use of triads (from 59% to 63.8%) and a corresponding decrease in that of 7th chords (from 37.7% to 32.2%). This is just the opposite of what one would expect because it would seem to be moving in the direction of the past, especially toward the practices of the Baroque era, but it would be incorrect to read too much into this change. It will be remembered that in the

first symphony some very dissonant nonharmonic tones were found, especially ones involving simultaneous cross-relation. In the second symphony such nonharmonic tones are used very extensively, especially in the first movement. These often extremely dissonant nonharmonic tones more than compensate for the increase in triads and the over-all texture is if anything more advanced than that of the first symphony.

There is no significant increase in the use of ninth chords, eleventh chords, or chords with added tones; but the thirteenth chord, unlike in the first symphony, is found.

Triads. The augmented and diminished types retain approximately the same percentages as in the first symphony. There is an increase of major triads and decrease of minor ones. In fact, higher proportions of major triads are found than in any of the other five symphonies, but not by a very significant amount. The decrease of minor triads is less pronounced than the increase of major ones.

Seventh chords. There is a significant decrease in major-minor seventh chords (from 51.5% to 38.5%), a significant increase in minor-minor seventh chords (from 19.4% to 26.2%), and the emergence of a type not found in the first symphony, the augmented-minor. The slight numerical superiority of the diminished-diminished type over the

diminished-minor is peculiar to the second symphony, not being found in any of the other five. The decreased use of the major-minor type and the increased use of the minor-minor, diminished-minor, and diminished-diminished types begins a trend which continues in the symphonies that follow, a trend toward a more nearly equal use of the various types of seventh chords. The decreased use of the major-minor type has some definitely modern implications because of this chord's great, perhaps even excessive, prevalence in the nineteenth century.

Ninth chords. There are no significant changes nor are any new types found. Ninth chords constructed on diminished triads remain very rare, and those constructed on the augmented triad are not found.

Eleventh chords. There is only a slight increase in the use of eleventh chords but three types not found in the first symphony are used. All eleventh chords found are based on either the major or the minor type triad. It is typical of the composer at first to use ninth, eleventh, and thirteenth chords which are constructed on the most prevalent triad types--the major or the minor. After these chords have become well established in his practice, he then begins to use the less conventional sonorities, as will be seen in the later symphonies.

Thirteenth chords. Although only one example has

been found, its use indicates a slight degree of progress because none were used in the first symphony.

Augmented sixth chords. There is no significant increase in the use of this type of chord. The more nearly equal use of the German and French types begins a trend of this, a trend which continues in the symphonies that follow. The minor German sixth chord is another new development of this symphony, new in the sense that it was not found in the first symphony. The sonority is, of course, identical to that of the minor-minor seventh chord and is, therefore, not unique; but the function is clearly that of an augmented sixth chord, the augmented 6th resolving by contrary motion to an octave. Because of this new function, the new application must be considered to be a progressive factor and modern in implications.

Triads with split 3rds. The use of triads with split 3rds as essential harmony is quite unusual for the year 1902. Not only is it unusual, it anticipates the practices of a later time and is, therefore, very progressive. Once again, the application as essential harmony was preceded by use of the same sonority in the first symphony, but used as a nonharmonic tone--another example of the natural evolution of harmony found in Nielsen's symphonies.

Root Movement

Table XVII - Tabulation of Root Movement
Symphony Number Two - All Movements

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	271	16.5%
By descending 2nd	202	12.3%
By ascending 3rd	145	8.8%
By descending 3rd	242	14.7%
By ascending perfect 4th	430	26.1%
By descending perfect 4th	301	18.3%
By ascending or descending tritone	56	3.4%
Total Number of Root Movements	1647	

Tabulation of Change of Sonority	
Change of Mode	85
Change of 5th	22
Change of 3rd and 5th	23

The changes in the use of root movement found from each of Nielsen's symphonies to the one following it are less consistent than the changes in the use of chords. That is, there are more exceptions to the general trends. However, there are a few general trends which can be stated as follows:

1. Root movement by perfect 4th tends to be used progressively less from the second symphony through the sixth. (The third and fifth symphonies are exceptional, being exceeded only by the first in high content of this type of root movement.)

2. Root movement by 3rd is generally quite stable (changing very little from symphony to symphony), although there is a slight tendency toward increased use in the later symphonies.
3. Root movement by 2nd shows a trend of increased use through the fourth symphony and then a steady decrease from the fifth through sixth symphonies.
4. Root movement by tritone is consistently quite rare, varying little in frequency of use in the first five symphonies, but is notably more prevalent in the sixth symphony than in any of the others.

Because of the somewhat inconsistent tendencies of root movement found in the six symphonies, attention will focus primarily on the implications of changes in terms of the practices of the past (most especially the Baroque era) and of the twentieth century.

Root Movement by Perfect 4th. There is considerable reduction in the use of both types (ascending and descending), and the implications of the change are toward modernness. The proportion between the two types is quite close to that found in the first symphony. The predominance of root movement by ascending perfect 4th is a conservative factor because it is the type most apt to produce normal chord progression (normal from the traditional standpoint).

Root Movement by 3rd. There is a slight increase in the use of both types, and that by descending 3rd is more prevalent than that by ascending 3rd. The predominance of root movement by descending 3rd is a rather traditional practice and, therefore, conservative in its

implication.

Root Movement by 2nd. Unlike in the first symphony, root movement by ascending 2nd prevails over that by descending 2nd, a change of the conservative type. Also conservative in implication is the more extensive use of root movement by ascending 2nd than that by descending 3rd, a common practice of Bach.

General Implications of the Tabulation. In each main type of root movement (by 2nd, by 3rd, and by perfect 4th) the type most apt to produce normal chord progressions prevails, namely by ascending 2nd, descending 3rd, ascending perfect 4th. Because of this there is nothing particularly distinctive about the root movement other than that the various types are used more nearly equally than was the case in the first symphony.

In view of the conservative trend found in these tabulations one might expect a tonal organization more similar to that of Bach (or other Baroque composers) than was the case in the first symphony. That is, a more extensive use of normal chord progressions (according to McHose's theory of the four classes of chords) might be expected. This is true to some extent. There is generally less ambiguity of tonality than in the first symphony. The chord progressions tend to establish the key more firmly, and many of the peculiar modal-sounding progressions

found in the earlier symphony have disappeared. It would, however, be very incorrect to assume that the music would tend to sound like that of Bach on a basis of the similarities in the use of root movement alone. The use of chromaticism, simultaneous cross-relation, chords not used by Bach, as well as the types of modulations found all mark the second symphony unmistakably as a product of the late nineteenth or early twentieth century.

Changes of Sonority

Since the total number of root movements found in the second symphony (1647) is nearly identical to that found in the first (1646), the statistics concerning changes of sonority may be directly compared. Both change of mode and change of 3rd and 5th (simultaneously) show considerable decrease, and change of 5th remains unchanged in frequency of use.

These marked decreases in the use of changes of sonority indicate a step in the direction of clearer modality. Although borrowed chords might still create some ambiguity of mode, direct oscillations between modes are used considerably less often.

The rather extensive use of nonharmonic tones may also account for these decreases in change of sonority, for it is quite characteristic of this composer to exploit one technique at a time and avoid excessive use of

other elements that might tend to be distracting.

II. THE FIRST MOVEMENT

Introductory Comments

The first movement depicts the choleric temperament and is in sonata form with the two subjects in closely related keys (B minor and G major with Mixolydian 7th). As in the first symphony, these two subjects each contain several themes, and in the exposition there is a transitional theme which acts as a link between the two subjects.

The development section contains a highly chromatic fugato in five part writing. Prominent in this fugato is the use of the diminished 3rd as a melodic interval. An ascending diminished 3rd is followed by a descending minor 2nd, or a descending diminished 3rd by an ascending minor 2nd. Thus, there is a pattern of a lower neighboring tone followed by an upper neighboring tone, and then resolution on the central tone. When used in conjunction with a conventional augmented sixth chord (Italian, French, or German type) the function is as melodic movement between two essential chord tones (the root and the augmented 6th or vice versa) followed by the normal resolution tone. At other times the device results in new types of chords, more specifically, the minor German sixth chord, and the minor triad with diminished 7th. Although the sonorities of neither of these is new (the minor

German sixth chord sounds identical to a minor-minor seventh chord, and the minor triad with diminished 7th sounds identical to both a minor triad with added major 6th and to a diminished-minor seventh chord in first inversion) the function is different (just as augmented sixth chords have a function different from that of seventh chords of identical sonority) these have, therefore, been included as new types of chords in the tabulations.

Example 8 (measures 150-155) shows the beginning of the fugato. The characteristic patterns of ascending diminished 3rds resolving by descending 2nd, and descending diminished 3rds resolving by ascending minor 2nd are quite apparent.

Example 9 (measure 170) shows the characteristic

diminished 3rd in a situation causing a G minor triad with augmented 6th, this being found on the second half of the second beat in the first measure. Although the chord resolves to a D major triad rather than an F-sharp major triad, the augmented 6th is resolved outwards to a perfect octave. For this reason, the chord has been classified as a minor German 6th chord.

Example 10 (measures 179-180) contains a situation similar to that of Example 9, except that the chord sonority is that of a minor triad with a diminished 7th which is found on the first beat of the first measure in the example. If the note F natural in the lowest part had been used there would be no question of this being a G minor-minor seventh chord in root position, the 7th being prepared by appoggiatura figure from the 5th of the chord. Therefore, it seems reasonable to consider the example, as written with F-flat, to be a G-minor triad with diminished 7th. The chord has, therefore, been so classified.

The fugato is an example of a more highly chromatic type of writing than was found in the first symphony and is typical of not only the second symphony but those that follow as well. (Chromatic fugatos are found in all of the symphonies which follow.)

As was the case in the first symphony, the themes as presented in the recapitulation may differ considerably from their original statements in the exposition. The changes may be in the form of new thematic developments, or of changes in the keys used, or both of these.

The use of the Mixolydian 7th, both harmonically and melodically, is continued in the second symphony and is especially noticeable in the second subject of the first movement.

Nonharmonic tones are quite prevalent in the first movement. In addition to the traditional 9-8, 7-6, and 4-3 type suspensions, several others (resulting from seventh chords) are found. Among these are the 6-5, and the 5-4 suspensions. The 6-5 suspension is found in conjunction with a seventh chord in root position with the 6th resolving away from the 7th of the chord. The 5-4 suspension occurs when a seventh chord is in second inversion, the 5th resolving away from the 3rd of the chord to the root and, therefore, similar to the traditional 9-8 suspension. All of these suspensions were probably used by many other composers of the nineteenth century

but are of some interest because they are not generally described in theory textbooks.

In Example 11, the G-sharp of the upper line is consonant in the first measure but dissonant in the second measure, forming a 6-5 suspension against the B major-minor seventh chord.

Example 12 is similar to Example 11 except that the suspension is of the 5-4 type, the tone D sounding against a C minor-minor seventh chord in second inversion and then resolving to the tone C.

An interesting and typical suspension (typical of the composer) is that of a major 7th resolving to minor 7th. When the major 7th is accompanied by a tone a minor 2nd above (the root of the chord) there is a

definite sensation of resolution, because the major 7th is acoustically more dissonant than the minor 7th, and there is, therefore, considerable justification in classifying the 7-7 suspension (or 5-5 suspension when the chord is in first inversion) as a real suspension.

Ex. 13

Example 13 points out that the tone G is prepared in the first measure, suspended against the tone A-flat a minor 2nd above on the first beat of the second measure and gives considerable sense of resolution when resolving to G-flat on the second beat.

Retardations are also found, occasionally, in conjunction with suspensions (examples of 4-3 suspensions with 6-7 retardations have been found).[3]

Anticipations have been found in which the anticipated tone sounds as a 7th of a chord.[4] As is characteristic of the first symphony, the 7th is approached by an appoggiatura figure from the 5th of the chord. In such cases the fact that the 7th functions as an anticipation

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[3]Carl Nielsen, Symphony Number Two, First Movement, Measure 54.

[4]Ibid., Measure 71.

makes its use primarily nonharmonic in function and for this reason the resulting seventh chord has not been counted as an essential chord.

Simultaneous cross-relation resulting from passing tones is found, as was the case in the first symphony. One interesting example of this is presented below.

Ex. 19

It will be noted that the French sixth chord on the third beat is prepared by step in every part except for the leap up a 4th from B-flat to E-flat (the E-flat is also approached stepwise from above in the viola part) and is therefore very conventional in part writing, very typical of the composer's use of this chord.

The point of special interest is the simultaneous cross-relation occurring on the last part of the third beat in the first measure between B-flat (in the uppermost part) and B-double-flat (in the lowest part). This augmented octave resolves in a manner analogous to that of the augmented 6th, that is, outwards by minor 2nds. Although the augmented octave is nonharmonic in function,

being the result of an unaccented passing tone in the upper part, it may be considered as an antecedent of the simultaneous cross-relation used as essential harmony that is found in the fifth and sixth symphonies.

Chords

Table XVIII - Tabulation of Chords
Symphony Number Two - First Movement

Triads			
Major 57.5% (234)	Minor 35.6% (145)	Augmented 2.2% (9)	Diminished 4.7% (19)
Seventh Chords			
Major-minor 45.2% (109)		Major-major 4.1% (10)	
Minor-minor 21.1% (51)		Minor-major .4% (1)	
Minor-diminished .4% (1)			
Augmented-minor 0		Augmented-major 0	
Diminished-minor 16.6% (40)		Diminished-diminished 12.0% (29)	
Ninth Chords			
Major-minor-minor 1		Major-minor-major 2	
Major-major-minor 0		Major-major-major 0	
Minor-minor-minor 0		Minor-minor-major 0	
Minor-major-minor 0		Minor-major-major 0	
Diminished-minor-minor 0		Diminished-diminished-minor 0	

Table XVIII - Continued

Eleventh Chords			
Major-minor-major-perfect 2	Major-minor-major-augmented 0		
Major-major-major-perfect 2	Minor-minor-major-perfect 0		
Thirteenth Chords			
Major-major-major-perfect-minor 1			
Augmented Sixth Chords			
Italian 1	French 10	German 9	Minor German 1
Chords with Added Tones: 0			

	Number of Occurrences	Percentage All Chords
Total Number of Triads	407	60.1%
Total Number of Seventh Chords	241	35.6%
Total Number of Ninth Chords	3	.4%
Total Number of Eleventh Chords	4	.6%
Total Number of Thirteenth Chords	1	.1%
Total Number of Augmented Sixth Chords	21	3.1%
Total Number of Chords with Added Tones	0	
Total Number of Chords	677	

Triads. Although the first movement contains the smallest percentage of triads of all movements in the second symphony, the figure is quite close to the overall average for this type of chord that is found in the first symphony. The statistics for the individual types (major, minor, augmented, and diminished) do not vary significantly

from the averages (for each) of the second symphony as a whole.

Seventh Chords. Although seventh chords are used more extensively in this movement than in any other movement of the second symphony, the total use in this movement is less than that found in any movement of the first symphony other than the finale. Similarly, although the major-minor type seventh chord is more prevalent than in any other movement of the second symphony, the total use is below the average found in the first symphony.

The diminished-minor type seventh chord is used more than in any other movement of this symphony and significantly more than the diminished-diminished. The predominance of the diminished-minor type over the diminished-diminished type is not characteristic of this symphony but anticipates a trend found in the four symphonies that follow.

Ninth Chords. Not only are ninth chords rarer than usual for this symphony, only two types are found, and both are based on the major triad (the major-minor-minor, and the major-minor-major)--very conservative writing.

Eleventh Chords. Eleventh chords are peculiar to the first and second movements of this symphony. Although the first movement contains considerably fewer eleventh

chords than the movement following. It does contain more than were found in any movement of the first symphony.

Thirteenth Chords. The only example found in the second symphony occurs in this movement and represents an expansion in the concept of harmony, growth in a modern direction.

Augmented Sixth Chords. These are used nearly twice as frequently as usual for this symphony, but are nevertheless still quite rare. As is typical of this symphony, the French and German types are used nearly equally.

General Observations. The first movement of the first symphony contains the largest percentage of seventh chords of all movements in this work, but the first movement of the second symphony contains the lowest percentage found in that symphony. A high content of seventh chords is in general typical of the first movements found in Nielsen's other symphonies, and this marks the first movement of the second symphony as exceptional. The apparent cause is a decided preference for nonharmonic tones as a means of achieving dissonance.

Root Movement

Table XIX - Tabulation of Root Movement
Symphony Number Two - First Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	102	16.0%
By descending 2nd	81	12.7%
By ascending 3rd	56	8.8%
By descending 3rd	101	15.8%
By ascending perfect 4th	167	26.1%
By descending perfect 4th	116	18.2%
By ascending or descending tritone	16	2.5%
Total Number of Root Movements	639	

Tabulation of Change of Sonority

Change of Mode	18
Change of 5th	2
Change of 3rd and 5th	6

Each type of root movement is very close in its percentage of use to the average for that type of root movement found in the symphony as a whole, and there is no change in the order of the various types. That is, root movement by ascending perfect 4th remains the most prevalent type, followed by that by descending perfect 4th, ascending 2nd, descending 3rd, descending 2nd, ascending 3rd, and by tritone.

Keys

Table XX - Tabulation of Keys
Symphony Number Two - First Movement

Measure	Key	Comments	Part of Form
1-2	b	Subject Ia	Exposition
3-5	E		
6-9	A		
10-17	G		
18-19	D-flat		
20	F-sharp		
21-28	B		
29-35	b		
36-40	f-sharp		
41	C-sharp	Mixolydian seventh	Transitional theme
42-43	F-sharp		
44-45	C-sharp		
45-47	F-sharp		
48	c-sharp		
49-50	A-flat		
51-52	c		
53-56	g	No tonic chord	
57-62	(D)	Dominant of g and G	Subject Ib
63-64	G		
65-72	G		Subject II
73	e	Descending sequence, each key established by authentic cadence	
74	d		
75	c		
76	b-flat		
77	a-flat		
78	F-sharp		
79-80	E-flat		
81-83	A		
84	F-sharp		
85-91	G	Mixolydian 7th	
92-93	A-flat		
94	a-flat		
95-96	b-flat	No tonic chord, enharmonic modulation on French sixth chord	
97-99	E	Deceptive cadence, no tonic	
100-102	g		
103-116	G		End of Exposition
117-127		Uncertain chromatic	Development
128-134	E-flat		
135-136	B		
137	F-sharp		

Table XX - Continued

Measure	Key	Comments	Part of Form
138-142	F-sharp		Subject II
143-146	A		Transitional theme
148-150	C		Fugato
151-152	Uncertain		
153-155	c		
156-157	D-flat		
158-159	a-flat		
160-163	B		
164-167	b		
168-169	G		
170-171	g		
172-174	e-flat		
175	E-flat		
176	g		
177-178	G-flat		
179	g		
179	e-flat		
180-181	B-flat		
182-183	c		
184-189	e-flat		
190-191	D-flat		
192-193	c		
194-195	g		
196-197	G		
198-201	e		
202-203	e-flat		
204-205	f-sharp		
206-207	a		
208-209	Uncertain		
210-211	f		
212-214	a-flat		
215	e-flat		
216-223	c		
224-225	c		Subject II
226-227	e-flat		
228	E-flat		
228-230	e-flat		
230-231	B		
232-235	F-sharp		
235-236	d		
236-240	b		
240	b		Link
241-244	D		

Table XX - Continued

Measure	Key	Comments	Part of Form
245-254	Not clear, chromatic sequence		
255-258	b		Recapitulation Subject Ia
259-260	E		
261-268	G		
269	c	Different from exposition	
270	g		
271	d		
273-275	c		
276-283	B		
284-288	b		
289-292	A	V and vii° only	
293-296	E-flat		
296-298	C		
299-300	f		
301-302	g		
303	A-flat		
304-305	e-flat		
306-309	G	(anticipation of Subject II)	
310-314	b		
315-318	E		
319-320	E-flat		
321-322	D		
323-324	D-flat		
325-326	c		
327-329	d		
330	a		
331	c		
332	b-flat		
333	f		
334	C		
335	e		
336-337	b		
338-339	D		
340-345	F-sharp		
346-354	E		
355	e		
356-357	C-sharp		
358	G		
359-360	e		
361-365	b		
366	F		
367	a		
368-369	E-flat		

Table XX - Continued

Measure	Key	Comments	Part of Form
370-386	b		Recapitulation
387	Uncertain, 3rd relation		
388-389	e	No tonic chord	
390-403	B		Subject I
404-405	G		
406-407	g		
408-409	E-flat		
410-411	C		
412-413	c		
414-415	b		
416-417	G	Development of Ia	
418-421	E-flat		
422-425	e		
426-427	G		
428-439	b		
440	F		
441-445	b		End of Movement

The tonal organization of the second symphony differs considerably from that of the first. Where the first symphony began with ambiguity and uncertainty of key, the second begins rather clearly in B minor, and although modulations are abundant, there is considerably less uncertainty of tonality. Also to be noted is that the second part of the first subject (Ib) is in D major, the relative major of B minor. This tends to unify the overall tonal structure of the first subject by being in such a closely related key. This use of the relative major for the second part of the first subject would have to be regarded as conservative in comparison to the practices of other

composers of the period, but can be justified as musically necessary because of the extremely large number of modulations. These modulations would tend to obscure B minor as the central tonality, and therefore the use of the relative major strengthens the main key of the subject.

The use of G major (with Mixolydian 7th) for the second subject is another very conservative choice since this key is very closely related to both the B minor and D major of the first subject. The reason for this selection is possibly the same as that for the preceding use of D major, namely, to have the main keys closely related, in contrast to the many distant keys used that might otherwise completely upset the tonal balance (that is, obscure the main tonal centers of the movement). The three closely related main keys act, then, as a center of tonality to which the many distant keys return.

Examination of the overall tonal scheme discloses another interesting fact:

> In the recapitulation, the first subject is in B minor, its original key, and the second subject is in B major, the parallel major.

Were it not for the many modulations, there would be danger of the recapitulation becoming overbalanced with B as a tonal center. This use, in view of the many modulations and some new developments found in the recapitulation, helps to confirm B as the main key and the close of the movement in B minor is thereby strengthened. Were it not

for this strengthening of B as a tonal center, the ending (which contains elements of F major and G major from the seventh measure from the end through the fourth measure from the end) might not sound convincing.

In examining the many keys used (or at least implied) a great diversity of types of modulation is found. Modulations to keys a perfect fourth away are numerous as in the preceding symphony. These are found in several different relationships:

1. From a major key to a major key (E to A).
2. From a minor key to a minor key (c to g).
3. From a minor key to a major key (b to E).
4. From a major key to a minor key (C to f).

However, the modulations to a key of like mode are the most common.

Modulations from a major key to its relative minor or vice versa are also quite common.

The following types of modulation between major keys have been found: (1) up a minor 2nd, (2) down a minor 2nd, (3) down a major 2nd, (4) up a minor 3rd, (5) down a minor 3rd, (6) up a major 3rd, (7) down a major 3rd, (8) up a perfect 4th, (9) down a perfect 4th, and (10) up (or down) an augmented 4th. The only type not found is up a major 2nd.

The following modulations from a major key to a minor one are found: (1) up a minor 2nd, (2) down a minor 2nd, (3) up a major 2nd, (4) up a minor 3rd, (5) down a minor 3rd, (6) up a major 3rd, (7) down a major 3rd, (8) up a perfect 4th, (9) down a perfect 4th, and (10) up (or down) an augmented

4th. The only type not found is: (1) down a major 2nd.

The following modulations have been found between minor keys: (1) down a minor 2nd, (2) up a major 2nd, (3) down a major 2nd, (4) up a minor 3rd, (5) down a minor 3rd, (6) down a major 3rd, and (7) down a perfect 4th. Types not found are: (1) up a minor 2nd, (2) up a major 3rd, (3) up a perfect 4th, (4) up (or down) an augmented 4th.

Examples of modulations from a minor key to a major key have been found at every interval (both ascending and descending).

General Observations. The number of types of modulations between major keys has been expanded to include nearly every possible interval. (The lack of modulations between major keys a major 2nd apart is not significant and is undoubtedly only incidental since it was found in the first symphony and was used as early as the Baroque era.)

There is a similar increase in the number of types of modulations from major keys to minor ones. It is quite understandable that no modulations have been found to minor keys on the lowered 7th scale degree (of the original major key), since this is extremely foreign and involves a new tonic scale degree which is not found (as an unaltered tone) in the original key.

The number of types of modulations found between minor keys is somewhat more restricted than those between major keys. The lack of modulations by ascending perfect 4th is undoubtedly only incidental, but the absence of those by augmented 4th, by descending minor 2nd, and by ascending major 3rd indicate somewhat less growth and is conservative for the era in which this symphony was written.

The main features of the tonal scheme are the close tonal relationship between the keys of the two subjects of the movement, which gives tonal stability, and the very large number of modulations (especially to very distant keys), which gives variety to the movement and is typical of many other compositions of this era.

III. THE SECOND MOVEMENT

Introductory Comments

The second movement serves as a scherzo in this symphony and is in contrast to the slow third movement which follows. Actually it is more like a waltz than a scherzo in character, but the form differs from either of these. There are suggestions of a development section (as found in sonata form) but basically the form is episodical. One theme (or musical idea) is presented, followed by a second contrasting one after which the first theme returns; and, finally, the movement ends with a coda

which is based on material from the second theme.

The movement is typical of the composer both in its form (none of the six symphonies contains a true scherzo), and in its light, scherzo-like character.

This movement portrays the phlegmatic temperament. The inclusion of some thematic development is also characteristic of the composer, the tempo marking in the score being "Allegro comodo e flematico." However, this programatic element does not cause the movement to differ from other movements of this type (substitute for a scherzo) found in this composer's other symphonies--further evidence that the programatic element is not allowed to usurp the form.

Chords

Table XXI - Tabulation of Chords
Symphony Number Two - Second Movement

Triads			
Major $\frac{56}{96}$ 56.1%	Minor $\frac{36}{62}$ 36.3%	Augmented $\frac{2}{4}$ 2.3%	Diminished $\frac{5}{9}$ 5.3%
Seventh Chords			
Major-minor $\frac{26}{21}$ 26.9%		Major-major $\frac{3}{3}$ 3.8%	
Minor-minor $\frac{25}{20}$ 25.6%		Minor-major 0	
Augmented-minor 0		Augmented-major $\frac{7}{6}$ 7.7%	
Diminished-minor $\frac{12}{10}$ 12.8%		Diminished-diminished $\frac{23}{18}$ 23.1%	

Table XXI - Continued

Ninth Chords

Major-minor-minor 0	Major-minor-major 0
Major-major-minor 0	Major-major-major 0
Minor-minor-minor 1	Minor-minor-major 3
Minor-(no 7th)-minor 0	Minor-(no 7th)-major 0
Minor-major-minor 0	Minor-major-major 0
Diminished-minor-minor 0	Diminished-diminished-minor 0

Eleventh Chords

Major-minor-major-perfect 4	Major-minor-major-augmented 1
Major-major-major-perfect 0	Minor-minor-major-perfect 1

Thirteenth Chords

Major-major-major-perfect-minor 0

Augmented Sixth Chords

Italian 1 French 0 German 0 Minor German 0

Chords with Added Tones: 0

	Number of Occurrences	Percentage All Chords
Total Number of Triads	171	65.8%
Total Number of Seventh Chords	78	30.0%
Total Number of Ninth Chords	4	1.5%
Total Number of Eleventh Chords	6	2.3%
Total Number of Thirteenth Chords	0	
Total Number of Augmented Sixth Chords	1	.4%
Total Number of Chords with Added Tones	0	
Total Number of Chords	160	

Triads outnumber seventh chords by a ratio of more than two to one, but this ratio is quite close to the norm of this symphony. Eleventh chords outnumber ninth chords and augmented sixth chords are practically nonexistent. Although the predominance of eleventh chords over ninth chords is unusual, it is of very little significance because of the extreme rareness of both of these chords.

The most important peculiarities are found in the tabulation of seventh chords. Although the total number of seventh chords found is not unusual, there are some significant changes in the frequencies with which individual types are used. The major-minor seventh chord is considerably less prevalent than usual and barely exceeds the total number of minor-minor type seventh chords. This de-emphasis of the major-minor seventh chord (to the extent found in this movement) is more typical of the composer's later works, a change having modern implications, since this chord was used very extensively in the nineteenth century.

Another peculiarity is the unusually extensive use of the diminished-diminished type seventh chord, outnumbering the diminished-minor type by nearly two to one. This is contrary to the trend of the composer--a trend of progressively less use of this chord. The implications are conservative since the diminished-diminished seventh chord was used quite extensively in the nineteenth century by

composers such as Lizst.

The chord texture of the movement is in general quite simple, containing a large number of triads and a considerable number of seventh chords, but very few other types of chords.

It is interesting that the only ninth chords found contain minor 9ths, major 9ths being more usual in this symphony; but in view of the rareness of ninth chords in this movement, this has very little significance. Nevertheless, the implications are modern because of the greater dissonance of the minor 9th than the major 9th.

Of considerable interest is the nearly complete absence of augmented sixth chords, so rare that they are outnumbered by both ninth chords and by eleventh chords. Augmented sixth chords are, of course, altered chords and the low total is therefore consistent with the simplicity of the harmony found in this movement and is in contrast to the preceding movement.

This movement resembles the third movement of the first symphony by containing a higher proportion of triads than other movements in the corresponding symphonies. This begins a trend whereby the movement in each symphony which functions as a scherzo generally has a rather high percentage of triads, if not the highest in that symphony.

Root Movement

Table XXIII - Tabulation of Root Movement
Symphony Number Two - Second Movement

Type of Root Movement	Total	Per Cent
By ascending 2nd	34	18.5%
By descending 2nd	28	15.2%
By ascending 3rd	18	9.8%
By descending 3rd	16	8.7%
By ascending perfect 4th	40	21.7%
By descending perfect 4th	38	20.7%
By ascending or descending augmented 4th	10	5.4%
Total Number of Root Movements	184	
Changes of Sonority		
Change of Mode	13	
Change of 5th	10	
Change of 3rd and 5th	4	

Root movement by ascending perfect 4th is less prevalent than in any other movement of this symphony, and that by descending perfect 4th is more prevalent than in any other movement. Consequently, these two types of root movement are nearly identical in their frequencies of use.

There is some increase in the use of both types of root movement by 2nd (ascending and descending), but root movement by ascending 2nd remains more prevalent than that by descending 2nd. Because of the decreased use of root movement by perfect 4th, root movement by 2nd becomes especially prominent.

This is the only movement found in any of the six symphonies where root movement by ascending 3rd outnumbers that by descending 3rd, although the margin of numerical superiority is very slight. Since root movement by ascending 3rd is less apt to produce normal chord progressions than that by descending 3rd, these chord progressions would tend to stand out as something unusual in this movement.

The overall tendency toward more nearly equal use of all types of root movement except that by tritone (which remains rare) is more typical of the later symphonies than the second, and this change is therefore an anticipation of a later trend.

The several unusual features found in the tabulation, especially the predominance of root movement by ascending 3rd over that by descending 3rd, are in contrast to the other movements of this symphony and compensate for the rather simple chord texture.

Changes of Sonority. Change of 5th is more than twice as prevalent as change of 3rd and 5th - the exact opposite of the trend found in this symphony. Although this is probably less noticeable to the listener than other features of the movement, it is a peculiarity of the second movement and indicates another element of variety that helps to compensate for the generally rather simple chord texture.

Keys

Table XXIV - Tabulation of Keys
Symphony Number Two - Second Movement

Measures	Key	Comments	Part of Form
1-6	G		Theme A
7-10	A-flat		
11-14	G		
15-18	a-flat		Theme B
18-20	C		
21-23	c		
24-30	C		
31-34	C		
34-37	C		Theme A
38-42	b		Theme B
43-44	f-sharp		
45	E		
46	A-flat		
47-52	A-flat		Theme C
53-54	f		
55	E-flat		
56-58	Uncertain		
59-60	B		
61-63	C	Half cadence on dominant	
64-69	G		Fugato on theme C
70-71	b		Theme C
72-73	d		
74-75	g		
75-76	Uncertain	Series of minor triads	
77	E-flat		
78	Uncertain		
79-88	E-flat	Sequence of 21 descending diatonic triads in first inversion	
89	E-flat		Themes A and C
90-92	E-flat	Part A in B-flat but harmonized in E-flat	Part A and B
93	a-flat		Theme A and B
94	b		
95	a		
96	D		
97-100	D		
101-104	e-flat		Theme B
105-108	c	Two tonic chord	

Table XXIV - Continued

Measures	Key	Comments	Part of Form
109-115	G		
116-119	G		Theme A
120-124	G		Theme B
125-139	G		Coda based on Theme C

The relative simplicity of this movement is in contrast to the generally complex first movement. Although the second movement is much simpler than the preceding one, there are a number of modulations to remote keys.

There is some use of third relation, both between two major keys (E to A-flat, measure 46), between two minor keys (a-flat and b, measure 94), and between a minor and a major key (a-flat and C, measure 18).

There are also modulations between majors keys a minor 2nd apart, both upwards (G to A-flat, measure 7) and downwards (A-flat to G, measure 11) as well as modulations from major keys to minor keys a minor 2nd apart, both upwards,(G to a-flat, measure 15) and downwards, (C to b, measure 38).

In contrast to these modulations involving rather remote keys, there are no examples of modulations between major keys either a major 2nd or a minor 2nd apart, and there is only one modulation between two minor keys a 2nd apart (b to a, measure 95).

Modulations to keys of like mode that are a perfect 4th distant are found (G to C, measure 125; and b to f-sharp, measure 43), as well as modulation to a key of opposite mode and a perfect 4th away (E-flat to a-flat, measure 93; and a to D, measure 96).

The prevalence of modulations by ascending 3rd parallels somewhat the similar prevalence of root movement by this same interval and direction. Although 3rd relation was most certainly no novelty when this symphony was written, having been used extensively by Wagner and others, and therefore has no particularly modern implications, it does contribute variety to the movement and supplies some contrasts to the preceding movement.

IV. THE THIRD MOVEMENT

Introductory Comments

The third movement (Andante malincolico) is a slow movement and therefore corresponds to the second movement of the first symphony. The form of these movements is quite similar. They are both in episodic form and both end with a coda, a plan which can be symbolized as follows: A B A Coda. Another similarity of the two movements is the use of parallel keys in the contrasting section (part B in the form). The second movement of the preceding symphony employed G major for the first section, and G minor for the contrasting one; and the third movement of the second symphony employs E-flat

minor and E-flat major for the corresponding sections.

One very noticeable difference between the two movements is the definitely heavier, more serious, even grave character of the third movement of the second symphony. This is undoubtedly the result of the programatic element found in this work, for this movement portrays the melancholy temperament.

Directing the attention now entirely to the second symphony, a definite similarity between the opening themes of the second and third movement can be seen. The two themes are presented in examples 15 and 16.

Both themes begin with a pickup and both begin with an ascending minor 3rd in the melodic line. This in itself might be considered merely incidental, but both themes then return to their first tone and repeat the interval of the minor 3rd. Consequently, the first four tones of both themes are identical in melodic interval. This similarity is great enough to constitute a cyclical element. Because the themes are not identical it would be misleading to call this a

cyclical use of a theme, but it can be considered to be a cyclical use of a melodic fragment.

The function of this cyclical element seems to be merely to emphasize the difference between the characters of the phlegmatic and the melancholy temperaments. The use of similar themes would tend to emphasize the totally different harmonic settings employed.

Although the cyclical use of themes (or fragments thereof) was certainly not new at the time the second symphony was written, this is an element not found in the first symphony and therefore constitutes a slight change in technique. This may also be considered to be the antecedent (for this composer) of the extensive use of a cyclical theme in the fourth symphony. It is also a step in the direction of closer thematic interrelationship between movements, and this leads to the condensing of the traditional four movements into two large ones that are found in the fifth symphony.

Chords

Table XXV - Tabulation of Chords
Symphony Number Two - Third Movement

Triads							
Major	48.2% 150	Minor	43.4% 135	Augmented	4.2% 13	Diminished	4.2% 13

Table XXV - Continued

Seventh Chords

Major-minor	33.7% 55	Major-major	3.1% 5
Minor-minor	28.8% 47	Minor-major	.6% 1
Augmented-minor	0	Augmented-major	0
Diminished-minor	12.9% 21	Diminished-diminished	20.9% 34

Ninth Chords

Major-minor-minor 0	Major-minor-major 6
Major-major-minor 0	Major-major-major 0
Minor-minor-minor 0	Minor-minor-major 1
Minor-(no 7th)-minor 2	Minor-(no 7th)-major 0
Minor-major-minor 0	Minor-major-major 0
Diminished-minor-minor 0	Diminished-diminished-minor 0

Eleventh Chords

Major-minor-major-perfect 0	Major-minor-major-augmented 0
Major-major-major-perfect 0	
Minor-minor-major-perfect 0	

Thirteenth Chords

Major-major-major-perfect-minor 0

Augmented Sixth Chords

Italian 0	French 5	German 4	Minor German 1

Table XXV - Continued

Chords with Added Tones: Split Thirds 2

	Number of Occurrences	Percentage All Chords
Total Number of Triads	311	62.8%
Total Number of Seventh Chords	163	32.9%
Total Number of Ninth Chords	9	1.8%
Total Number of Eleventh Chords	0	
Total Number of Thirteenth Chords	0	
Total Number of Augmented Sixth Chords	10	2.0%
Total Number of Chords with Added Tones	2	.4%
Total Number of Chords	495	

The tabulation figures for the main types of chords (triads, seventh chords, etc.) vary less than one percent from those of the symphony as a whole, but there are some deviations in the case of specific types of chords; and chords with split 3rds now appear as essential harmony, chords not found in the first symphony.

The slightly higher proportion of minor, augmented, and diminished triads, and the lower proportion of major ones is probably the result of the predominance of the minor mode found in this movement. Considering the amount of minor mode used, it is surprising that the major triad is as prevalent as it is.

Seventh chords continue in the trend toward more nearly equal use of all of the individual types. The major-

major and the minor-major types remain rare in this movement and are exceptions to the trend.

The major-minor-major (or dominant type) ninth chord is the most prevalent ninth chord found. This is quite normal but is in considerable contrast to the preceding movement where the only ninth chords found contained minor 9ths.

The total absence of eleventh chords is in contrast to the preceding movement but not especially significant in itself because of the overall rareness of that chord in this symphony.

General Observations. The rather even distribution in the numbers of seventh chords used is modern in implications, but the most significantly modern feature found in the tabulation is the use of chords with split (or mixed) 3rds - chords which are more typical of a considerably later time than that when this symphony was written.

Root Movement

Table XXVI - Tabulation of Root Movement
Symphony Number Two - Third Movement

Type of Root Movement	Total	Per Cent
By ascending 2nd	59	14.6%
By descending 2nd	48	11.9%
By ascending 3rd	42	10.4%
By descending 3rd	61	15.1%
By ascending perfect 4th	91	22.5%
By descending perfect 4th	82	20.2%
By ascending or descending tritone	22	5.4%
Total Number of Root Movements	405	

Table XXVI - Continued

	Changes of Sonority
Change of Mode	31
Change of 5th	5
Change of 3rd and 5th	8

Root movement by perfect 4th. The tabulation resembles that of the preceding movement, the two types being closer in their total use than is normal for this symphony.

Root movement by 3rd. There is an increased use of both types, and that by descending 3rd is more prevalent than either type of root movement by 2nd. The proportion between root movement by ascending 3rd and that by descending 3rd is quite normal.

Root movement by 2nd. Both types show some decrease, but the proportion between the two types is normal, that by ascending 2nd being the more prevalent type.

Root movement by tritone. This type of root movement is considerably more prevalent than usual but remains the rarest type by a considerable margin. The total is nearly identical in per cent to that found in the preceding movement.

General Observations. The extensive use of root movement by descending 3rd found in this movement is less radical than that of root movement by ascending 3rd found in the preceding movement, since root movement by descending 3rd is more apt to produce traditional sounding chord progressions than the other type.

The rather even distribution (in per cent figures) of the tabulation in general, especially in root movements by 2nd and by 3rd, is typical of the later symphonies and is modern in implications.

The decreased use of root movement by perfect 4th would tend to establish the tonality less emphatically than usual, but there is nothing in the tabulation that indicates any particular prevalence of types or chord progressions that might tend to destroy tonality.

Changes of Sonority

Change of mode is considerably more prevalent than in the preceding movement, and change of 3rd and 5th more prevalent than change of 3rd. Both of these changes are in contrast to the preceding movement and indicate a variation in the composer's technique of composition, a variation which adds variety to the symphony as a whole.

Keys

Table XXVII - Tabulation of Keys
Symphony Number Two - Third Movement

Measures	Key	Comments	Part of Form
1-9	e-flat		A
10-14	b-flat		
14-17	g		
18	(c)	iv in g emphasized	
19-22	a		
23	F-sharp		

Table XXVII - Continued

Measures	Key	Comments	Part of Form
23-24	f-sharp		
24-25	D		
26-28	g		
29-30	f		
31	F		(A)
31	d		
32	B-flat		
32-33	g		
33-34	d		
35-36	b-flat	No tonic chord, chromatic	
37	d		
38	c		
39-40	B		
40-41	E		
41-42	A-flat		
43-47	e-flat		
48-52	E-flat		Part B
52-53	c		
54-62	E-flat		
63-65	E		
65-66	D		
66-68	E		
69-70	b		
71	g		
71	d		
72	b		
73-74	C-c	Chords of both modes	
75-78	c		
79	B-flat		
80	G-flat or g-flat	Chords of both modes	
81	Uncertain	Very chromatic	
82	C-flat		
83-88	E-flat	(Mixolydian 7th, and minor iv chord)	(B)
89-95	e-flat		Part A
96-101	b-flat		
102-105	E-flat-e-flat		
105-106	E		
107-108	B		
109	f-sharp		
110-111	Uncertain	Chromatic	
111-113	g		
113-115	E	No tonic chord	

TABLE XXVII - Continued

Measures	Key	Comments	Part of Form
116-117	Uncertain	Chromatic	
118-120	d		
120-122	E-flat	Deceptive cadence	
122	D-flat		
123	B-flat		
123	a		
124	F		
124-126	a-flat		
126-127	e-flat		
128-130	C-flat	Enharmonic change, becomes B	
131-132	C-sharp		
132-133	D		
133-134	e		
135-136	B-flat		
137-144	b-flat-B-flat	Tonic chord alternates in mode	

The tabulation clearly indicates that this movement follows the general trend of this symphony, containing modulations involving very foreign key relationships. This is especially noticeable when this movement is compared to the corresponding movement of the first symphony (the second movement).

Major keys a minor 2nd apart (the Neapolitan relationship) are quite prominent, and third relation is also found. In contrast to the first symphony, major keys a major 2nd apart are not very prevalent.

It is interesting that this movement lacks modulations to keys an augmented 4th distant, especially in view of the

fact that these were found in the first symphony, a work which tended to contain rather closely related keys.

Change of mode is prominent, especially in the coda, where there is considerable alternation between major and minor chords not only on the tonic chord, but on the subdominant as well.

V. THE FOURTH MOVEMENT

Introductory Comments

Although there are some peculiarities, the fourth movement appears to be basically in sonata form. It is considerably simpler than any previously discussed movement in sonata form, containing only two themes, and very little development.

The first subject is basically in D major, and is repeated in the dominant key (A major) before the appearance of the second subject. The second subject is basically in A minor. The use of the dominant minor key is of course a relatively simple tonal relationship, although not as usual as the use of the dominant major. It will be recalled that the first movement of the first symphony also employed this tonal relationship (the keys were C major and G minor). It will also be recalled that the Mixolydian 7th, which is very characteristic of all of Carl Nielsen's symphonies, causes the major key to be closer to its dominant minor than is usually the case.

The recapitulation begins in the same key as the exposition (D major). The second subject appears first in C minor in the form of a fugato, and this is a new development of the theme. It then appears in its original form and still in C minor. Although it is characteristic of the composer to include some new development in the recapitulation section, it is certainly unusual for there to be more development in this section than there was in the development section; and this is exactly what occurs in this movement.

The movement ends with a coda based on the first subject but rhythmically altered to sound like a march. The symphony ends in A major. Thus the second symphony ends in a key other than that in which it began, a characteristic also found in the first symphony (in G minor, ending in C major) and in all of his other symphonies as well.

Chords

Table XXVIII - Tabulation of Chords
Symphony Number Two - Fourth Movement

Triads							
Major	67.9% 233	Minor	25.9% 89	Augmented	2.3% 8	Diminished	3.8% 13

Seventh Chords			
Major-minor	40.0% 56	Major-major	8.6% 12
Minor-minor	32.1% 45	Minor-major	0
Augmented-minor	0	Augmented-major	1.4% 2

Table XXVIII - Continued

Seventh Chords - Continued	
Diminished-minor 10.0% 14	Diminished-diminished 7.9% 11
Ninth Chords	
Major-minor-minor 0	Major-minor-major 1
Major-major-minor 0	Major-major-major 1
Minor-minor-minor 1	Minor-minor-major 2
Minor-(no 7th)-minor 0	Minor-(no 7th)-major 1
Minor-major-minor 0	Minor-major-major 0
Diminished-minor-minor 1	Diminished-diminished-minor 2
Eleventh Chords	
Major-minor-major-perfect 0	Major-minor-major-augmented 0
Major-major-major-perfect 0	
Minor-minor-major-perfect 0	
Thirteenth Chords	
Major-major-major-perfect-minor 0	
Augmented Sixth Chords	
Italian 1	French 2
German 1	Minor German 2
Chords with Added Tones: Minor 9th 0	

Table XXVIII - Continued

	Number of Occurrences	Percentage All Chords
Total Number of Triads	343	68.9%
Total Number of Seventh Chords	140	28.1%
Total Number of Ninth Chords	9	1.8%
Total Number of Eleventh Chords	0	
Total Number of Thirteenth Chords	0	
Total Number of Augmented Sixth Chords	6	1.2%
Total Number of Chords with Added Tones	0	
Total Number of Chords	498	

The chord texture is basically simple. Triads are used slightly more than usual (the most extensive use found in this symphony, but by a very narrow margin), seventh chords used less than in any other movement (by a more substantial margin), ninth chords are used rarely (but not unusually so for this symphony), and neither eleventh, or thirteenth chords are found.

Triads. There is an unusually high proportion of major triads to minor ones, and no significant change in either diminished or augmented triads. The apparent cause of the large content of major triads is twofold: first, the extensive use of the major mode; and second, the extensive use of primary triads (chords I, IV, and V of course being major triads when in the major mode).

Seventh Chords. Since the major mode is used extensively and with a high content of the primary triads,

one would expect an increase in the percentage of major-minor seventh chords (because they are found on the dominant), and an increase of major-major seventh chords (because they are found on the tonic and subdominant scale degrees). The tabulation affirms this speculation, for both types are used more than usual, especially the major-major type, which is nearly twice as prevalent as usual.

Despite the increase of seventh chords based on the major triad, there is still a fairly even distribution of other types. The minor-minor type is more prevalent than average (for this type of chord) and fairly close in percentage to the major-minor type. There is also a fairly even distribution of diminished-minor, diminished-diminished, and major-major seventh chords.

The complete absence of minor-major seventh chords and the noticeably decreased use of the diminished-diminished type are both probably caused by the extensive use of the major mode, a mode in which neither of these types is found as a diatonic (or unaltered) chord.

Augmented Sixth Chords. The presence of the minor form of the German sixth chord in both this as well as the third movement implies that this chord has become a part of the composer's technique of composition rather than a freak caused by the contrapuntal peculiarities of the third movement.

Root Movement

Table XXIX - Tabulation of Root Movement
Symphony Number Two - Fourth Movement

Type of Root Movement	Total	Per Cent
By ascending 2nd	76	18.1%
By descending 2nd	45	10.7%
By ascending 3rd	29	6.9%
By descending 3rd	64	15.3%
By ascending perfect 4th	132	31.5%
By descending perfect 4th	65	15.5%
By ascending or descending tritone	8	1.9%
Total Number of Root Movements	419	

Changes of Sonority	
Change of Mode	23
Change of 5th	5
Change of 3rd and 5th	5

Root movement by perfect 4th. Root movement by ascending perfect 4th is unusually prevalent (more so, in fact, than in any other movement of the second symphony). Although this total is high for the second symphony it is not unusual in comparison to the first symphony (in fact very close to the average for this type of root movement found in that work). Root movement by descending perfect 4th is unusually scarce (more so than in any other movement of either the first or second symphonies), being used slightly less than half as frequently as that by ascending

perfect 4th, less than that by ascending 2nd, and only slightly more than that by descending 3rd.

Root movement by 2nd. Root movement by ascending 2nd is used somewhat more than usual, and that by descending 2nd somewhat less than usual; but the total use of both types is nearly identical in percentage to the average found in this symphony for these types of root movement.

Root movement by 3rd. There is some increase in the use of the descending type and some decrease in that of the ascending type.

Root movement by tritone. This is unusually rare, more so in fact than in any other movement of either this or the first symphony.

General observations. In every case, the types of root movement most apt to produce normal chord progressions (by ascending perfect 4th, descending 3rd, and by ascending 2nd) are more abundant than usual; and the types least apt to produce normal chord progressions (by descending perfect 4th, ascending 3rd, descending 2nd) are used less than usual. This, plus the tendency toward the use of primary chords suggest a return to the style of an earlier period. The music does in fact sound somewhat like that of Mozart or Haydn (other than in its modulation scheme), as might be expected.

On the other hand, there is a more nearly equal amount of all types of root movement (other than by tritone) than is usual (much more so than would be the case in the music of either Mozart or Haydn) and this has modern implications. Because the chord texture is basically simple, and the chord progressions generally traditional, the total effect seems reminiscent of the classical symphony.

Keys

Table XXX - Tabulation of Keys
Symphony Number Two - Fourth Movement

Measures	Key	Comments	Part of Form
1-12	D		Exposition Section Subject I
13-16	B-flat		
17-21	G-flat		
22-24	g		
25-27	F		
28-31	B-flat		
32	E-flat	Unison scale only	
33-46	A	Repitition of beginning in the key of the dominant	Subject I
47-48	F		
49-52	b-flat		
53-56	c		
57-60	d		
61-62	E		
63-65	A		
66-70	(Uncertain)	Distant and chromatic	
71-75	b		
76-92	a		Subject II
93-98	g		
99-103	d		
104-105	A		
106-107	b		

Table XXX - Continued

Measures	Key	Comments	Part of Form
108-111	G-flat	Subjects I and II	Development Section
112-114	b-flat		
115-125	A-flat		
126-127	E-flat	Deceptive cadence	
128-130	F		
131-132	c		
133-134	C		(Development Section)
135-144	F		
145-176	A	(Subject I in march rhythm)	Subject I
177-188	D		Recapitulation Section Subject I
189-192	B-flat		
193-197	G-flat		
197-200	g		
201-203	F		
204-206	B-flat		
207-208	E-flat	Unison scale only	
209-220	A	Subject I at Dominant key	Subject I
221-229	F-sharp	Different from exposition	
225-226	D		
227-228	E-flat		
229	E		
230-231	A		
232-245	G		
246-247	c	Fugato on subject II	Anticipation of Subject II
248-250	E-flat		
251	G-flat		
252	b-flat		
253-254	A-flat		
255-256	F		
257	b-flat		
258-259	E-flat		
260-263	c		
262-263	D-flat		
264-265	c		
266-276	c	Normal form of subject II	Subject II

Table XXX - Continued

Measures	Key	Comments	Part of Form
277-279	E		
280-282	A		
283-288	A	March form of subject I	Coda
289-291	C-sharp		
292-293	A		
294-295	G		
295-298	A		
299-301	d		
301-312	A		End of Symphony

In general, the types of modulation follow the trend of the symphony as a whole. Very distant modulations, especially to keys a minor second are common, third relation also being found.

At measure 32 (and measure 209 in the recapitulation) a very interesting modulation involving keys a tritone apart is found (E-flat major and A major). The section in A major is nothing more pretentious than a restatement of subject I at the dominant (the original key was D). However, reaching the dominant by tritone is an interesting approach to this key. Also of interest is that the modulation is accomplished with a unison passage which involves only one chromatic change and that occurs at the time the second key is reached. Unison passages are typical of the composer, being found in all of his symphonies, but modulations by tritone are rare.

This modulation is particularly prominent because it leads into the restatement of the first subject at the dominant. Thus, the composer has mixed classical elements (such as restatement of a theme at its dominant) with elements very foreign to the classical symphony (the tritone relationship) in a manner quite reminiscent of Prokofiev's Classical Symphony.

In other movements (of this or of the first symphony) foreign modulations have tended to be accompanied by a considerable amount of chromaticism. This movement is unusual in tending toward simpler harmonies but with many foreign and abrupt modulations. In this respect it resembles the third movement of Prokofiev's Classical Symphony. The comparison seems particularly apt, since the Russian composer's work contains the same reminiscence of Mozart or Haydn that appears in the finale of Nielsen's second symphony. In both works the simplicity of harmony is in marked contrast to the many foreign modulations.

The reason for Nielsen's foreign modulations in this movement is undoubtedly to portray the capricious nature of the sanguine temperament. This is another example of how the programatic element has effected the content of the symphony, but not the form.

General observations. The main changes found in the second symphony (in comparison with the first) are:

1. Less root movement by perfect 4th but generally a clearer (and more traditional) tonality established by predominantly normal chord progressions;
2. Less ambiguity of mode;
3. An increase in the number of chord types used, but a trend toward the increased use of triads;
4. Increased use of foreign modulations;
5. The inclusion of a programatic element in each of the four movements, and finally;
6. The beginnings of cyclical use of themes.

CHAPTER V

SYMPHONY NUMBER THREE (SINFONIA ESPANSIVA), 1910-1911

I. THE SYMPHONY AS A WHOLE

Introductory Comments

The third symphony requires more instruments than the preceding works, and is the only symphony (by Nielsen) that employs the human voice. It will be remembered that the first symphony was scored for two of each woodwind instrument (except for a third flute part doubling on piccolo), and that the second symphony was scored similarly (except that the second oboe part contained six measures of English horn). The third symphony is scored for three of each woodwind, and the third parts are not merely doublings but occasionally have considerable independence. Although these changes are not unusual for the era in which the work was written, they constitute a change in the direction of more modern practices.

The third movement of this symphony contains two vocal parts, one for soprano, and one for baritone. These parts contain no words, using only the vowel sound "Ah," and are

therefore used more or less as instruments, adding two new timbres to the orchestra.

The title of the work, Sinfonia Espansiva, might suggest that there is a programatic element such as that found in the second symphony, but this is not true. The title is only indicative of the way the symphony is constructed, namely, with a marked tendency to begin with very rudimentary melodic fragments and to develop these into more complete themes. Whereas in the preceding symphonies there was a tendency toward the use of several distinct themes (in the movements in sonata form), the tendency in the third symphony, particularly in the first movement, is toward the building up of new themes from fragments. Consequently these themes are inclined to be more closely related than was the case in the earlier symphonies. This technique of composition is one used by Sibelius and other composers of the twentieth century and therefore may be regarded as modern in implications. This process of thematic synthesis and amalgamation does not extend beyond the limits of any one movement; that is, there is no cyclical use of themes or even of fragments. The traditional concept of the four movement symphony whereby the four movements are in contrast to each other rather than thematically interrelated is thereby preserved. It is very typical of Carl Nielsen to maintain some traditional element when experimenting with new techniques, his over-all growth being much more by slow evolution than by the sudden and revolutionary incorporation of new ideas.

Chords

Table XXXI - Tabulation of Chords
Symphony Number Three - Totals from All Movements

Triads

Major	53.9% 787	Minor	37.5% 548	Augmented	2.3% 33	Diminished	6.4% 93

Seventh Chords

Major-minor	31.8% 217	Major-major	8.1% 55
Minor-minor	25.2% 172	Minor-major	1.5% 10
Augmented-minor	.9% 6	Augmented-major	1.3% 9
Diminished-minor	20.1% 137	Diminished-diminished	11.3% 77

Ninth Chords

Major-minor-minor	8	Major-minor-major	15
Major-(no 7th)-minor	1	Major-(no 7th)-major	11
Major-major-minor	0	Major-major-major	3
Minor-minor-minor	1	Minor-minor-major	5
Minor-(no 7th)-minor	3		
Minor-major-minor	0	Minor-major-major	0
Diminished-(no 7th)-minor			1

Eleventh Chords

Major-(no 7th)-major-perfect	1
Diminished-diminished-(no 9th)-diminished	1
Diminished-minor-minor-perfect	1
Diminished-minor-(no 9th)-perfect	6
Minor-minor-minor-augmented	1
Minor-minor-major-augmented	1

TABLE XXXI - Continued

Thirteenth Chords	
Major-minor-major-perfect-major	1

Augmented Sixth Chords			
Italian 5	Minor Italian 6	French 18	German 6

Chords with Added Tones	
Minor plus major 6th	4

	Number of Occurrences	Percentage All Chords
Number of Triads	1461	65.0%
Number of Seventh Chords	683	30.5%
Number of Ninth Chords	48	2.1%
Number of Eleventh Chords	11	.5%
Number of Thirteenth Chords	1	.04%
Number of Augmented Sixth Chords	35	1.6%
Number of Chords with Added Tones	4	.2%
Total Number of Chords	2243	

There are several tendencies noted in the preceding symphony which continue in the third symphony, and thereby establish trends. Some of these trends are:

1. A further increase in the use of triads, a trend which continues and culminates in the fourth symphony.
2. A further decrease in the use of seventh chords but with a more nearly equal balance between the various types, a trend that is fairly consistent through the sixth symphony, the fifth being an exception.
3. Increased use of ninth chords which, though very slight in this symphony, is part of a trend that culminates in the fifth symphony with a slight fall-off occurring in the sixth symphony.

4. Very little change in the percentage of augmented sixth chords.
5. No increase in the use of eleventh chords. There was some increase in the second symphony but this chord remains fairly constant in percentage thereafter with only slight increases in the fifth symphony.
6. No increase in the use of thirteenth chords. This chord never totals more than .4 per cent in any of the six symphonies.
7. No significant change in the number of chords with added tones. These remain fairly constant through the fourth symphony, but are significantly more prevalent in the fifth and sixth symphonies.

There are also some trends in connection with specific types of chords, which will be mentioned, but, in general, interest will center more on the balance between the various types.

Triads. The second symphony contained the highest proportion of major triads found in the six symphonies. The third symphony begins a trend of fewer major triads. This trend continues through the sixth symphony where the lowest proportion of this triad is found. However, in every case the major triad accounts for more than 50 per cent of the total number of triads.

The minor triad is more prevalent than in any other of these symphonies except the first, but not by a significant amount. There is no consistent trend of either increase or decrease in the use of the minor triad, although it tends to remain quite close to 35 per cent (except for the 42.4 per cent in the first symphony).

The augmented triad remains the rarest type of triad, also one of the most consistent ones in its percentages.

The third symphony begins a trend toward decreased use which continues through the fifth symphony, but the decreases are only by fractions of a percent.

The diminished triad shows some increase in amount of use. This begins an unbroken trend which continues through the sixth symphony.

Seventh chords. The diminished minor type is more prevalent than in any of the other five symphonies and is also closer to the minor-minor type in prevalence than in any of the other works. The ratio between the diminished-minor and the diminished-diminished types is nearly two to one in favor of the diminished minor. This proportion is quite typical of all of the symphonies which follow, and thus begins a new trend.

The major-major type seventh chord is more prevalent than in any other of these symphonies except the sixth, and establishes a new trend of such prevalence. Because it is one of the more dissonant types of seventh chord, its new prevalence has some rather modern implications.

The general configuration of the tabulation, with its noticeably closer balance, especially between the major-minor, minor-minor, and the diminished-minor types, is quite typical of the symphonies that follow. This evenness of distribution with decreased use of the major-minor type tends to distinguish the work from music of the nineteenth century and indicates considerable progress in the over-all chord texture.

Ninth chords. The major-minor-major type ninth chord, the most prevalent type in both the first and second symphonies, remains the most prevalent type in the third symphony.

There is a trend toward greater use of ninth chords which lack 7ths. In the third symphony, such chords are second in total number only to the complete major-minor-major type - a substantial increase over the total found in the preceding symphony. This trend toward the use of incomplete ninth chords continues in the works that follow and is therefore a typical development in the composer's technique of writing.

Ninth chords constructed on the diminished type triad have decreased in number to only one example. Although this is of very little significance in view of the general rareness of ninth chords, it is interesting that the earlier works contained more of such chords. The composer generally tends to base the more complicated types of chords on the most common types of triad such as the major or the minor types.

Eleventh chords. Because of the extreme rareness of eleventh chords in any of the first three symphonies, variations in the prevalence of the various types are of considerably less significance than is the case with either triad, seventh chords, or even ninth chords. It is interesting to note that whereas all of the eleventh chords found in the first symphony were based on the minor triad, nearly all found in the second symphony are based on the major triad, and that in the third symphony most are based on the diminished triad.

Thirteenth chords. This type of chord is little used in the third symphony. Because of its rareness, no trend regarding the types found can be considered to exist, but the infrequent use of thirteenth chords must be regarded as a conservative factor in the chord texture of the third symphony.

Augmented sixth chords. The French sixth chord is unusually prevalent, whereas in the preceding symphony the German type was most prevalent. Unlike in the second symphony, the minor form of the Italian sixth chord is found, rather than the minor form of the German type.

Chords with added tones. There are no new developments of any significance, either in types used or in prevalence, to be found in the third symphony. Although minor triads with added major 6ths were not found in the earlier works, they are closely related to the major triads with added major 6ths that were found in the first symphony, and not really a new development. The use of chords with added tones in the third symphony is quite conservative, especially in view of the fact that the second symphony contained chords with split 3rds (two types of 3rds of a chord sounding simultaneously as essential harmony).

Root Movement

Table XXXII - Tabulation of Root Movement
Symphony Number Three - All Movements

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	257	13.0%
By descending 2nd	238	12.0%
By ascending 3rd	177	8.9%
By descending 3rd	292	14.8%
By ascending perfect 4th	540	27.3%
By descending perfect 4th	397	20.1%
By ascending or descending tritone	78	3.9%
Total Number of Root Movements	1979	

Tabulation of Change of Sonority

Change of Mode	55
Change of 5th	26
Change of both 3rd and 5th	13

Root movement by perfect 4th. There is a slight increase of both types of root movement by perfect 4th (in comparison to the preceding symphony) but neither type is as prevalent as in the first symphony. The balance between the two types is closer than in either of the preceding symphonies, that is, they are more nearly equal in prevalence.

Root movement by 3rd. The statistics are nearly identical to those for this type of root movement found in the preceding symphony. This stability of root movement by 3rd from symphony to symphony is typical of Nielsen's symphonies.

Root movement by 2nd. Root movement by ascending 2nd is used less than in the second symphony, but that by descending

2nd shows no significant change. Consequently, the two types are nearly equal in the amount of use, and neither type is as prevalent as root movement by descending 3rd, a peculiarity also found in the first symphony.

General Observations. The most unusual feature of the tabulation is the nearly equal balance between ascending and descending types of like interval, as well as the unusually even distribution between root movement by 2nd and that by 3rd.

The rather equal balance between ascending and descending types of root movement indicates that normal chord progressions are probably not as predominant in this symphony as in the preceding one - another departure from traditional practices, and one having modern implications.

The increased use of root movement by 4th would tend to compensate for this, by helping to establish tonality more firmly (especially when the tonic chord is involved). Partly because of this, the tonality is as clear, if not clearer, than it was in the second symphony, and certainly more so than in the first.

Changes of Sonority

Three distinct trends may be found in the tabulation. Change of mode has been decreasing steadily in prevalence. The implication of this is that change of mode, although perhaps used more extensively by Carl Nielsen than by his contemporaries, appears to be a mannerism of the nineteenth century

which he is getting away from in the third symphony. This is another change which tends to distinguish the third symphony from the music of the nineteenth century, and perhaps one that will be welcomed by some listeners.

A second trend, similar to the first, is one of decreases in the use of change of 3rd and 5th. This type of change of sonority has special implications of chromaticism because of the double chromatic change involved. Its demise has, for this reason, further suggestions of departure from the practices of the nineteenth century.

The third trend is one of considerable stability in the amount that change of 5th is used. It has not been used as frequently as either of the other types of change, and is thus less significant. Perhaps its usefulness in modulations is a reason for its continued use.

General Observations. The noticeable decrease in change of mode reduces considerably the ambiguities of mode and sometimes of tonality which were especially prominent in the first symphony.

II. THE FIRST MOVEMENT

Introductory Comments

The first movement is in sonata form as were the first movements in the preceding symphonies (and those that follow except the fifth). The two main subjects are comprised of several individual themes, but in general show considerable

integration. That is, the main subjects are quite clearly a unit comprised of carefully organized parts. Thus, although the two main subjects are clearly separated and in marked contrast to each other, the individual parts fit together very well and form a well organized unit.

The recapitulation contains a great deal of new development as is characteristic of all movements in sonata form that are found in these six symphonies. The recapitulation varies so greatly from the exposition that it is difficult to determine exactly where it begins. Thus there is very little, if any, separation between the development section and the recapitulation.

Continuity is one of the most salient features of the movement. The clearest separation is between the first and second subjects when presented in the exposition. After these are clearly established as the two main subjects of the movement, they are thoroughly developed but recapitulated more by reminiscence than by exact and formal restatement. This noticeable continuity of the music and better integration of materials within the main subjects is significant, for it leads to the amalgamation of the usual four movements into two large ones that is found in the fifth symphony.

Ex.17 Allegro espansivo

It will be noted in Example 17 (the beginning of the first subject) that the Dorian mode is very evident. Since B-natural appears in the melodic line before B-flat and since the B-flat is approached chromatically from B-natural, it is possible to regard the melodic line as essentially in the Dorian mode, and to regard the B-flat as an accented passing tone. In view of the fact that the composer has already shown a marked inclination to combine the tones of the Mixolydian and the major mode into an expanded major mode containing two types of 7th scale degree, it might be best to say that there is now a similar expansion of the minor mode to include two forms of the 6th scale degree: the Dorian, a major 6th above the tonic and not involving the raised 7th scale step; and the normal one, a minor 6th above the tonic. It is, nevertheless, clear that the Dorian element is very prominent in this movement of the third symphony and is a distinct peculiarity of the movement. (Major subdominant chords have been found in conjunction with the minor mode in the earlier symphonies but not with melodic elements as strongly Dorian as this.)

Ex.18 molto tranquillo (quasi d.=76)

Example 18 (the beginning of the second subject) contains several interesting features. In the fifth measure the melodic line is related both intervalically and rhythmically to the fourth and eighth measures of Example 17. The rhythmic patterns (a quarter note followed by a half note) are identical, and the intervals (a descending 2nd) similar. This indicates a growing trend toward more closely related first and second subjects in sonata form, an integrating factor in the form.

Another interesting feature found in Example 18 is in the two inner accompanying parts on the second staff. These two parts form a chromatically altered version of horn fifths, which result in a functional minor Italian sixth chord found on the first beat of the second measure. The upward resolution of the A-sharp to B-natural is typical of the augmented sixth chord and implies that the spelling is correct. The C should resolve downward by minor 2nd according to traditional practices, but since minor forms of augmented sixth chords were found in the second symphony, it seems reasonable to consider this also as an example despite the one peculiarity. If the A-sharp had resolved downward, there would have been no doubt that a mispelling had occurred, and that the tone should have been spelled B-flat (a 7th above C)in the other inner part, and resolving by descending 2nd.

Chords

Table XXXIII - Tabulation of Chords
Symphony Number Three - First Movement

Triads							
Major	51.8% 345	Minor	38.9% 259	Augmented	2.6% 17	Diminished	6.8% 45

Seventh Chords			
Major-minor	25.8% 70	Major-major	6.3% 17
Minor-minor	24.4% 66	Minor-major	3.0% 8
Augmented-minor	1.1% 3	Augmented-major	0
Diminished-minor	24.0% 65	Diminished-diminished	15.5% 42

Ninth Chords			
Major-minor-minor	0	Major-minor-major	3
Major-(no 7th)-minor	0	Major-(no 7th)-major	4
Major-major-minor	0	Major-major-major	3
Minor-minor-minor	1	Minor-minor-major	1
Minor-(no 7th)-minor	2		
Minor-major-minor	0	Minor-major-major	0
Diminished-(no 7th)-minor			0

Eleventh Chords	
Major-(no 7th)-major-perfect	0
Diminished-diminished-(no 9th)-diminished	0
Diminished-minor-minor-perfect	0
Diminished-minor-(no 9th)-perfect	6
Minor-minor-minor-augmented	1
Minor-minor-major-augmented	1

Table XXXIII - Continued

Thirteenth Chords	
Major-minor-major-perfect-major	0

Augmented Sixth Chords			
Italian 2	Minor Italian 4	French 3	German 1

Chords with Added Tones	
Minor plus major 6th	0

	Number of Occurrences	Percentage All Chords
Number of Triads	666	68.7%
Number of Seventh Chords	271	28.0%
Number of Ninth Chords	14	1.4%
Number of Eleventh Chords	8	.8%
Number of Thirteenth Chords	0	0
Number of Augmented Sixth Chords	10	1.0%
Number of Chords with Added Tones	0	0
Number of Chords	969	

Triads are used somewhat more than is usual for this symphony and seventh chords somewhat less, but these deviations are negligible. Similarly, ninth chords are only slightly rarer than usual. The total absence of thirteenth chords is of very little consequence in view of their extreme rareness elsewhere in this symphony. In general, the statistics of the larger chord classifications (triads, seventh chords, ninth chords, etc.) resemble closely those for the symphony as a whole. Interest centers more on the individual types of chords, especially seventh chords.

Seventh chords. The major-minor, minor-minor, and diminished-minor types of seventh chord are nearly equal in amount of use. Where nearly equal amount of use of the first two types has been part of a trend, the diminished-minor type has been considerably less prevalent than in this movement. Another notable peculiarity is the increased use of the diminished-diminished type seventh chord (more prevalent than usual for this symphony). The result of all of these deviations is a rather even distribution (in total amount of use) of the various types of seventh chords.

Ninth chords. It is interesting to note that the major-major-major type ninth chord is used as much as the major-minor-major. This is interesting since the former is a more dissonant chord than the latter. Also of interest is the considerable number of ninth chords lacking 7ths.

Eleventh chords. Eleventh chords based on the diminished triad are the most numerous as is characteristic of this symphony. Those based on the minor triad are rare, and those based on the major triad not found. The use of eleventh chords based on the diminished triad compensates somewhat for the lack of any ninth chords based on this sonority.

Root Movement

Table XXXIV - Tabulation of Root Movement
Symphony Number Three - First Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	101	11.7
By descending 2nd	107	12.4
By ascending 3rd	74	8.6
By descending 3rd	123	14.2
By ascending perfect 4th	247	28.6
By descending perfect 4th	181	20.9
By augmented 4th	32	3.7
Total Number of Root Movements	865	

Tabulation of Change of Sonority	
Change of Mode	26
Change of 5th	11
Change of both 3rd and 5th	10

Root movement by perfect 4th. That by ascending perfect 4th is used slightly more than usual for this symphony.

Root movement by 3rd. There is no significant deviation from the norm in the use of either type of root movement by 3rd. This stability (lack of deviation) is a characteristic found in the earlier symphonies and is not unusual.

Root movement by 2nd. Root movement by descending 2nd is more prevalent than that by ascending 2nd. Although this is the only movement in the third symphony where this is found, and it was not found in the second symphony, it was characteristic of the first movement of the first symphony and therefore is not unique.

General observations. The tabulations in general are exceedingly close to those of the symphony as a whole. This movement may for this reason be considered as typical of the third symphony in its use of root movement. The nearly equal use of the two types of root movement by 2nd is not unusual for this symphony, although the slightly greater use of that by descending 2nd than by ascending 2nd is not found in the movements that follow.

Keys

Table XXXV - Tabulation of Keys
Symphony Number Three - First Movement

Measures	Key	Comments	Part of Form
1-14	Uncertain	A only tone present	Exposition
15-27	d Dorian & minor	First subject	
28-29	b-flat		
30-31	C-c		
32-34	F		
35-43	g-flat (f-sharp)		
44-49	g Dorian & minor		
50-55	G		
56-58	e		
58-73	g-sharp	picardie 3rd	
74	a		
75-77	c		
78-81	C		
82-85	g		
86-92	F		
93-97	f		
98-99	b-flat		
100-101	d-flat		
102-106	g		
106-137	a-flat		
138-146	A-flat	Second subject, quite chromatic	
147-153	D-flat or A-flat	Mixolydian	
154-167	d-flat (c-sharp)		
168-171	Uncertain	Diminished triads and seventh chords only	

Table XXXV - Continued

Measures	Key	Comments	Part of Form
172-212	b-flat		
213-225	c		
226-251	C	Some emphasis of subdominant key F	
252-258	c		
259-287	C		
288-311	a	Some a Dorian	Development
312-322	C	Some Mixolydian 7th	
323-326	f		
327-336	a-flat	(g-sharp)	
337-340	D		
341-342	A		
343-349	f-sharp		
350-352	F-sharp		
352-358	f-sharp		
359-362	c-sharp	Interesting series of	
363-364	e	keys by ascending	
365-367	g	minor 3rd	
368	G		
369-383	F		
384-390	b-flat		
391-393	D-flat		
394	c-sharp		
394-399	E	Some Mixolydian 7th	
400-404	b	Some emphasis of f-sharp and G	
405-435	f-sharp	Some emphasis of G, some f-sharp Dorian	
436-450	c-sharp		
451-461	f and f Dorian		Recapitulation First subject
462-467	d and d Dorian		
468-469	C		
470-471	A		
472-478	e and e Dorian		
479-482	e-flat		
483-490	E-flat		Second subject
491-498	A-flat	Or E-flat Mixolydian	
499-504	e-flat	First subject interpolated, not in exposition	
505-518	g-sharp (a-flat)	Second subject, fragments of first subject now used as accompaniment	
519-555	f	New development of first and second subject	

Table XXXV - Continued

Measures	Key	Comments	Part of Form
556-557	F	No tonic chord	
558-559	c		
560-561	a		
562-571	A		
572-575	f-sharp		
576-578	b		
579-589	B		
580-583	A		
584-595	d	Strong Dorian tendencies, first subject	
596-599	D		
600-604	A-flat		
605-607	a-flat	Basically, modulations by descending minor	
608-610	g	No tonic chord	2nd
611	G	Change of mode on tonic chord	
612-614	f-sharp		
615-617	a		
618-621	d		
622-624	e		
625-632	D	Some mixolydian 7th	
633-637	d	Natural 7th	
638-639	g		
640-641	b-flat		
642-645	e	Rare modulation by tritone	
646-655	d (some d Dorian)	Tier of keys by	
656-664	c-sharp	descending 2nd	
665-666	F		
667-681	g		
682-683	F		
684-686	g		
687-692	F		
693-696	g		
697-699	a		
700-705	A		
706-717	a		
718-719	f-sharp		
720-728	B		
729-734	A		

Before proceeding with discussion of the tabulation it is necessary to establish a clear idea of just what concepts of mode and tonality are employed in the third symphony. More specifically, it is necessary to understand how these concepts compare to those which were employed in the two preceding symphonies. This information is essential to an adequate understanding of the music as well as of the growth of the technique of composition.

Concept of Modes. The traditional concept of the major and minor modes is retained as well as the use of the Mixolydian 7th as an intrinsic tone in the major scale (an expansion of the major scale found in both of the preceding symphonies). Although present, the Mixolydian 7th is less prevalent than in the two earlier works.

The amalgamation of the Dorian and minor scales mentioned on page 185 literally permeates the first movement and is perhaps the most saliant feature of the movement, greatly overshadowing the occasional Mixolydian 7th. The Dorian element is found not only in melodic lines but in the harmony as well, thereby causing the subdominant triad to be major. The subtonic scale degree, located a major 2nd below the tonic, and common to both the Aeolian and Dorian modes, is also used both melodically and harmonically. Its use occasionally causes dominant chords of minor sonority as well as the very characteristic subtonic triad of major sonority.

One limitation in the application of these expanded concepts of scales is that they are not used simultaneously but rather alternately. More specifically, no example has been found in the third symphony in which the normal 7th scale degree of the major mode and the Mixolydian 7th are used simultaneously, resulting in simultaneous cross relation. Similarly, no cross relation has been found involving the simultaneous use of the Dorian and minor 6th scale degrees, or that involving the 7th scale degrees of the Dorian mode and the harmonic form of the minor.

In summary, tones borrowed from the Mixolydian as well as the Dorian mode are used to create variety both in the melodic line and in the harmony, but not to create dissonance.

Concept of Tonality. The concept of tonality has not changed significantly from that found in the two preceding symphonies. The primary triads (or chords based on these), that is, the tonic, subdominant, and dominant, continue to be a vital factor in the establishment of keys, especially at cadences. No particular change in cadences has been noted either. As in the preceding works, a large number of altered chords are found, especially secondary dominants; and these altered chords sometimes cause doubts as to what the key is. Nevertheless, there is never any doubt that the music is tonal and based on triadic type harmony.

Although the concept of tonality does not appear to have changed significantly from the first symphony to the third, the application has changed considerably. It will be remembered that in the first symphony (especially in the

first movement) the use of the major mode with Mixolydian 7th and the dominant minor key caused considerable ambiguity of mode. In the second symphony there was generally less ambiguity of key but the tonality was occasionally clouded somewhat by the extensive use of simultaneous cross relation, especially in the first movement. In the first movement of the third symphony extensive use of the Dorian mode is encountered, but the underlying concept of tonality (relationship between the tonic and other chords within the key) has not changed. The Dorian mode adds flavor to the harmony but does not upset the concept of tonality.

Considering now the tabulations of keys, it is evident that as in the first movements of the two preceding symphonies, many foreign modulations are found. There are, however, several sequences of modulations which distinguish the third symphony from the first and second.

From measures 34-74 there is an ascending series of modulations by minor 2nds interrupted by one change of mode (F, f-sharp, g, G, g-sharp and a). Similarly, there is a descending series of modulations by minor 2nds, also interrupted by one change of mode, from measures 607-612 (a-flat, g, G, f-sharp).

Third relation between minor keys is prominent at the beginning of the movement, being the first modulation found (A minor to C minor, measure 312). An ascending series of two modulations is also found between measures 362 and 365 (C-sharp minor, E minor, and G minor).

The movement ends with considerably less finality (the final key less clearly established) than was the case in the corresponding movements of the two preceding symphonies. The penultimate key B major is a major 2nd above the final key A major and therefore not closely enough related to help establish it. Also, the final key (A major) is reached only four measures before the end of the movement. The effect of this indecisive ending is to create greater dependence between movements. The nonconclusive ending demands that the second movement must follow. This is a definite step towards closer interdependence of the first and second movement, a trend culminating in the fifth symphony where the first and second movement are welded into one large unit.

III. THE SECOND MOVEMENT

Introductory Comments

A number of unusual features are found in the second movement. It is the only movement in any of the six symphonies to employ the human voice. The two vocal parts, baritone and soprano, contain no words and therefore function in the manner of instruments, adding two new timbres to the orchestral sound. The lack of text eliminates any programatic element other than the title of the symphony. The second movement is simply an instrumental composition with an expanded orchestration.

Static harmony is another distinctive feature of the second movement. A C major triad (occasionally with minor 7th) is sustained for 27 measures as the only essential harmony of the passage (measures 5-31). The melodic line, in C major (sometimes with Mixolydian 7th), in general outlines the chord but also contains a considerable number of nonharmonic tones in moving from one chord member to another. Later in the movement (measures 97-125) a passage using the same melodic line plus some additional melodic material is found, but the static harmony now centers around an E-flat major triad (or occasionally 7th chord). Although static harmony may readily be found in any of Carl Nielsen's six symphonies, the movement under discussion contains the longest, most sustained example found in any of these symphonies.

The form can be symbolized as follows: A B C B C B A (in canon) A-B (contrapuntaly combined) Coda. The A parts of the form contain the static harmony discussed above. The B and C parts of the form are themes that are in contrast to each other and also to A. Episodical form is very apparent throughout this movement. Not only can the middle section of the movement (B C B C B) be considered as episodical in structure, but, if taken as a unit, may be considered part of a larger episodical form, since it contrasts (as a unit) with the A part of the form that both precedes and follows it. Carl Nielsen had a decided preference for the use of some development (in the manner of sonata form), and this

movement, like the slow movements of the two preceding symphonies, also contains evidence of this preference. This is clearly indicated by the use of a canon as well as the contrapuntal combining of themes A and B.

Chords

Table XXXVI - Tabulation of Chords
Symphony Number Three - Second Movement

Triads							
Major	46.2% 61	Minor	45.5% 60	Augmented	1.5% 2	Diminished	6.8% 9
Seventh Chords							
Major-minor	23.6% 21			Major-major	3.4% 3		
Minor-minor	30.3% 27			Minor-major	2.2% 2		
Augmented-minor	2.2% 2			Augmented-major	1.1% 1		
Diminished-minor	24.7% 22			Diminished-diminished	12.4% 11		
Ninth Chords							
Major-minor-minor	0			Major-minor-major	0		
Major-(no 7th)-minor	0			Major-(no 7th)-major	1		
Major-major-minor	0			Major-(major)-major	0		
Minor-minor-minor	0			Minor-minor-major	0		
Minor-(no 7th)-minor	0						
Minor-major-minor	0			Minor-major-major	0		
Diminished-(no 7th)-minor					0		

Table XXXVI - Continued

Eleventh Chords	
Major-(no 7th)-major-perfect	0
Diminished-diminished-(no 9th)-diminished	0
Diminished-minor-minor-perfect	0
Diminished-minor-(no 9th)-perfect	0
Minor-minor-minor-augmented	0
Minor-minor-major-augmented	0
Thirteenth Chords	
Major-minor-major-perfect-major	0

Augmented Sixth Chords

Italian 1	Minor Italian 0	French 3	German 2

Chords with Added Tones

Minor plus major 6th	0

	Number of Occurrences	Percentage All Chords
Number of Triads	132	57.9%
Number of Seventh Chords	89	39.0%
Number of Ninth Chords	1	.4%
Number of Eleventh Chords	0	
Number of Thirteenth Chords	0	
Number of Augmented Sixth Chords	6	2.6%
Number of Chords with Added Tones	0	
Total Number of Chords	228	

Triads. Triads are less prevalent in the second movement than in any other movement of the third symphony, also less prevalent than in any movement of the second symphony. The total resembles rather closely that found in the first symphony. The second movement is therefore atypical of the third symphony in content of triads.

Another peculiarity is the unusually close number of major and minor triads, there being only one more of the major than of the minor. This is a closer balance than can be found in any other movement of the third symphony, or any movement of the two preceding symphonies. This extremely close balance is not found in any other movement of the symphonies that follow except in the third movement of the sixth symphony where the minor triad outnumbers the major by one chord.

The unusually close balance has a fairly simple explanation. The passages of the movement that are in major keys generally involve long sustained tonic harmony and therefore contribute only one major chord to the tabulation for each occurrence (one in C major and one in E-flat major). The passages in minor keys use a more normal harmonic rhythm, contain more chord changes, and therefore contribute more chords to the tabulation, especially minor triads.

If duration is taken into consideration, the total length of time that the major triads are sounding would be considerably greater than that taken up by minor triads. The major triad is therefore considerably more prominent than the minor triad by actual duration but only slightly more

prevalent by actual number of occurrences. However, the second movement of the third symphony is the only one in the six symphonies where this distortion is very pronounced. In other movements there is generally better balance between types of triads that are sustained. If a major triad is sustained for a considerable length of time (generally at a cadence) other passages can be found where the minor triad is similarly sustained. Although the diminished and augmented triads are not generally sustained as long as either the major or minor triad, they are far rarer, and therefore would not be expected to be as prominent as the other two types. In short, tabulations of the prevalence of chords also yields a fairly accurate account of their prominence by actual duration, and this tends to be true in all of the movements of the six symphonies except the second movement of the third symphony.

Seventh Chords. Seventh chords are more prevalent than in any other movement of the third symphony or than in any movement of the second symphony. This might well be expected, in view of the unusually low prevalence of triads in this movement. As was the case with triads, the total percentage of seventh chords resembles quite closely that found in the first symphony. It must be pointed out, however, that the actual duration of triads (because of the extensive use of static harmony) would be considerably greater than that of seventh chords.

The tabulation of the individual types of seventh, ninth, and augmented sixth chords are not disturbed by the static harmony factor because they all appear in passages involving similar and more normal harmonic rhythm. Their prevalence and prominence by actual duration are therefore more nearly equal.

The minor-minor type seventh chord is more prevalent than the major-minor, a situation not found elsewhere in the third symphony or in either of the two which preceded it. It is found in the fourth symphony (first and second movements) as well as in the sixth (first and third movements) and does conform to the composer's trend toward less use of the major-minor seventh chord in each successive symphony.

The major-major type seventh chord is less than half as prevalent as normal for this symphony. The only examples found were in passages in the minor mode, a mode less apt to employ this chord than the major. The extensive use of the minor mode also accounts for the increased use of the augmented-minor seventh chord, since this chord is found as a diatonic, unaltered chord in this mode (the mediant seventh chord in the harmonic form of the minor).

Ninth, Eleventh, and Thirteenth Chords. The rareness of ninth chords and the total absence of eleventh and thirteenth chords is not unusual in view of their general rareness elsewhere in this symphony.

Augmented Sixth Chords. Although augmented sixth chords are rare, they are slightly more prevalent than usual for this symphony. The predominance of the French type is typical of the work.

General Comments. The most unique feature of the movement is its balance of long passages in the major mode that employ static tonic harmony by passages in the minor mode using a more normal harmonic rhythm. The tabulation of seventh chords resemble those of the fourth or sixth symphony more than other movements of the third symphony. Thus this movement is somewhat of an anticipation of the composer's later writing. The considerable reduction in the use of the major-minor type seventh chord is a particularly positive step in moving away from the practices of the nineteenth century.

Root Movement

Table XXXVII - Tabulation of Root Movement
Symphony Number Three - Second Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	39	19.6
By descending 2nd	34	17.1
By ascending 3rd	13	6.5
By descending 3rd	16	8.0
By ascending perfect 4th	51	25.6
By descending perfect 4th	32	16.1
By ascending or descending tritone	14	7.0
Total Number of Root Movements	199	

Table XXXVII - Continued

Tabulation of Change of Sonority	
Change of Mode	5
Change of 5th	0
Change of both 3rd and 5th	0

The root movement of the second movement deviates considerably from the norm of this symphony, containing some peculiarities that are not found elsewhere in either this or the two preceding symphonies.

Root Movement by Perfect 4th. Although root movement by ascending perfect 4th is used somewhat less than is usual for this symphony, it remains the most prevalent type. That by descending perfect 4th has been reduced in amount of use to the extent of being less prevalent than either type of root movement by 2nd - very unusual.

Root Movement by 3rd. Although root movement by 3rd is the most statistically consistent type of root movement found in the six symphonies, deviating the least in prevalence, there is a substantial reduction in the use of both types in this movement; but the balance between the two types (ratio between their totals) is fairly close to normal for this symphony.

Root Movement by 2nd. Both types have been increased in their total use to a higher percentage than is found elsewhere in this or the two preceding movements. The balance between the two is quite close as is typical of this symphony.

Root Movement by Tritone. Normally the least used type of root movement, this is nearly twice as prevalent as usual for this symphony and is more prevalent than root movement by ascending 3rd.

General Observations. The unusually extensive use of root movement by 2nd is the most prominent feature found in the tabulation. The decreased use of that by 3rd is unusual for the composer (in his symphonies) as is the increased use of that by tritone, but less noticeable than the very prevalent root movement by 2nd. The decreased use of root movement by perfect 4th would tend to result in a less emphatically established tonality than usual; but this is balanced by the use of tonally stable passages employing static harmony on the tonic chord with no root movement.

Thus, the over-all effect of the movement is one of fluctuation between passages that are tonally unusually stable because of static harmony and other passages that are tonally unusually unstable because of their root movement.

Keys

Table XXXVIII - Tabulation of Keys
Symphony Number Three - Second Movement

Measures	Key	Comments	Part of Form
1-31	C	(some Mixolydian 7th)	Part A
32-34	a		Part B
35	e		
36-38	d		
38-39	C		

Table XXXVIII - Continued

Measures	Key	Comments	Part of Form
40-42	a		
42-44	C		Part C
44-45	e		
45-46	b		
46-47	f-sharp	Tier of keys by	
47-50	c-sharp	ascending perfect 5th	
50-51	A-flat		
52-53	f		
54-55	c		
56-58	c		Part B
58-60	g		
61-64	b-flat		
64-65	a-flat		Part C
66-67	e-flat		
68-71	b-flat		
72-74	e-flat		
75-76	E-flat		
77	g		
78-79	g		Part B
80	c		
81-83	d		
83	F		
84-86	F	Free canon at unison	Part A
87-88	f		
89-90	a-flat		
91-92	e-flat		
93-96	E-flat		
97-125	E-flat	Part B used as obligato	A and B
126-130	a-flat	New material	D
131-144	E-flat	Based on part B, with static tonic chord	Coda

The greatest peculiarity of the modulation scheme is the large number of minor keys used. No other movement has been found in any of the six symphonies that has such a high frequency of modulations to minor keys. As was mentioned earlier, this extensive use of minor keys results in an unusually high content of minor triads. This also tends to

be in contrast to the long passages in the major mode which are sustained over a tonic chord (major triad or major-minor seventh chord).

One other peculiarity in the keys used is the relative closeness of the keys involved in each modulation. The use of relative major and minor keys (C major and A minor) is quite prominent, as is the use of minor keys a perfect 4th away (A minor and E minor).

The modulation to the most remote key found in this movement is that from A-flat minor to E-flat major. This is not particularly unusual in sound because it is simply modulation to the dominant.

Considering now the key relationships between movements, it will be remembered that the first movement ended in A major, but that this key was not firmly established. The beginning of the second movement in C major is in 3rd relation to the A major immediately preceding it. However, D Dorian (or minor) was the main key of the first movement and this key is closely related to the C major of the second movement. Thus the A major tends to function as a mere emphasis of D Dorian's dominant, what Schenker would call tonicization of the dominant. The beginning of the second movement, in C major, thus strengthens the importance of D Dorian. The ultimate key of the second movement, E-flat major, is moving toward the C-sharp minor of the third movement. It may also be considered to be in opposition to A major, or a conflicting key (according to traditional

harmony) because it is a tritone away from this key.

The tonal function of the second movement is therefore first, to relate closely to the D Dorian of the first movement, thus supplying continuity; second, to repudiate A major as the tonal center of the symphony; and third, to move somewhat closer to the C-sharp minor of the third movement.

IV. THE THIRD MOVEMENT

Introductory Comments

The third movement resembles a scherzo in character but is slower in tempo and different in form. The form resembles closely the rondeau of the Baroque era. That is, it employs one central theme and a number of contrasting themes, with the central theme preceding and following each of the secondary ones. One peculiarity is that the movement begins with an introduction rather than the main theme, some material from this introduction also being used to form the coda at the end of the movement.

Some development of subject matter is found in the third movement as is typical of the composer. In other scherzo-like movements, a fugato evolves from the main theme and several of the secondary themes are used contrapuntally against it. Both the development of themes and the integration of several themes into a new composite are typical of the third symphony and indicate a growing trend which continues in the symphonies that follow.

The movement begins with two French horns playing an open 5th (C-sharp and G-sharp) which is sustained for six measures. This opening may be said to supply a certain amount of stylistic continuity with the preceding movement by the use of static harmony, since static harmony was very prevalent in the second movement. This continuity between movements leads to the linking of movements without pause as found in the fourth symphony, and eventually, in the fifth symphony, to the complete amalgamation of the first and second movements into one large unit and the third and fourth movements into another.

Chords

Table XXXIX - Tabulation of Chords
Symphony Number Three - Third Movement

Triads							
Major	47.5% 132	Minor	42.4% 118	Augmented	1.4% 4	Diminished	8.6% 24

Seventh Chords			
Major-minor	28.1% 36	Major-major	15.6% 20
Minor-minor	19.5% 25	Minor-major	0
Augmented-minor	.8% 1	Augmented-major	2.3% 3
Diminished-minor	22.7% 29	Diminished-diminished	10.9% 14

Table XXXIX - Continued

Ninth Chords			
Major-minor-minor	3	Major-minor-major	2
Major-(no 7th)-minor	1	Major-(no 7th)-major	3
Major-major-minor	0	Major-major-major	0
Minor-minor-minor	0	Minor-minor-major	0
Minor-(no 7th)-minor	1		
Minor-major-minor	0	Minor-major-major	0
Diminished-(no 7th)-minor			1
Eleventh Chords			
Major-(no 7th)-major-perfect			0
Diminished-diminished-(no 9th)-diminished			1
Diminished-minor-minor-perfect			0
Diminished-minor-(no 9th)-perfect			0
Minor-minor-minor-augmented			0
Minor-minor-major-augmented			0
Thirteenth Chords			
Major-minor-major-perfect-major			0
Augmented Sixth Chords			
Italian 1	Minor Italian 2	French 9	German 1
Chords with Added Tones			
Minor plus major 6th	0		

Table XXXIX - Continued

	Number of Occurrences	Percentage All Chords
Number of Triads	278	64.5%
Number of Seventh Chords	128	29.7%
Number of Ninth Chords	11	2.6%
Number of Eleventh Chords	1	.2%
Number of Thirteenth Chords	0	
Number of Augmented Sixth Chords	13	3.0%
Number of Chords with Added Tones	0	
Total Number of Chords	431	

Triads. The frequency with which triads are used is very close to the norm of the symphony as a whole. This not only contrasts with the restricted use of this type of chord in the preceding movement but also tends to re-establish the norm.

Fewer major triads are used than usual for this symphony and more minor ones, but the major triad remains the most common type of triad. The rather extensive use of minor triads was characteristic of the second movement. By continuing this practice in the third movement some continuity is achieved.

The diminished triad is more prevalent in this movement than in any other movement of this symphony or the two preceding ones. Its percentage resembles closely the figures for this type of chord in the fourth and fifth symphonies, thus anticipating their trend toward increased use of this chord.

Seventh Chords. Although the frequency with which seventh chords are used in this movement is very close to the norm of the symphony, there are several interesting changes in the prevalence of the individual types.

The major-major type seventh chord, which was rare in the preceding movement, is nearly twice as prevalent as usual for this symphony, actually outnumbering the diminished-diminished type. Another peculiarity is that the minor-minor type is less prevalent than the diminished minor.

Ninth Chords. Ninth chords are used slightly more than usual. The use of some incomplete ninth chords is typical of this symphony.

Eleventh and Thirteenth Chords. Only one eleventh chord and no thirteenth chords are found, but this is not unusual in the third symphony.

Augmented Sixth Chords. These are nearly twice as prevalent as usual for this symphony, but they are nevertheless quite rare. The predominance of the French type is typical of this symphony, but the use of the minor form of the Italian sixth chord is peculiar to this and the first movement in this symphony.

General Observations. The extensive use of the major-major seventh chord lends considerable brilliance to the movement. Because it is relatively dissonant, its prevalence has some implications of modernness.

Increased use of the diminished triad is another characteristic of the movement which tends to give it some

individuality, being particularly unusual for this symphony.

Root Movement

Table XL - Tabulation of Root Movement
Symphony Number Three - Third Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	46	12.5
By descending 2nd	43	11.7
By ascending 3rd	46	12.5
By descending 3rd	73	19.8
By ascending perfect 4th	75	20.3
By descending perfect 4th	65	17.6
By ascending or descending tritone	21	5.7
Total Number of Root Movements	369	

Tabulation of Change of Sonority	
Change of Mode	12
Change of 5th	9
Change of both 3rd and 5th	3

Root Movement by Perfect 4th. There is a substantial reduction in the use of both types of root movement by perfect 4th. Consequently, that by ascending direction maintains its position as the most prevalent type of root movement by only a very narrow margin, and that by descending perfect 4th (usually the second most common type) is actually less prevalent than root movement by descending 3rd.

Root Movement by 3rd. Both types are unusually prevalent, and both are more prevalent than either type of

root movement by 2nd. That by descending 3rd is not only more prevalent than that by descending perfect 4th, but nearly as prevalent as that by ascending perfect 4th.

Root Movement by 2nd. Although both types are overshadowed by the very extensive use of root movement by 3rd, they are only slightly less prevalent than for the entire symphony and are therefore still a significant factor in the chord progressions. The decreased use of root movement by perfect 4th also tends to give them considerable prominence.

General Observations. The extensive use of root movement by 3rd is not only unusual for this symphony but is especially in contrast to the unusually restricted use of this type of root movement in the preceding movement. It is also unusual in view of the tendency toward consistency which root movement by 3rd has in Nielsen's other symphonies.

Another unusual characteristic is the more nearly equal use of root movement by perfect 4th, by 3rd, and by 2nd.

Reduced use of root movement by perfect 4th tends to establish tonality less firmly than usual, but this seems appropriate for the scherzo-like character of the movement.

Keys

Table XLI - Tabulation of Keys
Symphony Number Three - Third Movement

Measures	Key	Comments	Part of Form
1-17	c-sharp	Natural form of minor	A (introduction)
18-19	g-sharp		
20	B	Anticipation of B part of form	
21-22	E		
23-26	G		B
27-31	b		
32-41	B		
42-47	G		C
48-49	g		
49-52	G	Mixolydian 7th	
53-46	G-g		
57	G		
58-62	G	Parts B and C used contrapuntally together	
63-65	g		
66	A-flat		
67-70	f		
71-73	C-flat		
74-77	e-flat	Fugato	B
78-80	D-flat-d-flat		
81	Uncertain		
82-83	b-flat		
84-85	g-flat	(f-sharp)	
86-88	e-flat		
89	Uncertain		
90-91	F		
92-96	a		
97-99	A		
100-104	Uncertain		
106-119	a-flat		
120-124	a-flat		D
124-127	Uncertain		
128	c		
129-130	f		
131-132	b-flat		
133-138	g		
138-142	c		
142-143	d		
144-147	d	Parts B and C together in counterpoint	
147-149	B		
150-152	e		
153-154	D		
154-156	G		

Table XLI - Continued

Measures	Key	Comments	Part of Form
157-158	d		
158-160	A-flat		
161-165	D	Parts B and D together in counterpoint	
166	Uncertain		
167-168	B-flat		
169	D	Parts C and D together in counterpoint	
170	Uncertain		
171	C-sharp		
172-176	D		
177-178	Uncertain		
179-180	Uncertain	Link based on part D	
181-185	c-sharp		
190-194	c-sharp	Like beginning of movement	A
195-197	B		
198-201	e	No tonic chord, elements of A and C	
202-206	B		
207-208	b		
209-210	C		
211-213	A-flat	Elements of parts A, B and C	Coda
214-217	G	Key not certain, no tonic chord	
218-225	c-sharp	Picardie 3rd at end	

There is a fairly even balance between the use of the major and the minor mode. Minor keys are used 25 times and major keys 22 times. This balance between the modes is interesting in view of the rather high frequency with which minor triads are used. Despite the apparent balance in the use of both modes, the aural effect of the movement, one of the movement being primarily minor in mode. Perhaps the frequent use of the minor triad is the cause of this.

A large number of different types of modulation (some to closely related keys, others to remote keys) is evident, and this is characteristic of this symphony and the two preceding ones.

Modulations to keys a minor 2nd away (the Neapolitan relationship) are used, as are those to keys a 3rd away, and also to keys a perfect 4th and to keys a tritone away.

No particular type of modulation is predominant, nor have any sequences of modulations been found.

The modulations may best be described as having a wide variety of key relationships used, but with no one type particularly being predominant.

V. THE FOURTH MOVEMENT

Introductory Comments

The fourth movement is basically in sonata form and contains the greatest amount of thematic interrelationship found in this symphony. Because small fragments of themes are developed into new themes, the movement is highly integrated in its subject matter.

The recapitulation has one marked peculiarity. In earlier movements a tendency has been found for this part of a movement to be more of a reminiscence than a literal restatement of the exposition. In the finale of the third symphony the recapitulation could be said to be a reminiscence of a reminiscence, for only one phrase of the second subject

appears in the recapitulation. This phrase is interpolated or substituted for a phrase of the first subject, and this interpolation is accomplished without change of harmony or other disruption. The interpolation in a very real sense combines elements of the two subjects into a new hybrid one. It is also typical of the composer's tendency to develop new musical ideas in the recapitulation.

This movement contains a passage forty measures long in which only two types of chords are used, the B-flat major triad and the B-flat major-minor seventh chord. The two chords appear alternately. Various contrapuntal uses of themes are found against an ostinato bass part. Static harmony was of course prominent in the preceding movement, but not with an ostinato. This movement begins a trend toward the use of static harmony with ostinati, a trend which reaches its highest point in the first movement of the fifth symphony. Once again it is possible to observe a process of growth in the composer's technique of composition, and to see evolution at work.

Chords

Table XLII - Tabulation of Chords
Symphony Number Three - Fourth Movement

Triads							
Major	64.7% 249	Minor	28.8% 111	Augmented	2.6% 10	Diminished	3.9% 15

Table XLII - Continued

Seventh Chords			
Major-minor	46.2% 90	Major-major	7.7% 15
Minor-minor	27.7% 54	Minor-major	0
Augmented-minor	0	Augmented-major	2.6% 5
Diminished-minor	10.8% 21	Diminished-diminished	5.1% 10
Ninth Chords			
Major-minor-minor	5	Major-minor-major	10
Major-(no 7th)-minor	0	Major-(no 7th)-major	3
Major-major-minor	0	Major-major-major	0
Minor-minor-minor	0	Minor-minor-major	4
Minor-(no 7th)-minor	0		
Minor-major-minor	0	Minor-major-major	0
Diminished-(no 7th)-minor			0
Eleventh Chords			
Major-(no 7th)-major-perfect			1
Diminished-diminished-(no 9th)-diminished			0
Diminished-minor-minor-perfect			1
Diminished-minor-(no 9th)-perfect			0
Minor-minor-minor-augmented			0
Minor-minor-major-augmented			0
Thirteenth Chords			
Major-minor-major-perfect-major			1

Table XLII - Continued

Augmented Sixth Chords			
Italian 1	Minor Italian 0	French 3	German 2

Chords With Added Tones	
Minor plus major 6th	4

	Number of Occurrences	Percentage All Chords
Number of Triads	385	62.6%
Number of Seventh Chords	195	31.7%
Number of Ninth Chords	22	3.6%
Number of Eleventh Chords	2	.3%
Number of Thirteenth Chords	1	.2%
Number of Augmented Sixth Chords	6	1.0%
Number of Chords with Added Tones	4	.7%
Total Number of Chords	615	

Triads. Triads are only slightly less prevalent than for the entire symphony, and the deviation is not significant. However, the balance between the four types of triads is quite unusual. The major triad is considerably more prevalent than usual, in fact, of the six symphonies, only the finale of the second symphony contains a higher proportion of this type of triad. Both the minor and the diminished triad are considerably less prevalent than usual. This contrasts considerably with the third movement where these two types of chords are unusually prevalent - especially the diminished triad.

It is interesting to note that the entire tabulation of triads of this movement resembles very closely that for

the finale of the second symphony. Extensive use of the major triad contributes considerably to the brilliance which both of these movements have.

Seventh Chords. Although the total per cent of seventh chords is quite close to the average for this type of chord in this symphony, the statistics for the individual types are quite unusual. The tabulation resembles those found in the first symphony more than any other movement of either the third or the second symphony. The very extensive use of the major-minor seventh chord, with reduced use of the minor-minor, diminished-minor, and diminished-diminished types is in opposition to the trend of the third symphony. It must be considered regressive in implications, the tabulation being more typical of a considerably earlier time.

Ninth Chords. Ninth chords are slightly more prevalent than in any other movement of this symphony or of the first, second, or fourth symphonies. This compensates somewhat for the rather conservative use of seventh chords, and of course contributes some brilliance to the movement.

Root Movement

There are only two types of root movement which vary significantly in prevalence from the norm of this symphony. Root movement by ascending perfect 4th is slightly more prevalent than usual, and that by descending 2nd, less so. The expected result would be a more emphatically established tonality than usual, quite normal for a last movement since finality is essential.

Table XLIII - Tabulation of Root Movement
Symphony Number Three - Fourth Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	71	13.0
By descending 2nd	54	9.9
By ascending 3rd	44	8.1
By descending 3rd	80	14.7
By ascending perfect 4th	167	30.6
By descending perfect 4th	119	21.8
By ascending or descending tritone	11	2.0
Total Number of Root Movements	546	

Tabulation of Change of Sonority	
Change of Mode	12
Change of 5th	6
Change of both 3rd and 5th	0

The root movement of the fourth movement tends to re-establish the norm of the symphony after the considerable deviations of both the second and third movements.

The complete absence of change of 3rd and 5th, and the rareness of both change of mode and change of 5th give an accurate clue to the movements style. It is very diatonic, with very little ambiguity of mode - characteristics which lend finality to the movement.

Keys

Table XLIV - Tabulation of Keys
Symphony Number Three - Fourth Movement

Measures	Key	Comments	Part of Form
1-16	D	Subject I	Exposition
17-20	d		
21-33	D		
34-35	D	Mixolydian 7th, altered chords	
36-38	e		
39-40	C		
40-48	D		
48-50	E-flat		
50-53	D-flat		
53-58	F		
59-61	B-flat		
62-69	b-flat	Subject II	
70-71	c-sharp		
72-73	A		
74-76	B	No tonic chord	
77-79	Uncertain		
80-88	f-sharp		
89-90	e	Natural minor	
91-93	A		
93-104	F-sharp		
94-96	F-sharp	Phrygian	
104-106	F-sharp		
106-113	Uncertain	Unison passage with melodic sequence link	
114-121	E-Mixolydian	(both melodically and harmonically)	Development Section
122-129	a-Dorian		
130-133	d-Dorian	G-Mixolydian in French horn, polymodality	
134-138	G (major)		
139-141	b-Dorian		
142-147	B (major)		
148-149	e		
150	D		
151-152	C		
153-157	G		
158-159	c-Dorian		
160-161	A-flat		
162-163	f-Dorian		
164-165	e-flat		
166-169	F		

Table XLIV - Continued

Measures	Key	Comments	Part of Form
170-171	A-flat		
172	f		
173	Uncertain,	moving towards E	
174-206	E	Subject I in augmentation	
207-209	b	Natural form of minor fugato based on elements of Subject I	
210-212	e		
213-215	d		
216-218	Uncertain,	chromatic	
219-225	b-flat		
226-277	B-flat	Mixolydian 7th, static harmony	
278-280	g		
281	g	New fugato based on section of Subject I, answers at minor 3rd above, 5th above, and 4th above	
282-283	G		
284-285	d		
285-288	a		
289-291	b		
292-294	G		
295	C		
296-298	a		
299-300	F		
300-303	E-flat		
304	g		
305-306	B-flat		
307-308	E-flat		
309-312	C-flat		
313-314	A-a		
315-322	A		
323-331	A	Subject I at Dominant	Recapitulation and Coda (no separation)
332-334	D		
335-340	A	Two measures of subject II inserted, measures 340-41	
341-342	a		
343-349	A		
350-353	g		
354	f-sharp		
355	B		
356	e		
357-358	d		
358-359	a		
360-378	A		

Modal writing is very prominent in this movement. Not only is the Mixolydian 7th used (as in other movements) but the Dorian, and Phrygian modes as well. The use of the Phrygian mode has not been found in any other movement of either this, or the two preceding symphonies. Since this mode was used by Brahms in his fourth symphony, it cannot be considered a unique development of Carl Nielsen, but the increased use of modes in general is quite typical of many twentieth-century composers. For this reason, the fourth movement is modern and progressive in this respect.

Because of the considerable interest in modal writing, several examples are given below.

Example 19 (measures 94-97) shows the composer's use of the Phrygian mode. The first measure establishes F-sharp as the tonality, and the following two measures (using only tones found in the F-sharp Phrygian mode) establish the Phrygian mode. Although the Phrygian mode is clearly present, the function is that of altered chords in the key of F-sharp major, the chords being borrowed from the parallel Phrygian mode.

Example 20 contains several characteristics of interest. First, D Dorian is prominent in the upper part as well as the harmony. Second, the inner part seems to be trying to establish G Mixolydian as the tonal center. Thus there is an element of polymodality present in the passage. It will also be seen that the scales of G Mixolydian and D Dorian contain the same tones. Because of this the ambiguity is complete.

Although the harmony is quite traditional, the freedom of the counterpoint suggests a step in the direction of pandiatonicism. This type of writing becomes more prevalent in the later symphonies, and Example 20 may be considered the antecedent of the polytonality found in the last three symphonies.

The tabulation indicates that there is a marked tendency in this movement toward the use of closely related keys. Modulations to keys with one or two accidentals change are especially common. Modulations in 3rd relation (with a change of three or four accidentals) are used but not nearly as frequently.

Change of mode (in modulation) is quite common. The use of modes causes some interesting modulations of this type. The modulation from F Dorian to E-flat minor (measure 164) is a modulation to a closely related key (having the same number of accidentals), E-flat major, but with change of mode so that E-flat minor is reached instead of E-flat major. Similarly the modulation from E Mixolydian (measure 121, having the same number of accidentals as A-major) to A-major (measure 122) is modulation to a closely related key but with change of mode when the new tonic is reached.

The general trend of the movement towards the use of rather closely related keys is in considerable contrast to the preceding movement and also to the corresponding movement (the Finale) of the preceding symphony. From this it may be surmised that the composer uses balance within a symphony by writing some movements with complicated modulations and others with simpler ones. No particular trend is found for individual movements (first, second, third, or fourth movements) as such, but each varies according to the needs (in balance) of the symphony.

CHAPTER VI

SYMPHONY NUMBER FOUR - DET UUDSLUKKELIGE (1914-1916) (The Inextinguishable)

I. THE SYMPHONY AS A WHOLE

Introductory Comments

The title of the fourth symphony suggests that there might be a programatic element in the work, and in this case the suggestion proves to be true. The symphony begins with turbulent, dissonant, sometimes nearly atonal passages. From this chaos a hymn-like theme emerges. This theme is very much in contrast to the preceding passage, being very consonant, tonal, and orderly. The style is very similar to that of the nineteenth-century hymn and suggests something noble. The effect (although not the actual harmony or melodic line) seems akin to The Hymn of Joy of Beethoven's ninth symphony. As might be expected, the hymn-like theme closes the first movement, triumphing, so to speak, over chaos. This theme also concludes the last movement, the first cyclical use of a theme in these six symphonies. Although cyclical use of themes was by no means revolutionary at the time the fourth symphony was written, its use does imply another step

in the direction of greater thematic integration and closer interrelationship between movements than has been found in the preceding symphonies.

Links are used to connect the four movements. Although the third and fourth movements are separated by a grand pause of one measure, the separation is not complete. The third movement ends with a link that is not thematically related to either the third or the fourth movement. This link ends with a scale passage in thirty-second notes and the tonic is not reached until the second half of the last beat in the last measure - a most inconclusive ending. The grand pause therefore acts more as an interruption of the music's flow than as a clear separation between movements.

As was the case in the three preceding symphonies, the first and last movements are the longest and contain the greatest amount of thematic developments. As in the second symphony, the second movement (Poco Allegretto) is faster in tempo than the third movement (Poco adagio quasi andante), but unlike the second symphony, the second movement is not especially like a scherzo. The finale contains a scherzo-like theme which supplies the element lacking in the second and third movements.

As in the second symphony, the programatic element is contained within the work but does not usurp the over-all form. The fourth symphony is clearly a symphony in four movements. The programatic element affects the content (characteristics of themes) but not the form.

There are a number of technical features which distinguish the fourth symphony from those that preceded it. The tritone is used both melodically and harmonically to a greater extent than in any of the first three symphonies. Parallel writing (chords moving upwards or downwards in parallel motion) is prominent in the first movement. This is of course a device cultivated by the French Impressionists, especially by Debussy. Unlike Debussy, Nielsen uses this type of writing sparingly. It may be regarded as a new technique incorporated into the style but is of rather secondary importance in the over-all texture of the music.

Changes of meter are more frequent than in any of the three earlier symphonies. In the first movementthere is a change from cut time (alla breve) to five-two meter, followed two measures later by a change to three-two meter. Such frequent change of meter as well as the use of quintuple meter are particularly typical of twentieth-century practices. They therefore constitute further evidence of progress in the style of the composer.

Chords

Table XLV - Tabulation of Chords
Symphony Number Four - Totals from All Movements

Triads							
Major	54.5% 771	Minor	36.2% 512	Augmented	1.9% 27	Diminished	7.4% 104

Table XLV - Continued

Seventh Chords			
Major-minor	32.4% 171	Major-Major	7.6% 40
Minor-minor	28.3% 149	Minor-major	1.5% 8
Augmented-minor	1.0% 5	Augmented-major	1.0% 5
Diminished-minor	16.5% 87	Diminished-diminished	11.6% 61
		Diminished-major	.2% 1

Ninth Chords			
Major-minor-minor	3	Major-minor-major	8
		Major-(no 7th)-major	8
Minor-minor-minor	1	Minor-minor-major	6
Minor-(no 7th)-major	3	Minor-major-major	1
Diminished-diminished-minor			1
		Diminished-minor-major	2
Diminished-minor-minor	4	Diminished-(no 7th)-major	2

Eleventh Chords			
Major-minor-major-perfect	1	Major-minor-major-aug.	1
Minor-minor-major-perfect	1	Minor-minor-(no 9th)-perfect	1
Diminished-minor-major-perfect			1

Thirteenth Chords	
Major-(no 7th)-major-(no 11th)-major	3
Major-minor-major-perfect-minor	1
Minor-major-(no 9th)-perfect-minor	1

Table XLV - Continued

Augmented Sixth Chords		
Italian 4	French 7	German 6

Chords with Added Tones	
Major-minor seventh chord with augmented 4th	1

	Number of Occurrences	Percentage All Chords
Total Number of Triads	1414	70.4%
Total Number of Seventh Chords	527	26.2%
Total Number of Ninth Chords	39	1.9%
Total Number of Eleventh Chords	5	.2%
Total Number of Thirteenth Chords	5	.2%
Total Number of Augmented Sixth Chords	17	.8%
Total Number of Chords with Added Tones	1	.1%
Total Number of Chords	2008	

Triads. Triads are more prevalent in the fourth symphony than in any of the other five symphonies. There has been a steady increase in this type of chord from the second symphony on. A peak is reached in the fourth symphony, followed by a sharp decrease in the fifth symphony.

The percentage of major and minor triads is not unusual, both being intermediate or between those found in the second and third symphonies.

The diminished triad is more prevalent than in any of the three preceding symphonies. This continues an unbroken trend of such increase beginning with the second symphony.

The augmented triad is rarer than in the second or in the third symphony, but not by a very significant amount.

Seventh Chords. Seventh chords are less prevalent than in any of the other five symphonies. There has been a steady decrease from the first symphony on.

The tabulations for the individual types of seventh chords resemble those of the third symphony very closely. The most important differences are: more extensive use of the minor-minor type (more so in fact than in any of the three preceding symphonies), and decreased use of the diminished-minor (but not to as low a total as found in the first or second symphonies).

Ninth Chords. Although there is no notable change in the use of ninth chords, three new types are found (not used in the preceding symphonies). These three are all based on the diminished triad. They are: the diminished-diminished-minor, the diminished-minor-minor, and the diminished-minor-major. The development of these three types must be regarded as a progressive factor constituting a slight expansion in the over-all chord texture of the symphony.

Eleventh Chords. There is a slight decrease in the use of eleventh chords, and no new types have been developed.

Thirteenth Chords. There is a slight increase in the use of thirteenth chords. The two preceding symphonies each contained only one occurrence of a thirteenth chord, and both chords were based on the major triad. The minor-major-

(no 9th)-perfect thirteenth chord of this symphony is not found in any of the preceding symphonies. The use of an incomplete thirteenth chord is also peculiar to the fourth symphony, but a natural outgrowth of the trend toward the writing of incomplete ninth chords.

Augmented Sixth Chords. These are actually less prevalent than in any of the preceding symphonies but not by a significant amount. There is a fairly even balance between the Italian, French, and German types, but no augmented sixth chords based on the minor triad are used (they were found in the second and third symphonies).

General Observations. The increased use of triads and the decreased use of seventh chords found in the fourth symphony, although following a trend of the composer, are not especially typical of twentieth-century practices. They therefore of themselves constitute a conservative factor in the chord texture.

Another conservative factor is the rather restricted use of ninth, eleventh, and thirteenth chords.

However, the use of whole tone scales, nearly atonal passages, and extensive use of disjunct melodic lines (to be discussed in connection with the movements in which they occur) compensates somewhat for the rather conservative harmonic vocabulary found in this symphony.

Root Movement

Table XLVI - Tabulation of Root Movement
Symphony Number Four - All Movements

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	319	17.9%
By descending 2nd	302	16.9%
By ascending 3rd	178	10.0%
By descending 3rd	241	13.5%
By ascending perfect 4th	361	20.3%
By descending perfect 4th	320	18.0%
By ascending or descending tritone	61	3.4%
Total Number of Root Movements	1782	

Tabulation of Change of Sonority	
Change of Mode	55
Change of 5th	32
Change of 3rd and 5th	11

Root Movement by 2nd. Both types of root movement by 2nd are more prevalent than in any of the preceding symphonies. That by ascending 2nd is only one tenth of a per cent less frequently used than root movement by descending perfect 4th, considerably closer than in any of the preceding symphonies.

Root Movement by 3rd. The total amount of root movement is identical in per cent to that found in the second symphony, and only one tenth of a per cent less than in the third symphony. However, the balance (in per cent) between the two types is more nearly equal than in any of the preceding symphonies.

Root Movement by Perfect 4th. Although root movement by ascending perfect 4th remains the most prevalent of all types, and that by descending perfect 4th the next most prevalent type, there is a notable reduction in the use of both. Both are less prevalent than in any of the preceding symphonies.

Root Movement by Tritone. The frequency with which this is used is nearly identical to that found in the second symphony, and only one half of one per cent less than that found in the third symphony. Root movement by tritone, the rarest type of root movement, remains very consistent in amount of use from the second symphony through the fourth.

General Observations. The decreased use of root movement by perfect 4th and the increased use of that by 2nd found in the fourth symphony continue a trend. This trend was broken only slightly by the third symphony, which contained slightly more root movement by perfect 4th than the second symphony did.

It is quite evident that the composer does not rely on prevalence of traditional (or normal) chord progressions to establish tonality, for the ascending and descending types of each interval of root movement (by 2nd, 3rd, perfect 4th) are in each case nearly equal in prevalence. Considerable interest will therefore center around the means used to preserve tonality in each of the four movements, especially in those movements where the root movement tabulations resemble the norm of this symphony.

II. THE FIRST MOVEMENT

Introductory Comments

The first movement is in sonata form, as were the first movements of each of the preceding symphonies. There are clearly two subjects of contrasting character. The first subject, in D minor, is turbulent in character, sometimes rather dissonant, and contains prominent melodic use of the tritone. The second subject is hymn-like in character, generally very consonant, and is harmonized mostly with triads and chord progressions that are within the style of nineteenth-century hymn writing.

Unlike the corresponding movement of the third symphony, the recapitulation is clearly distinguishable from the bridge passage preceding it, and both subjects are more clearly restated. The form is therefore more traditional than that of the first movement of the third symphony.

Despite this conservative element in the form, the content of the music shows considerable growth in a more modern direction.

Example 21 shows the beginning of the symphony. The tritone relationship (between tones A and E-flat in the example) is one of the most salient features of the first subject of this movement. As a melodic interval, the tritone is used more prominently and extensively in this movement than in any of the preceding symphonies.

It will be noted that the tritone relationship in the passage above is between the 5th scale step (A) and the lowered 2nd scale step (E-flat) of the prevailing tonality, D minor.

The Neapolitan chord (major triad with root on the lowered second scale degree and usually resolving to the dominant triad or chord) had, of course, been used by composers of the Baroque era and continued to be used by composers of the nineteenth century. It had become well enough accepted to be regarded as an altered chord and within the expanded concept of tonality.

Since the chord progression of the Neapolitan Chord to a dominant chord was well established when the fourth symphony was written, the melodic use of the roots of these two chords (in the passage under discussion) is readily accepted as a part of the prevailing tonality (D minor).

Thus, although the prominent melodic use of the tritone is in itself modern, Nielsen's use is conservative because it preserves rather than destroys the tonality. This distinguishes the harmonic style of Carl Nielsen from those of Schoenberg and other composers that use the tritone atonally.

Example 22 is the beginning of the second subject of this movement. The hymn-like characteristics of this theme are quite apparent in the melodic line. The use of the pedal point (the tone E, played by the viola in the example above) is characteristic of this as well as all of Nielsen's symphonies. Both the melodic line (played by the two clarinets) and the counter melody (played by the bassoon) are developed extensively in the development section of this movement. Such development of both themes and their counter melodies is characteristic of Nielsen's symphonies, but this is done more extensively in the third, and fourth symphonies than in the first and second.

Example 23 above is from an early part of the development section. The rhythmic pattern is that of a passage in the second subject, and the melodic interval of the tritone is taken from the first subject. The extremely disjunct nature of the melodic line is typical of the fourth symphony

and is not found in the earlier symphonies. This type of writing is of course quite characteristic of many twentieth-century compositions. Its use therefore clearly indicates growth along quite modern lines in the style of the composer.

Although the melodic line is modern in concept, the pedal point on D and the prominence of the tones D and A in the melodic line preserve to an extent the tonality of D minor. This is another example indicating that the composer does use modern techniques of composition but tends to use them in a manner that preserves tonality.

Ex. 24

Example 24 shows prominent use of root movement by descending 2nd. Unlike the typical use of the impressionists such as Debussy, the chords are not all of like mode and parallel 5ths are scrupulously avoided. The effect seems more related to the ancient faux bourdon, especially because of the parallel 4ths and inversion of the chords. Although the chords D, C, B-flat, and A-flat (all major) are not found in any one key, the pedal point E tends to maintain a vestige of tonality, causing the chords to sound nonfunctional (in this case in the nature of passing chords). Nevertheless, the chords sound almost polytonal against the pedal point,

especially the B-flat and A-flat major chords. This foreshadows the genuine polytonality of the fifth and sixth symphonies.

A sequence of root movement by descending 3rd is found in Example 25. The chords are all diatonic, being contained within a seven note traditional scale. Although they may all be found in B-flat minor, F minor is the prevailing tonality and the G-flat major triad may for this reason be considered to be a Neapolitan chord in this key. This serves as another example demonstrating the composer's tendency to cling tenaciously to tonality.

Chords

Table XLVII - Tabulation of Chords
Symphony Number Four - First Movement

Triads							
Major	55.8% 270	Minor	35.7% 173	Augmented	.8% 4	Diminished	7.6% 37

Seventh Chords			
Major-minor	30.2% 68	Major-major	7.1% 16
Minor-minor	31.6% 71	Minor-major	2.7% 6

Table XLVII - Continued

Seventh Chords - Continued			
Augmented-minor	1.3% 3	Augmented-major	.9% 2
Diminished-minor	15.1% 34	Diminished-diminished	10.7% 24
		Diminished-major	.4% 1
Ninth Chords			
Major-minor-minor	2	Major-minor-major	3
		Major-(no 7th)-major	2
Minor-minor-minor	0	Minor-minor-major	3
Minor-(no 7th)-major	0	Minor-major-major	1
Diminished-diminished-minor	0	Diminished-minor-major	1
Diminished-minor-minor	0	Diminished-(no 7th)-major	0
Eleventh Chords			
Major-minor-major-perfect	0	Major-minor-major-aug.	0
Minor-minor-major-perfect	0	Minor-minor-(no 9th)-perfect	0
Diminished-minor-major-perfect			0
Thirteenth Chords			
Major-(no 7th)-major-(no 11th)-major			0
Major-minor-major-perfect-minor			0
Minor-major-(no 9th)-perfect-minor			0
Augmented Sixth Chords			
Italian 3	French 0	German 1	

Table XLVII - Continued

Chords with Added Tones	
Major-minor seventh chord with augmented 4th	1

	Number of Occurrences	Percentage All Chords
Number of Triads	484	66.7%
Number of Seventh Chords	225	31.0%
Number of Ninth Chords	12	1.7%
Number of Eleventh Chords	0	0.0%
Number of Thirteenth Chords	0	0.0%
Number of Augmented Sixth Chords	4	.6%
Number of Chords with Added Tones	1	.1%
Total Number of Chords	726	

Although the first movement contains a higher percentage of seventh chords than any other movement in this symphony, the percentage is not unusually high in comparison to movements of the third symphony, being quite close to the over-all average for this chord in that work. Similarly, although the first movement contains a lower percentage of triads than any other movement of this symphony, the figure is quite close to the average for this type of chord found in the third symphony.

Both triads and seventh chords gain some additional prominence by the rareness of ninth chords and augmented sixth chords, also by the total absence of eleventh and thirteenth chords.

The absence of the more complex chord types not only tends to emphasize triads and seventh chords, but also draws attention to the peculiarities of the melodic writing as well.

The absence of eleventh and thirteenth chords in the second subject can be explained on the basis of style; the hymns of the nineteenth century did not tend to contain such chords. Their use would therefore have destroyed the most saliant feature of this theme.

The minor-minor type seventh chord is used more in this movement than the major-minor. The margin of difference is very slight, but the results are nevertheless significant, a clear indication of the demise of the major-minor seventh chord which was so prevalent in the nineteenth century.

Although there is only one occurrence of a chord with an added tone, it is a significant one because of its type. This is the composer's first use in a symphony of a chord with an added augmented 4th (or tritone). Its use is clearly related to the prevalence of the tritone as a melodic interval. Although the melodic use was quite conservative in function, being within the established tonality, the harmonic use of this interval as an added tone is more progressive and typical of twentieth-century practices.

Root Movement

Root movement by descending 3rd is used more than that by descending perfect 4th, and is only 1 per cent less prevalent than that by ascending perfect 4th. Similarly, great prevalence of root movement by descending 3rd was found in the third movements of the first and third symphony,

Table XLVIII - Tabulation of Root Movement
Symphony Number Four - First Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	129	20.3%
By descending 2nd	92	14.5%
By ascending 3rd	65	10.2%
By descending 3rd	115	18.1%
By ascending perfect 4th	122	19.2%
By descending perfect 4th	91	14.3%
By ascending or descending tritone	22	3.5%
Total Number of Root Movements	636	

Tabulation of Change of Sonority	
Change of Mode	30
Change of 5th	12
Change of 3rd and 5th	2

and in the latter the relationship to the two types of root movement by perfect 4th was also nearly identical. It is nevertheless an unusual phenomenon and noteworthy as such.

Another peculiarity is that root movement by ascending 2nd is the most prevalent type of root movement. The unusual prevalence of this type of root movement is partly the result of extensive use of parallel harmony by ascending 2nd. Both the extensive use of root movement by 2nd and the parallel harmony contribute considerably to the generally modern sound of the movement.

Still another unusual feature is the closeness in percentage of the three most commonly used types of root

movement (by ascending 2nd, ascending perfect 4th, and descending 3rd). There is only 2.2% difference in the use of root movement by ascending 2nd and that by descending 3rd.

One less progressive element found in the tabulation is the restricted use of root movement by tritone, although this is typical of this symphony and the preceding ones.

The expected results of such a tabulation as this would be a considerably less firmly established tonality than has generally been found in the earlier symphonies. Although the use of static harmony, especially pedal points, tends to offset this in many cases, the over-all effect is nevertheless quite modern.

Keys

Table XLIX - Tabulation of Keys
Symphony Number Four - First Movement

Measures	Key	Comments	Part of Form
1-6	d	First subject	Exposition
7-10	B-flat		
11	b-flat		
12-14	C		
15-16	b-flat		
17-22	C		
23-24	e		
25	d		
26	g		
27	a		
28	d	No tonic chord	
29	e	No tonic chord	
30	Uncertain	Chord plaining	
31	A-flat		
32-33	e		
34-36	E		
37	a		

Table XLIX - Continued

Measures	Key	Comments	Part of Form
38-47	Uncertain	Melodic tritones and non tonal chord sequences	
48-50	a		
51-55	A	Second subject	
57-58	F		
59	d		
60	e	No tonic chord	
61	d		
62	e	No tonic chord	
63-65	f		
66	c-sharp	Natural minor	
67-71	A		
72-76	Uncertain	Dim.-dim. and dim.-minor seventh chords	
77-79	b	Deceptive cadence	
80	D		
81	c-sharp	No tonic chord	
82	Uncertain	Chord plaining	
83	a	No tonic chord	
84	A		
85	a		
86	E-flat		
87-94	Uncertain	Chromatic	
95-96	g-sharp		
97-100	E	Second subject in march style	
101-102	f		
103	F		
104-106	f-sharp		
107	F-sharp		
108-110	B		
111-112	f (or b-flat)		
113-117	C	Tempo primo	
118-119	a		
120	c		
121-142	A		(end of exposition)
143-152	A	Obscured somewhat by chromatic grace notes	(Link)
153-189	d	Melodic tritones, against pedal tone on D.	Development section
190-195	Uncertain	Tritone figure and arpeggio on e triad	
196-202	Uncertain	Tritone figure and arpeggio on F triad	
203-215	Uncertain	Tritone figure and arpeggio on F-sharp triad	

Table XLIX - Continued

Measures	Key	Comments	Part of Form
216-217	Uncertain	e arpeggio in bass	
218-219	Uncertain	E arpeggio in bass	
220-221	Uncertain	g-sharp arpeggio in bass	
222-223	c-sharp	Dominant and tonic arpeggios in bass	
224	C-sharp	Arpeggio in bass	
225-226	Uncertain	D-flat arpeggio in bass	
227-228	Uncertain	f arpeggio in bass	
229	Uncertain	F and f-sharp arpeggio in bass	
230-231	a or D-Mixolydian	More tonal than preceding	
232-233	B	Authentic cadence	
234-235	A-a		
236-243	A-flat	Obscured by foreign chords	
244-248	b-flat	Very clear, half cadence	
249-251	F	Clear tonality	
252-255	B	Second subject, oboes	
255-258	E-flat	Second subject, clarinets	
259-264	Uncertain	Sequence of chords descending by 3rds	
265-267	f-sharp	Tonality clear	
269-272	E-flat	Mixolydian 7th	
273-274	e-flat		
275-279	Uncertain	Sequence of chords descending by 3rds	
280-290	G	Parallel harmony, but all chords in G	
291-292	e-flat		
293-297	Uncertain	Parallel harmony within A-flat but not establishing any key	
298-316	C	Pedal point on tonic against parallel harmony, but all chords in key	
317-320	F	Pedal point, now dominant harmony	(development section)
321-331	C		
332-340	d	Clear tonality, elements of first subject	Link
341-345	d-D	First subject	Recapitulation
345-351	B-flat	Mixolydian	
352	d		

Table XLIX - Continued

Measures	Key	Comments	Part of Form
353-356	e		
357-359	a		
360-361	A	Incomplete chords but within key	
362-366	D-flat		
367-368	d-flat		
369-370	e-flat		
371	g		
372-377	f		
378-387	f-sharp	Second subject	
385	a		
386-408	E		
409-411	Uncertain	Mostly 3rd relation	Link to next movement
412-415	d	Chords all in key, two part harmony	

Because of the rather unusual modulation scheme of this movement a special chart has been prepared which indicates the number of times each type of modulation is used. The term "close key" means that a change of not more than one accidental is involved. The term "foreign modulation" means that a change of two or more accidentals is involved in the modulation. Only modulations to keys that are certain have been tabulated. The chart is given below.

It is interesting to note that the extensive use of root movement by 2nd (previously discussed) in this movement of the symphony is accompanied by an extensive use of modulations between keys also a 2nd apart.

Table L - Type of Modulation
and Number of Occurrences

Type of Modulation	Number of Occurrences	Percentage
Change of mode	11	16.2%
By 2nd (close key)	1	1.5%
By 2nd (foreign key)	21	30.9%
By 3rd (close key)	11	16.2%
By 3rd (foreign key)	7	10.3%
By perfect 4th (close key)	9	13.2%
By perfect 4th (foreign key)	5	7.4%
By augmented 4th (like mode)	1	1.5%
By augmented 4th (unlike mode)	2	2.9%
Total number of modulations by 2nd	22	32.4%
Total number of modulations by 3rd	18	26.5%
Total number of modulations by perfect 4th	14	20.6%
Total number of modulations by augmented 4th	3	4.4%
Total number of close modulations	21	30.9%
Total number of foreign modulations (not counting change of mode)	36	52.9%
Total number of modulations	68	

Modulation by tritone is used about as rarely as root movement of the same interval, another interesting consistency.

Modulations by perfect 4th are used less than either those by 2nd or by 3rd. Although this is not paralleled in the study of root movement (root movement by perfect 4th was the second most often used type of root movement) there is a general trend toward decreased use of both modulations and root movement by perfect 4th.

An examination of the statistics concerning the relative frequency with which close and foreign modulations are used shows that foreign modulations are very prevalent in

this movement, accounting for over half of the total of all modulations. (Change of mode was not counted as either a close or a foreign modulation because the expanded concept of tonality of the twentieth century makes it questionable whether it is a modulation at all.)

Tonality. The first movement of this symphony shows a considerable growth in the concept of tonality and the ways in which it is used. In places where extensive use of root movement by 2nd and 3rd tend to establish tonality less forcefully than that by perfect 4th, the composer compensates for this by using diatonic triads within the prevailing key. In chromatic passages that do not use traditional chord progressions, pedal tones are generally found and these help in maintaining tonality.

Although sequences of chords may be found which do not remain in any one key, such sequences generally are part of a modulation where a new key becomes clearly established.

Although the chordal texture of the music is relatively simple, containing mostly triads and seventh chords, considerable dissonance is achieved by the use of nonharmonic tones as well as by the prevalence of the tritone as a melodic interval.

Because of the various peculiarities of this movement (unusual root movement, foreign modulations, use of tritone, and parallel harmony), the over-all effect of the movement is considerably more modern than any movement in any of the preceding symphonies.

III. THE SECOND MOVEMENT

Introductory Comments

The second movement (poco allegretto) is not a scherzo but is of similar character and function, being light, playful, and simple in form in contrast to the heavy and complex nature of the preceding movement. The third movement is slow and of a grave or tragic character. This inversion in the classical order of the two inner movements was found in the second symphony and will also be found in the sixth symphony; it is therefore not unusual for the composer.

The form of the movement is AA^1BA, (A^1 is a development of A). It is therefore episodical in form but with some development of the first theme. Although no cyclical use of a theme is found in this movement, theme A is stylistically similar to the second subject of the preceding movement. Both the chords used (mostly triads and some seventh chords) and the chord progressions are very traditional, resembling those of nineteenth-century hymns. The use of duple meter, the rhythmic patterns, as well as the prominent use of woodwinds without strings create a slight suggestion of a military march. A third stylistic element found in this movement is the prominence of the Mixolydian 7th, and this is of course more typical of Carl Nielsen than it is of either marches or hymns. The movement is thus a subtle blending of several stylistic elements and is quite distinctively different from any movement preceding it in this or the three earlier symphonies.

It is possible that the elements of the military march portray war (the first world war was in progress at the time this symphony was written), with the third movement portraying the anguish and suffering involved in war, and the last movement depicting the triumph of something inextinguishable in mankind which overcomes all adversity. The discussion of such a topic, though interesting, is clearly beyond the scope of this investigation and is only mentioned for the benefit of the reader who may wish to pursue it further.

Chords

Table LI - Tabulation of Chords
Symphony Number Four - Second Movement

Triads			
Major	59.2% 157	Minor	33.6% 89
Augmented	.8% 2	Diminished	6.4% 17
Seventh Chords			
Major-minor	21.2% 18	Major-major	9.4% 8
Minor-minor	27.1% 23	Minor-major	0
Augmented-minor	0	Augmented-major	1.2% 1
Diminished-minor	21.2% 18	Diminished-diminished	20.0% 17
		Diminished-major	0
Ninth Chords			
Major-minor-minor	0	Major-minor-major	2
		Major-(no 7th)-major	0
Minor-minor-minor	0	Minor-minor-major	1

Table LI - Continued

Ninth Chords - Continued			
Minor-(no 7th)-major	0	Minor-major-major	0
Diminished-diminished-minor	0	Diminished-minor-major	0
Diminished-minor-minor	0	Diminished-(no 7th)-major	0
Eleventh Chords			
Major-minor-major-perfect	0	Major-minor-major-aug.	0
Minor-minor-major-perfect	0	Minor-minor-(no 9th)-perfect	0
Diminished-minor-major-perfect			0
Thirteenth Chords			
Major-(no 7th)-major-(no 11th)-major			0
Major-minor-major-perfect-minor			0
Minor-major-(no 9th)-perfect-minor			0
Augmented Sixth Chords			
Italian 0	French 1	German 0	
Chords with Added Tones			
Major-minor seventh chord with augmented 4th			0

	Number of Occurrences	Percentage All Chords
Number of Triads	265	74.9%
Number of Seventh Chords	85	24.0%
Number of Ninth Chords	3	.8%
Number of Eleventh Chords	0	
Number of Thirteenth Chords	0	
Number of Augmented Sixth Chords	1	.3%
Number of Chords with Added Tones	0	
Total Number of Chords	354	

Superficially, the chord texture of this movement resembles that of the preceding movement. The triad is statistically very predominant, the seventh chord is next most prevalent, and all other types of chord are either rare or nonexistent. It is the balance between triads and seventh chords which suggests the style of the nineteenth-century hymn.

A closer examination of the tabulation of seventh chords indicates that there are definite deviations from the practices of the preceding movement and from hymn writing of the nineteenth century as well. The major-minor type seventh chord is even less prevalent than in the preceding movement, but there is considerable increase in the use of both types of diminished seventh chord. The diminished-minor type actually equals the major-minor type in frequency of use, and the diminished-diminished type is used only slightly less than these.

The fact that the minor-minor type seventh chord is the most-used type and that the two types of diminished seventh chords are each as prevalent as they are clearly indicates deviations from the general practices of nineteenth-century hymn writing, deviations in a more modern direction.

It is interesting to note that the major-major type seventh chord remains quite rare. Since it is more dissonant than the types which predominate in this movement, if it had been used extensively this would have been quite noticeable

and undoubtedly would have destroyed the hymn-like quality of the music. Thus, although there are differences in the amount of use of several types of seventh chord (in comparison to the nineteenth-century hymn), the predominant types are all of a less dissonant nature and not particularly conspicuous.

Since the term "neo" has currently been quite in vogue, one could conceivably refer to the style of this movement as an example of neo-nineteenth-century hymn writing, but this writer does not necessarily endorse such a nomenclature!

Root Movement

Table LII - Tabulation of Root Movement
Symphony Number Four - Second Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	74	22.1%
By descending 2nd	71	21.2%
By ascending 3rd	24	7.2%
By descending 3rd	30	9.0%
By ascending perfect 4th	68	20.3%
By descending perfect 4th	57	17.0%
By ascending or descending tritone	11	3.3%
Total Number of Root Movements	335	

Tabulation of Changes of Sonority

Change of Mode	6
Change of 5th	12
Change of 3rd and 5th	6

Root movement by 2nd is even more prevalent in this movement than it was in the preceding one, especially that by descending 2nd. Consequently, each of the two types of root movement by 2nd is more prevalent than either type of root movement by perfect 4th, a practice that is certainly alien to most nineteenth-century hymn writing. This would seem to contradict the idea that this style is present, but there are several reasons why this unusual root movement does not seem out of the style. Root movement by 2nd is very often used in a traditional manner (in progressions that are normal in the traditional sense). Alternations between the tonic and the leading tone triad, for example, are entirely traditional chord progressions and within the style. Another factor contributing to the high content of root movement by 2nd is the occasional appearance of passages containing rapid oscillations between two chords with roots a 2nd apart. An example of this type of writing is given directly below in Example 26.

On the first and third sixteenth notes of the first and second beats of measure 26, a complete E-flat major triad in first inversion is sounding. On the second and fourth

sixteenth notes of these same beats, an F-sharp diminished-diminished seventh chord sounds against the pedal G in the lowest part. Although the tones F-sharp and A would seem to be neighboring tones, the tone C (in the middle stave of the example) is approached by a descending perfect 5th, implying that it is an essential chord tone. The fact that the tone C is not a part of the E-flat triad (found on the first and third sixteenth notes) further strengthens the position that the F-sharp chord is essential harmony that moves in a very rapid harmonic rhythm (by sixteenth notes). Because both the E-flat triad and the F-sharp diminished-diminished seventh chord are complete, because C is not common to the first chord, and because C is approached by a wide interval, both chords have been counted as essential harmony.

On the third beat of measure 26 a similar situation occurs which involves alternations between an E diminished triad in first inversion and an F-sharp diminished-minor seventh chord. In this case the root movement is by ascending and descending 2nd and accounts for some of the prevalence of this type of root movement. Although root movement by 3rd was found on the first and second beats, this type of root movement is considerably rarer in passages of more normal harmonic rhythm and consequently remains less prevalent in this movement than that by 2nd.

On the first beat of measure twenty-seven the situation is somewhat different. The only tone not common to one chord (the D minor-minor seventh chord) is G-sharp. For this

reason G-sharp has been analyzed as a lower neighboring tone and the D chord counted as the only essential harmony of this beat.

Keys

Table LIII - Tabulation of Keys
Symphony Number Four - Second Movement

Measures	Key	Comments	Part of Form
1-8	G	Unison passage	Introduction
9-16	G		Theme A
17-19	g		
20-25	G		
26-28	g		
29-31	B-flat		
32-35	e-flat	Unison only, but quite clear	
36-51	D-flat		Theme A
52-55	a		
56-59	Uncertain	Unrelated chords	
60-63	C		
64-66	C		Theme B
66-67	A-flat	Chromatic	
68-69	C		
70-71	A-flat		
71-72	g		
72-73	C	Chromatic, not entirely clear	
74-80	a		
81-84	d		
85-86	b-flat		
87	A-flat	No tonic chord	
88-89	C		
90-95	d		
96-97	g or G	Unison writing	
98-105	G		Theme A
106-108	g		
109-112	G		
113-114	E or B		
115-118	e		
119-121	G		
122-125	(series of dominant seventh chords)		
126-128	Uncertain	Unison writing only	

The scheme of tonality is considerably simpler than that of the preceding movement. Only one modulation has been found that involves a change of more than four accidentals. This is the modulation from D-flat major to A-minor (measure 52). There are only four modulations to a key of like mode in 3rd relation, modulations involving a change of four accidentals. Most of the remaining modulations are between closely related keys or involve a change of mode.

The relative closeness of the keys involved is a factor which contributes to the over-all impression that the movement is similar to the nineteenth-century hymn.

General Observations. The factors which suggest the style of the nineteenth-century hymn are: simplicity of form, harmony, chord progressions, and the modulation scheme. Although greater prominence of the minor-minor, diminished-minor, and diminished-diminished types of seventh chords is found than is characteristic of this style, the fact that these are all relatively consonant in sound (in comparison to the major-major or minor-major types) enables them to fit into the style without becoming obtrusive.

IV. THE THIRD MOVEMENT

Introductory Comments

Although the form of the third movement resembles sonata form, there are a number of peculiarities. The

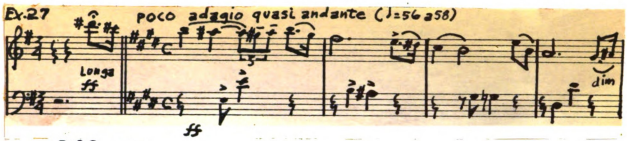
recapitulation (if that is what it is) presents each of the main themes, but in a most fragmentary manner, and there is no final cadence. The recapitulation ends inconclusively by suddenly leading into a brilliant almost fanfare-like passage which acts as a link to the last movement. This fanfare-like passage is not thematically related to either movement and in no sense may be considered as an ending of the third movement.

Form is not the main topic of this discussion and no ultimate decision regarding the form of this movement will therefore be made.

Counterpoint is a very prominent feature of this movement. The development section contains many interesting developments of various elements of the first subject. There is an interesting stretto of the first subject found in the recapitulation, and also considerable use of two-part contrapuntal writing.

In contrast to the preceding movement, the general character is grave or tragic, the very antithesis of the somewhat placid, hymn-like second movement.

The style is ecclectic. The opening theme (shown in Example 27) seems quite Tchaikovskian in character, but the theme which closes the movement (shown in Example 28) has a strong resemblance to Ernest Bloch's Schelomo. Both sections are presented below.



Chords

Table LIV - Tabulation of Chords
Symphony Number Four - Third Movement

Triads

Major	48.4% 132	Minor	38.1% 104	Augmented	2.9% 8	Diminished	10.6% 29

Seventh Chords

Major-minor	30.3% 23	Major-major	3.9% 3
Minor-minor	25.0% 19	Minor-major	1.3% 1
Augmented-minor	1.3% 1	Augmented-major	0
Diminished-minor	18.4% 14	Diminished-diminished	19.7% 15
		Diminished-major	0

Ninth Chords

Major-minor-minor	1	Major-minor-major	2

Table LIV - Continued

Ninth Chords - continued			
		Major-(no 7th)-major	0
Minor-minor-minor	0	Minor-minor-major	0
Minor-(no 7th)-major	0	Minor-major-major	0
Diminished-diminished-minor	0	Diminished-minor-major	1
Diminished-minor-minor	2	Diminished-(no 7th)-major	1
Eleventh Chords			
Major-minor-major-perfect	1	Major-minor-major-aug.	0
Minor-minor-major-perfect	1	Minor-minor-(no 9th)-perfect	0
Diminished-minor-major-perfect			0
Thirteenth Chords			
Major-(no 7th)-major-(no 11th)-major			0
Major-minor-major-perfect-minor			0
Minor-major-(no 9th)-perfect-minor			0
Augmented Sixth Chords			
Italian 1		French 0	German 3
Chords with Added Tones			
Major-minor seventh chord with augmented 4th			0

Table LIV - Continued

	Number of Occurrences	Percentage All Chords
Number of Triads	273	75.4%
Number of Seventh Chords	76	21.0%
Number of Ninth Chords	7	1.9%
Number of Eleventh Chords	2	.6%
Number of Thirteenth Chords	0	
Number of Augmented Sixth Chords	4	1.1%
Number of Chords with Added Tones	0	
Total Number of Chords	362	

Like the movement immediately preceding it, the third movement employs a chord texture composed mostly of triads and seventh chords. The ratio of triads to seventh chords is approaching that of Bach (in his chorales) with the triad more prevalent than in any other movement of this symphony or of the three preceding ones.

Another conservative element is the predominance of the major-minor seventh chord over all other types of seventh chord. This is a definite return to the practices of the nineteenth century. The diminished-diminished seventh chord, also used extensively by some writers of the nineteenth century, is used nearly twice as often as is usual for the fourth symphony, another conservative factor.

Chords of diminished sonority are quite prevalent in this movement. This is partially the result of increased use of the diminished triad and of the diminished-diminished type seventh chord, but is also caused by the normal but nevertheless quite extensive use of the diminished-minor

type seventh chord. This prominence of the diminished sonority is a distinct peculiarity of the movement.

The main characteristic of the chord texture is conservative, employing mostly the simpler types of chords, especially the triad, but the prominence of chords of diminished sonority does contribute some individuality to the movement.

Root Movement

Table LV - Tabulation of Root Movement
Symphony Number Four - Third Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	45	14.0%
By descending 2nd	65	20.2%
By ascending 3rd	34	10.6%
By descending 3rd	38	11.8%
By ascending perfect 4th	54	16.8%
By descending perfect 4th	71	22.1%
By ascending or descending tritone	14	4.4%
Total Number of Root Movements	321	

Tabulation of Change of Sonority	
Change of Mode	6
Change of 5th	6
Change of 3rd and 5th	1

The total use of each of the main types of root movement (by 2nd, 3rd, perfect 4th, and by tritone) does not deviate significantly from the average (for each) of the

symphony, no deviation being more than one per cent. This is somewhat in contrast to the preceding movement where root movement by 2nd was unusually prevalent.

Although the totals for each of the main types of root movement are very normal for this symphony, there are several peculiarities in the directions of the root movement. Root movement by descending perfect 4th is used more than that by ascending perfect 4th, the first example of this found in any movement of these four symphonies. Another peculiarity is the more extensive use of root movement by descending 2nd than that by ascending 2nd. The root movement by 2nd is not as unusual as that by perfect 4th, similarly extensive use of root movement by descending 2nd being found in the first movement of the first symphony as well as in the first movement of the third symphony.

It will be noted that although root movement by descending 3rd is used more than that by ascending 3rd (quite normal), the margin of numerical superiority is very slight, the two types being nearly identical in frequency of use.

Since root movement by descending perfect 4th and by descending 2nd would tend to produce abnormal chord progressions (abnormal according to principals of traditional harmony), there are several consequences that could be expected from their unusually abundant use. These are: instability of tonality, and lack of finality (not sounding finished or concluded). The aural effect of the music after careful listening confirms the latter speculation more than the former;

the music seems clear in tonality but lacks finality.

There are several reasons why the tonality does not seem to be upset by the peculiarities of the root movement. Diatonic melodic writing with strong tonal implications tends to establish tonality despite the peculiarities of the underlying chord progressions. Also, the use of chords within the diatonic limits of a key will tend to establish that key despite unusual root movement, provided that the melodic writing establishes which tone is the tonic.

Because of these modern applications of tonality found in the third movement of this symphony, it must be regarded as showing considerable advance in style, and more modern in concept and sound than any single movement previously discussed in this treatise.

Keys

Table LVI - Tabulation of Keys
Symphony Number Four - Third Movement

Measures	Key	Comments	Part of Form
1-7	E	Some emphasis of g-sharp	First subject
8-12	f-sharp		
13	b		
14-17	c-sharp	Not very clear	
18	E		
19-20	G		
20-23	c-sharp		
24-25	B		
26-28	D		
29-37	e		
37-40	E		
41-42	E		Second subject
43-46	e		

Table LVI - Continued

Measures	Key	Comments	Part of Form
47-48	E		
49	Uncertain	Chromatic	
50-51	a-flat		
52	A-flat	Mixolydian 7th	
53-57	c		
58	B-flat		
59	C		
60-63	Uncertain	Two part writing, very chromatic	Development section
64-68	f		
69	d		
70-75	c-sharp		
75-76	f-sharp		
77-78	F		
79-80	g		
80-83	c		
82-84	a-flat		
85-88	F		
89-90	G		
90-92	g		
92	d		
93	A		
94-101	e		
102-107	E	All tonic chord	
108-109	g-sharp	All progressions up by perfect 5th	
109-110	b-flat		
110-112	d		
113-115	a	First subject in stretto	Recapitulation
116-118	b-flat	Second subject	
118-121	a-flat	First subject	
122-124	c	Related to First subject	
125-127	a	Not certain, no tonic chord	End of movement
130-132	a	Unison passage only	Not related to either third or last movement
133-137	A	(Or E Mixolydian)	

Most of the modulations are to closely related keys. There is also some change of mode and also some 3rd relationship

between keys of like mode. Modulations to more remote keys are in general quite rare.

Of the modulations to remote keys there are several of some interest. That of D minor to C-sharp minor (measure 70) and that of F-sharp minor to F major are interesting because of their tonic scale steps being a minor 2nd apart. The modulation from A-flat minor to F major is interesting not only because of the remoteness of the two keys from each other but because the tonic degree of the first key is not found diatonically in the second key (it is the lowered 3rd scale step).

The over-all modulation scheme of the movement is not unusual for the composer or for the era when the symphony was written and is therefore of less interest than some of the other elements already discussed.

V. THE FOURTH MOVEMENT

Introductory Comments

The finale is dependent on the preceding movements without which its form would be unintelligible. As an integral part of the symphony it may be considered to be chiefly a development section based on fragments of themes of the third movement and concluding with the hymn-like theme of the first movement. The restatement of the latter is so exact that it could be considered a recapitulation of the first movement's ending.

If the entire symphony were not performed, the source of most of the last movement's themes would be lost, and it would end most peculiarly with a new theme. As an integral part of the entire symphony, it is quite effective, and the ending is very conclusive and satisfactory.

This is the first of Carl Nielsen's symphonies to employ interdependence of movements with the entire symphony constructed as one large unit. The third symphony did, however, contain considerable development of melodic fragments within the individual movements. The fourth symphony merely extends this type of writing beyond the boundaries of the individual movements. This new type of form (new for the composer) is therefore arrived at by evolution rather than by revolution. The use of closely interrelated and interdependent movements within a symphony is, of course, not an innovation of Carl Nielsen, having already been used by Jan Sibelius and other composers at an earlier time. It must nevertheless be considered as quite typical of some twentieth-century compositions and therefore modern in implications.

Chords

Table LVII - Tabulation of Chords
Symphony Number Four - Fourth Movement

Triads							
Major	54.1% 212	Minor	37.2% 146	Augmented	3.3% 13	Diminished	5.4% 21

Table LVII - Continued

Seventh Chords			
Major-minor	44.0% 62	Major-major	9.2% 13
Minor-minor	25.5% 36	Minor-major	.7% 1
Augmented-minor	.7% 1	Augmented-major	1.4% 2
Diminished-minor	14.9% 21	Diminished-diminished	3.5% 5
		Diminished-major	0

Ninth Chords			
Major-minor-minor	0	Major-minor-major	1
		Major-(no 7th)-major	6
Minor-minor-minor	1	Minor-minor-major	2
Minor-(no 7th)-major	3	Minor-major-major	0
Diminished-diminished-minor	1	Diminished-minor-major	0
Diminished-minor-minor	2	Diminished-(no 7th)-major	1

Eleventh Chords			
Major-minor-major-perfect	0	Major-minor-major-aug.	1
Minor-minor-major-perfect	0	Minor-minor-(no 9th)-perfect	1
Diminished-minor-major-perfect			1

Thirteenth Chords	
Major-(no 7th)-major-(no 11th)-major	3
Major-minor-major-perfect-minor	1
Minor-major-(no 9th)-perfect-minor	1

Table LVII - Continued

Augmented Sixth Chords		
Italian 0	French 6	German 2

Chords with Added Tones	
Major-minor seventh chord with augmented 4th	0

	Number of Occurrences	Percentage All Chords
Number of Triads	392	69.3%
Number of Seventh Chords	141	24.9%
Number of Ninth Chords	17	3.0%
Number of Eleventh Chords	3	.5%
Number of Thirteenth Chords	5	.9%
Number of Augmented Sixth Chords	8	1.4%
Number of Chords with Added Tones	0	0
Total Number of Chords	566	

The finale contains more different types of chord than any other movement of this symphony. Eleventh chords were found only in the third movement and thirteenth chords are peculiar to the finale.

Diminished chords are used considerably less than usual, especially less than in the third movement. The decrease is noticeable in the diminished triad and the diminished-diminished seventh chord. The latter is used less than one-third as frequently as is normal for this type of chord in this symphony. The reduction in the use of chords of diminished sonority is in contrast to the third movement where such chords were unusually prevalent.

The major-minor seventh chord accounts for an unusually high percentage of the total number of seventh chords. This is of course contrary to the trend of this symphony and is a conservative factor in the movement. It does, however, create some contrast with the preceding movement, where this chord is considerably less prevalent.

The major-major seventh chord is more prevalent in the Finale than in any other movement of the symphony. Since it is one of the more dissonant types of seventh chords, its prominence helps to compensate for the otherwise rather conservative use of seventh chords.

Although the number of French sixth chords found in this movement is not unusual, there is an application that has not been used previously in either this or the preceding symphonies of this composer. Whereas previous use of this chord has been quite traditional, the chord now appears in conjunction with a whole tone scale. The passage where this occurs is given (in part) below.

In Example 29 a French sixth on G(spelled G, B, D-flat, F) is found in conjunction with a whole tone scale containing this chord. The chord is correctly spelled, both the D-flat and F being established by the preceding passage. There are two enharmonic changes involved. The F functions as E-sharp, resolving to F-sharp, and the D-flat becomes C-sharp at the resolution. The whole tone scale enhances the enharmonic modulation by obscuring the function of the chord until the resolution.

The whole tone scale had been used considerably earlier than the time when the fourth symphony was written and is therefore no innovation of Carl Nielsen. It is, however, a fairly modern device. Thus its use in the fourth symphony serves as another example of the composer's tendency to absorb modern techniques of composition into his style.

Root Movement

More root movement by perfect 4th is found in the Finale than in any other movement of the fourth symphony. The total is very close to the average for this type of root movement found in the third symphony, and is therefore unusual only in relation to the trend of the fourth symphony.

Table LVIII - Tabulation of Root Movement
Symphony Number Four - Fourth Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	71	14.5%
By descending 2nd	74	15.1%
By ascending 3rd	55	11.2%
By descending 3rd	58	11.8%
By ascending perfect 4th	117	23.9%
By descending perfect 4th	101	20.6%
By ascending or descending tritone	14	2.9%
Total Number of Root Movements	490	

Tabulation of Change of Sonority	
Change of Mode	13
Change of 5th	12
Change of 3rd and 5th	2

Root movement by 2nd is used less than is normal for this symphony, and that by 3rd slightly more. Consequently, there is less difference in the number of times each is used than was found in any other movement of this symphony.

Root movement by tritone is used less in the Finale than in any other movement of this symphony, but not by a significant amount.

General Observations. The results of the unusually extensive use (for this symphony) of root movement by perfect 4th is exactly as might be expected; the tonality is more firmly established than in the third movement, and the movement ends with considerable finality.

Although extensive use of root movement by perfect 4th is in itself a conservative factor, the nearly even balance between the two types is not. Similarly, there is unusually even balance between the ascending and descending types of root movement by 3rd, and also by 2nd. These factors result in an unusually even balance between root movement by descending interval and that by ascending interval, a characteristic that is modern in implications because it departs from more traditional practices.

The predominance of root movement by descending 2nd over that by ascending 2nd, another deviation from traditional practices, was also found in the third movement and therefore contributes a certain degree of stylistic unity between the two movements. This continuity of style is of some significance, because the third movement did not sound finished. Thus the Finale continues musical ideas found in the third movement and gives a conclusion to these two movements as well as to the symphony as a whole.

Keys

Table LIX - Tabulation of Keys
Symphony Number Four - Fourth Movement

Measures	Key	Comments	Part of Form
1-5	G	Fragment of Subject I Third Movement	A
6	g		
7-8	A-Mixolydian		
9-22	A-Mixolydian	Fragment of Subject I Third Movement	B

Table LIX - Continued

Measures	Key	Comments	Part of Form
23-29	A (Major)		
30-33	g		
34-35	B		
36-38	b		
39-42	a	No tonic chord	
43-46	c	Chromatic, not clear	
47-49	e-flat	Chromatic, not clear	
50	E-flat	New theme not found in other movements	C
50-52	Uncertain		
53-55	f	Not certain, chromatic	
56	Uncertain	Chromatic	
57-58	E		
59-63	c-sharp		
64-66	B		
67-69	E-flat		
70-75	Uncertain	Chromatic	
76-78	E-flat		A and C
79-84			
85-100	Uncertain	French Sixth plus aug. 5th	
101-108	f-sharp	Fragment of second subject Third Movement	D
109-110	c-sharp		
111-116	B-flat		
117-118	B-flat		A
119-121	c		
122-124	Uncertain	Four major triads, all root movement by ascending 2nd	
124-130	Uncertain	French sixth	
131-137	B-flat	Mixolydian	
138-139	a		
140-142	C		
143	C		B
144-146	a		
147-165	A	Mixolydian	
166-177	A	Mixolydian or G major	
177-179	A	Mixolydian	
180-190	A	Mixolydian. New theme, not found in other movements	D
191-200	d		
201-208	B-flat		
209-214	C		
215-228	c-sharp	Mixolydian	

Table LIX - Continued

Measures	Key	Comments	Part of Form
229-232	Uncertain		
233-237	C		
238-247	g		
248	Uncertain	(unrelated chord)	
249-252	b		
253-265	B	Mixolydian	Theme B
266-274	c-sharp	Dorian	
275-283	B (major)		
284-288	b		
289-303	B	Mixolydian	
304-310	e		
311-316	B	Mixolydian	
317-333	B	Mixolydian. Fragments of second subject First Movement plus theme B	Themes B and E
334-335	b		
336-337	B		
338-347	b		
348-355	B		
356-379	b-B	Mixolydian	Theme B
380-428	Uncertain	All b[67]	
429-435	Uncertain	Chromatic	Theme C
436-439	c-sharp	Very chromatic, not certain	
440-441	g-sharp		
442-445	E		
446-448	B		
448-452	e-flat		
453-456	a-flat		
457-460	E		
461-465	E	Recapitulation of second subject, First Movement	Theme E
466	G		
467	C		
468-473	e		
473-474	c		
475	F		
476-495	E		End of Symphony

The fourth movement, like the first, contains a large number of modulations. For this reason a chart of the different types of modulations used is practical and therefore

included below. The chart is compiled in the same manner as that for the first movement.

Table LX - Types of Modulations and Number of Occurrences

Type of Modulation	Number of Occurrences	Percentage
Change of mode	13	26%
By 2nd (close key)	3	6%
By 2nd (foreign key)	8	16%
By 3rd (close key)	8	16%
By 3rd (distant key)	7	14%
By perfect 4th (close key)	5	10%
By perfect 4th (foreign key)	6	12%
By tritone (like mode)	0	
By tritone (opposite mode)	0	
Total number of modulations by 2nd	11	22%
Total number of modulations by 3rd	15	30%
Total number of modulations by perfect 4th	11	22%
Total number of modulations by tritone	0	
Total number of close modulations	16	32%
Total number of foreign modulations (not including change of mode)	21	42%
Total number of modulations	50	

From this chart it is clear that foreign modulations occupy a prominent position in the movement's tonal scheme, although not as prominent as in the first movement. Of these, modulations by 2nd are the most prevalent, followed by those by 3rd and those by 2nd.

The most prominent features of the tonal scheme are: change of mode, foreign modulations (especially by 2nd), and the lack of any modulations by perfect 4th. The tonal scheme is somewhat conservative in comparison to the first

movement of this symphony but has two general similarities: foreign modulations are used more than close modulations, and more foreign modulations between keys a 2nd apart are found than by any other interval.

CHAPTER VII

SYMPHONY NUMBER FIVE (1920-1922)

I. THE SYMPHONY AS A WHOLE

Introductory Comments

It was noted that in the fourth symphony there was considerable thematic interrelationship between movements (cyclical use of themes). In the fifth symphony this type of writing is used so extensively that the composer has amalgamated the traditional fast first movement and slow second movement into one large, thematically interrelated unit and has designated it as one movement. Similarly, elements of the traditional scherzo and finale have also been synthesized into one large second movement.

In the first movement there are definite vestiges of the traditional first and second movements. The first section of the movement is entirely written with a relatively rapid tempo (Tempo giusto) and the second section entirely in a rather slow tempo (Adagio non troppo). As will be discussed (in connection with the first movement), the chord texture as well as the root movement of these two sections

differ considerably. All of these facts indicate that although the first movement is formally one large unit, it is stylistically two distinct sections corresponding to the traditional first and second movements of a four-movement symphony.

The second movement begins Allegro, continues with a fugato marked Presto, followed by an Andante un poco tranquillo, and ends with Allegro (tempo 1), which is clearly a recapitulation. The general character of the presto section resembles a scherzo, another vestige of the traditional four-movement symphony, but because the thematic material is drawn from an earlier part of the movement, it would be entirely incorrect to consider this a separate movement. Nevertheless, although this section is not independent of the second movement, an element of the scherzo is present and the composer has thereby preserved another traditional characteristic of the four movement symphony in this work.

The condensing of four movements into two large ones is certainly a modern innovation and marks the composer as very progressive in his use of form.

As will be seen in the discussions that follow, the fifth symphony is in general considerably more advanced in its harmony than the fourth symphony, and is more clearly twentieth-century music in both concept and sonority. It will also be shown how the composer tends to incorporate modern chord sonorities, and how he tends to resolve them

in a traditional way, thus amalgamating them into a more traditional technique of composition without incongruity.

Chords

Table LXI - Tabulation of Chords
Symphony Number Five - Totals from All Movements

Triads							
Major	52.6% 512	Minor	37.2% 362	Augmented	1.7% 17	Diminished	8.4% 82
Seventh Chords							
Major-minor		39.0% 269		Major-major		7.8% 54	
Minor-minor		28.3% 195		Minor-major		2.8% 19	
Augmented-minor		.9% 6		Augmented-major		.9% 6	
Diminished-minor		14.9% 103		Diminished-diminished		5.5% 38	
Ninth Chords							
Major-minor-minor		.7% 1		Major-minor-major		23.9% 33	
Major-(no 7th)-minor		1.4% 2		Major-(no 7th)-major		11.6% 16	
				Major-major-major		25.4% 35	
Minor-minor-minor		2.2% 3		Minor-minor-major		13.0% 18	
Minor-(no 7th)-minor		5.8% 8		Minor-(no 7th)-major		10.1% 14	
Augmented-minor-major		.7% 1		Augmented-(no 7th)-major		2.2% 3	
Diminished-minor-minor		1.4% 2		Diminished-minor-major		.7% 1	

Table LXI - Continued

Ninth Chords - Continued	
Diminished-diminished-minor	.7%
Eleventh Chords	
Major-minor-major-perfect	9
Major-minor-(no 9th)-perfect	4
Minor-minor-minor-perfect	1
Minor-minor-major-perfect	2
Minor-(no 7th)-major-perfect	1
Minor-(no 7th)-major-augmented	2
Diminished-minor-minor-perfect	1
Diminished-minor-(no 9th)-perfect	1
Thirteenth Chords	
Major-major-major-(no 11th)-major	3
Major-major-major-augmented-major	1

Augmented Sixth Chords			
Italian 1	French 14	German 2	Minor-German 1

Triads with Added Tones			
Major plus 6th	15	Major plus augmented 4th	6
Minor-plus 6th	9	Major plus perfect 4th	2
Augmented plus augmented 4th			2
Split 3rds (major and minor)			13
Diminished plus major 3rd			1
Split 5ths (diminished plus perfect)			1

Table LXI - Continued

Seventh Chords with Added Tones	
Diminished-diminished plus minor 7th	1
Major-minor plus minor 3rd	1
Minor-minor plus major 6th	1
Quartal Chords	
Three tones 10	Four tones 7
Polychords (Two triads sounding simultaneously)	
A plus E	1
A plus B	1
E plus B	1

	Number of Occurrences	Percentage All Chords
Number of Triads	973	50.8%
Number of Seventh Chords	690	36.0%
Number of Ninth Chords	138	7.2%
Number of Eleventh Chords	21	1.1%
Number of Thirteenth Chords	4	.2%
Number of Augmented Sixth Chords	18	.9%
Number of Chords with Added Tones	52	2.7%
Number of Quartal Chords	17	.9%
Number of Polychords	3	.2%
Total Number of Chords	1916	

Triads. Triads are used less than in any of the four preceding symphonies. This is in complete contrast to a consistent trend (from the first through the fourth symphonies) toward increased use of this type of chord. Although the decrease is opposite to the trend of the composer, it is quite

characteristic of many twentieth-century compositions and must be regarded as a progressive rather than a conservative development.

Seventh Chords. Seventh chords are used nearly as often as in the first symphony. This is in opposition to the tendency of the composer to use less of this type of chord in each succeeding symphony than in that preceding it, but is typical of many twentieth-century compositions, and therefore modern in implications.

Considering now the individual types of seventh chords, the statistics in general resemble those for the fourth symphony. The chief exceptions are the major-minor type, which is used considerably more than in the fourth symphony, and the diminished-diminished type, which is used less than half as often as in the fourth symphony.

Ninth Chords. Ninth chords are used nearly four times as often as in the fourth symphony, a very substantial increase. Two new types (not found in the preceding symphonies) based on the augmented triad are found: the augmented-minor-major, and the augmented-(no 7th)-major. Thus the number of types of ninth chords used has been expanded to include types based on all four of the triad types.

Eleventh Chords. There is some increase in the use of eleventh chords, but not as much as was the case with ninth chords. Eleventh chords based on the augmented triad are not found. This is of some interest since ninth chords based on this type of chord are found in this symphony.

Thirteenth Chords. No increase is found in the use of thirteenth chords, nor have any new types been found. This type of chord remains exceedingly rare.

Augmented Sixth Chords. The percentage figure is identical to that found in the fourth symphony for this type of chord, and the French type remains the most prevalent. The minor type of German sixth chord is not peculiar to the fifth symphony, having been found in the second symphony.

Chords with Added Tones. Although still quite rare, their use has been increased to the extent that they are more than twice as numerous as eleventh chords. Their increased use contributes considerably to the modernness of the symphony's sonority.

Quartal Chords. This type of chord was not found in any of the preceding symphonies; and although their use in this symphony is rare, they are used prominently (especially at the beginning of the second movement). Because of these factors, their use must be considered a significant development in the composer's technique of composition.

All of the quartal chords found were composed of either only perfect 4ths, or else perfect 4ths and perfect 5ths, with none composed of only perfect 5ths.

Polychords. Although these are rare, and the types are more conservative than those used by other composers (chords with roots an augmented 4th apart, by Stravinsky), some advance in technique is apparent.

General Observations. The fifth symphony contains more radical changes in types of chords and their amount of use (in comparison to the symphony preceding it) than were found in any of the symphonies discussed previously. The most significant of these are the reduction in use of triads to only approximately one-half of the total number of chords, and the increased use of the more complicated types of chords. This results in chord texture which is considerably more modern than was found in the preceding symphonies.

Root Movement

Table LXII - Tabulation of Root Movement
Symphony Number Five - All Movements

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	224	13.8%
By descending 2nd	226	13.9%
By ascending 3rd	138	8.5%
By descending 3rd	209	12.8%
By ascending perfect 4th	409	25.1%
By descending perfect 4th	350	21.5%
By ascending or descending tritone	73	4.5%
Total Number of Root Movements	1629	

Tabulation of Change of Sonority	
Change of Mode	78
Change of 5th	34
Change of 3rd and 5th	12

The tabulations resemble those of the third symphony more closely than those of any of the other five symphonies. The general trend is therefore conservative, with root movement by perfect 4th most prevalent, followed by root movement by 2nd, by 3rd, and by tritone.

The only peculiarity in the direction of the root movements is that those by descending 2nd are used more than those by ascending 2nd. This peculiarity was also found in the first symphony and will be found in the sixth symphony as well. Although no other symphony contained this peculiarity for an over-all average, it was found in the first movement of the third symphony and in both the third and fourth movements of the fourth symphony. More extensive use of root movement by descending 2nd than by ascending 2nd is therefore not unusual in Carl Nielsen's symphonies, but it is an interesting deviation from more traditional practices.

The general trend of the root movement found in the tabulation may be summarized as being rather conservative and traditional. Considering the general advance in the types of chords used, it is not surprising that the root movement is more conservative. It is, in fact, quite typical of the composer to balance peculiarities in one aspect of composition with more conservative elements in another.

Comparing this symphony with the fourth, the former contains more interest in the types of chords used as well as in the relative amount that the various types are used, but the latter is more interesting in the use of root movement.

II. THE FIRST MOVEMENT

Introductory Comments

As was mentioned previously, the first movement is divided into two stylistically different sections corresponding to the traditional first movement in fast tempo, and second movement in slow tempo. The form of the first section resembles the sonata, containing two contrasting themes, a development section, but a somewhat nebulous recapitulation. The form of the second section is basically monothematic, but some ostinatti from the first section do appear. These ostinatti are used contrapuntally against the main theme of the second section. The movement ends with a theme from the first section.

The over-all plan of the movement is as follows: two contrasting large sections are presented (the first resembling a sonata); there is some development (combining themes from the two main sections); and the movement ends with a theme of the first section. The basic form of the movement is binary (but with some development), and the movement ends with a coda based on material from the first section.

Because the first movement is a formal unit, the tabulations of chords, root movements, and modulations will deal with it as a whole. Since the two sections are stylistically quite different, tabulations for each have been prepared and are included in Appendix A. These tabulations clearly indicate that the two sections differ considerably in their root

movement, and somewhat in their use of chords, and that the second section is in general more traditional in its harmony, resembling slow movements of the earlier symphonies.

If the second movement could have been similarly divided into two sections (corresponding to the traditional third and fourth movements), this would have been done, and the fifth symphony discussed as being in four parts, each comparable to one of the four traditional movements found in each of the preceding symphonies. Unfortunately, the second movement cannot be so divided. For this reason it seems best to discuss the first movement as one large unit. In this way it can be more effectively compared to the similarly large second movement.

Chords

Table LXIII - Tabulation of Chords
Symphony Number Five - First Movement

Triads							
Major	63.5% 217	Minor	27.5% 94	Augmented	1.2% 4	Diminished	7.9% 27

Seventh Chords			
Major-minor	45.7% 122	Major-major	9.4% 25
Minor-minor	28.5% 76	Minor-major	2.2% 6
Augmented-minor	1.5% 4	Augmented-major	.7% 2
Diminished-minor	8.6% 23	Diminished-diminished	3.4% 9

Table LXIII - Continued

Ninth Chords			
Major-minor-minor	0	Major-minor-major	16
Major-(no 7th)-minor	0	Major-(no 7th)-major	7
		Major-major-major	22
Minor-minor-minor	0	Minor-minor-major	5
Minor-(no 7th)-minor	0	Minor-(no 7th)-major	0
Augmented-minor-major	0	Augmented-(no 7th)-major	1
Diminished-minor-minor	0	Diminished-minor-major	0
		Diminished-diminished-minor	1

Eleventh Chords	
Major-minor-major-perfect	0
Major-minor-(no 7th)-perfect	0
Minor-minor-minor-perfect	0
Minor-minor-major-perfect	2
Minor-(no 7th)-major-perfect	0
Diminished-minor-minor-perfect	1
Diminished-minor-(no 9th)-perfect	0

Thirteenth Chords	
Major-major-major-(no 11th)-major	3
Major-major-major-augmented-major	1

Augmented Sixth Chords			
Italian 0	French 9	German 2	Minor-German 1

Table LXIII - Continued

Chords with Added Tones			
Major plus 6th	11	Major plus augmented 4th	0
Minor plus 6th	4	Major plus perfect 4th	0
Split 3rds (major and minor)			2
Split 5ths (diminished plus perfect)			0
Augmented plus augmented 4th			2

Seventh Chords with Added Tones	
Diminished-diminished plus minor 7th	0
Major-minor plus minor 3rd	0
Minor-minor plus major 6th	0

Quartal Chords			
Three tones	2	Four tones	4

Polychords (Two triads sounding simultaneously)	
A plus E	0
A plus B	0
E plus B	0

	Number of Occurrences	Percentage All Chords
Number of Triads	342	48.5%
Number of Seventh Chords	267	37.8%
Number of Ninth Chords	52	7.4%
Number of Eleventh Chords	3	.4%
Number of Thirteenth Chords	4	.6%
Number of Augmented Sixth Chords	12	1.7%
Number of Chords with Added Tones	19	2.7%
Number of Quartal Chords	6	.9%
Number of Polychords	0	0.0%
Total Number of Chords	705	

The statistics for each of the larger classes of chords (triads, seventh chords, etc.) do not deviate significantly from the averages for each in the symphony as a whole. The one exception to this is that polychords are not found in the first movement. The general closeness of the statistics indicates considerable stylistic consistency in the use of these main types of chords.

Observation of the statistics for the individual types of chords discloses that there are some significant deviations from the norms.

Triads. There is a considerable abundance of major triads and a relative dearth of minor triads. Some explanation can be found for this by examining the supplementary tabulation in Appendix A. The second section of the movement is chiefly written in the major mode, and consequently contains a large number of major triads. The first section of the movement is actually somewhat below the average in content of major triads, but is overbalanced by the surplus of the second section.

Seventh Chords. The major-minor type seventh chord is used considerably more than usual (for this symphony). The cause is once more the second section, in which more than half of all seventh chords are of this type. This abundance of major-minor type seventh chords clearly marks the second section as retrogressing considerably in style toward the practices of the nineteenth century.

Both the diminished-diminished and the diminished-minor seventh chords are used less than usual, especially the latter.

Ninth Chords. Although the total use of ninth chords is very close to the average for this type of chord, there are eight fewer types used than in the second movement. The first movement is therefore rather restricted in the number of types of this chord - a conservative factor.

Eleventh Chords. Use of eleventh chords is restricted both in total number of chords and in the number of types found. There are less than half as many eleventh chords, and four less types than are found in the second movement.

Thirteenth Chords. In contrast to the limited use of both ninth and eleventh chords, the only thirteenth chords found in this symphony appear in the first movement, but the number of thirteenth chords is very small.

Quartal Chords. Quartal chords with four tones are used more than those with three tones. This is contrary to the general trend of the movement to favor the use of simpler chords.

Polychords. Polychords are not found in the first movement. This is not unusual when it is remembered that the first half of the movement is quite contrapuntal and in general has a thin chordal texture (many incomplete chords, resulting from one- and two-part writing). A thin chordal texture would certainly impair the effectiveness of polychords, and this fact accounts in part for their absence. Polychords

would also be out of place in the second section of the movement, the general trend of this section being toward the extensive use of very traditional chordsand chord progressions.

General Observations. The second section of the movement is in general very conservative in harmony. The first section is also somewhat restricted in the number of chord types used but achieves interest through the use of contrapuntal devices such as ostinatti, single and double pedal points, and melodic development involving frequent chromatic alteration of tones in the melodic line.

Root Movement

Table LXIV - Tabulation of Root Movement
Symphony Number Five - First Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	89	15.2%
By descending 2nd	76	13.0%
By ascending 3rd	34	5.8%
By descending 3rd	68	11.6%
By ascending perfect 4th	159	27.2%
By descending perfect 4th	138	23.6%
By ascending or descending tritone	20	3.4%
Total Number of Root Movements	584	

Tabulation of Change of Sonority	
Change of Mode	25
Change of 5th	11
Change of 3rd and 5th	5

The tabulations of root movement do not vary greatly from the averages of the symphony as a whole, and all deviations are in a conservative direction. Root movement by ascending 2nd is used more than that by descending 2nd, and both types of root movement by perfect 4th are used more than usual for this symphony.

Examination of the supplementary chart (in Appendix A) proves to be somewhat more interesting. It becomes apparent that the second section of the movement is considerably more conservative than the first. In the first section the prevalence of root movement by descending 2nd, as well as the less extensive use of root movement by perfect 4th are more in keeping with the general trend of the symphony.

The first section of the movement is quite consistent with the second movement in the use of root movement, but the second section is conspicuously conservative. The second section therefore is in contrast to both the music preceding it (the first section) as well as the music following it (the second movement).

Keys

Table LXV - Tabulation of Keys
Symphony Number Five - First Movement

Measures	Key	Comments	Part of Form
		Tempo Giusto	
1-9	d		First subject
10-17	B-flat or F	Mixolydian	
18-19	Uncertain	(chromatic)	

Table LXV - Continued

Measures	Key	Comments	Part of Form
23-35	D Mixolydian or A Dorian	Very modal chord progressions	
36-40	G Dorian		
41-43	Uncertain	Unison passage, diminished triad implied	
44-53	F	Some Mixolydian 7th	Second subject
54-55	f		
56-60	F	Some Mixolydian 7th	
64-66	F		
67-71	F Mixolydian		
72-74	C		
75-77	c		
78-80	f	Scale passage	
81-82	F		
83-94	C Dorian or g		
95-108	c		
109-114	d		
115-167	d	Intervals from both subjects combined into new composite melodic line	Development section
168-169	d	First subject	Recapitulation
170-176	B-flat or F Mixolydian		
177-181	g	No tonic chord	
182-183	D Mixolydian (or dominant of g)		
184-190	g		
191-193	d		
194	b-flat		
195-213	b-flat	Second subject	
214-218	C	New theme developed from first subject, appears again at end of the first movement	
219-224	A-flat		
225-235	a	Chromatic, elements of g also	
236	g		
237	f		
238-241	e-flat		
242-245	A-flat	Added augmented 4th blurs key somewhat, First subject further developed	
246-249	a-flat		
248-254	b-B	Tonic chord minor, subdominant and dominant are major	
254-257	Uncertain	Unrelated chords	

Table LXV - Continued

Measures	Key	Comments	Part of Form
258-267	e-flat		Coda (and link)
		Adagio Non Troppo	
268-271	G	Main theme of movement, in contrast to those of first section	Theme A
272-280	g	Considerable use of VII (natural form of minor)	
281	A-flat		
282	a-flat		
283-293	G	Repeat of beginning, measure 268	
293-298	a-flat-A-flat	Some Picardie 3rd	
299-306	B	Some emphasis of sub-dominant	
307	b		
308	B	Mixolydian 7th	
309-312	Uncertain	Chromatic	
313-318	g-G	Lowered 6th scale step, but major tonic chord	
319-322	G	Like beginning, measure 268	
323	g		
324-325	g	Theme A plus ostinato from first section of movement (measure 214)	
326-329	F		
330-331	f		
332-333	F		
334-335	e		
336-337	f		
338-339	c		
340-345	g		
346-349	B-flat	Melodic implications of d (minor) in woodwinds against c (minor) in strings, thus suggestion of polytonality but both keys closely related to the predominant key of B-flat	
350	A-flat		
351-352	e-flat		
353	b-flat		

Table LXV - Continued

Measures	Key	Comments	Part of Form
354-355	a-flat		
356-360	F	The conflicting keys d and c are absorbed into F major. The tone D becomes an added 6th to the tonic chord and E-flat (the 3rd of C minor) becoming a Mixolydian 7th	
361	g	The raised 6th scale step of D minor (B) now creates simultaneous cross relation with B-flat, the 3rd scale step of G minor	
368-374	f	The ostinatti in c and d minors function as dissonant counterpoint, creating considerable simultaneous cross relationship	
375-384	G	Ostinatti end in measure 376, tonality becomes very clear and simpler	
385-388	g		
389-397	G		
398-400	G Mixolydian	Clarinet obligato over tonic triad. Theme of measure 214 in first section of movement	Coda

Because the first movement is so clearly divided into two sections, they will each be discussed separately before general conclusions regarding the movement as a whole are presented.

First section (Tempo Giusto). The general tendency of this section is toward extensive use of modulations to closely related keys, and also toward considerable use of

change of mode. Because of this, the few foreign modulations used become prominent because they are exceptional. Thus the modulation from B-flat minor to C major (measure 214) stands out both because of the remoteness of the two keys and also because foreign modulations were rare in the passages preceding it. The modulation therefore draws considerable attention toward the new theme introduced in the new key (C major), a theme used extensively as an ostinato later in the movement and also used as a coda closing the movement.

Other modulations which become somewhat prominant because of the rareness of their use are: 3rd relation between major keys (measure 238), used for the first time in this movement; and a sequence of three modulations, each by descending major 2nd, with each key in the minor mode.

Ostinatti are very prominent in this section of the first movement. Since the composer preferred neither to chromatically alter them nor to use them as extremely dissonant counterpoint, the number of keys used is consequently restricted. Thus, the modulations are generally to closely related keys.

Change of mode as well as use of the Dorian and Mixolydian modes contribute interest in tonality, compensating somewhat for the rather restricted use of foreign modulation.

Second section (Adagio Non Troppo). Because of the unusual modulation scheme, a chart has been prepared similar

to that used in the discussion of the fourth movement of the fourth symphony.

Table LXVI - Type of Modulation and Number of Occurrences

Type of Modulation	Number of Occurrences	Percentage
Change of mode	9	(not included)
By 2nd (close key)	3	16.7%
By 2nd (foreign key)	8	44.8%
By 3rd (close key)	1	5.6%
By 3rd (foreign key)	2	11.1%
By perfect 4th	3	16.7%
By perfect 4th (foreign key)	1	5.6%
By augmented 4th (like mode)	0	
By augmented 4th (unlike mode)	0	
Total number of modulations by 2nd	11	
Total number of modulations by 3rd	3	
Total number of modulations by perfect 4th	4	
Total number of modulations by augmented 4th	0	
Total number of modulations (not including change of mode)	18	

From the above chart it is clear that modulations between keys a 2nd apart (especially of the foreign type) are a very prominent part of the modulation scheme, greatly outnumbering all other types. Foreign modulation is used more than modulation to closely related keys, but modulations by augmented 4th are not used.

General Observations. There is considerable balance between the two sections of the movement, the first being simpler (using more closely related keys) and the second

section containing more foreign modulations (especially between keys a 2nd apart). The unusual modulation scheme of the second section balances somewhat the more conservative use of chords and root movement. Without the unusual modulation scheme it would tend to be an anachronism and out of place in the fifth symphony.

III. THE SECOND MOVEMENT

Introductory Comments

There are four main sections in the second movement; Allegro, Presto, Andante, and Allegro. Two subjects are presented in the first section and developed somewhat. The two sections following contain further development, and the last section is a recapitulation. The recapitulation is very clearly defined because of the return to the original tempo of the exposition, and also because of the exactness with which the two subjects are restated. These factors make the form very clearly sonata, considerably more so than was the case in the first section of the first movement.

Although the second section (Presto) is a fugato and is clearly a part of the developments section, the use of triple meter and the melodic characteristics carry suggestions of a scherzo, another vestige of the traditional four movement symphony. This section and the section following (Andante), contribute some stylistic variety to the very long second movement (914 measures).

Before proceeding with the various tabulations, two excerpts will now be presented and discussed. These will help familiarize the reader with the music, more especially with several new techniques of composition employed in this movement.

Example 30 above, the first three measures of the second movement, is of interest because of its quartal harmony. The sonority of the first measure is quite clearly that of a quartal chord constructed on F-sharp, containing the tones F-sharp, B, and E. The melodic line also contains these three tones, and is an arpeggiation of the chord.

Several analyses are possible in the second measure. If the B (in the bass part) on the second beat is considered as an essential tone (part of the chord), then the chord is a quartal chord constructed on C-sharp containing the tones C-sharp, F-sharp, B, and E, and is in first inversion (F-sharp is in the lowest sounding part). Since it is questionable whether the theory of inversion can be applied to quartal chords, there is some doubt as to the correctness of this analysis.

A more traditional analysis would be to consider the chord a minor-minor seventh chord on F-sharp, and regard the B as akin to a neighboring tone, but of wider interval than a 2nd. The resolution of this chord to a B-major triad on the third measure tends to strengthen the validity of this analysis. The fact that the 3rd of the chord (A) is missing adds to the ambiguity of the chord, but in cases of ambiguity, the resolution tends to determine the identity of the ambiguous chord. For this reason, the chord was analyzed as a major-minor seventh chord on F-sharp with the 3rd of the chord missing.

It will be noted that the tone E is sustained against the B major triad of the third measure. Since the triad is complete, the tone E functions as a pedal point and is therefore nonharmonic in function. The presence of the tone E does, however, contribute the sonority of an added perfect 4th to the texture even though nonharmonic in function. Consequently, suggestions of quartal chords are continued.

In Example 30 several general tendencies of the entire movement may be observed. The perfect 4th is prominent both melodically and harmonically. The technique of using one or several intervals prominently both as a melodic and a harmonic interval has been used by Béla Bartók in his string quartets and is a technique exploited by many twentieth-century composers. Prominent use of quartal chords has been exploited by Paul Hindemith, and this is also a modern technique.

Ex.31

Example 31 (measures 64-70) is of considerable interest. In the first six measures there are only four different tones used, either melodically or harmonically (A, B, D, and E). The lowest part (played by the viola) plays an arpeggiation of these tones against the melodic line (played by the oboe). Because of the complete freedom with which the four tones are used, both harmonically and contrapuntally, the effect is one of pandiatonicism restricted to the use of four tones. This could be considered as an example of pandiatonic writing within a tetratonic scale!

The resolution of the tones B and D of the middle staff to D and C-sharp respectively (in the seventh measure) clearly implies that B and D were actually nothing more than a double appoggiatura, and that all melodic use of these tones was nothing more than free doubling of nonharmonic tones - a very traditional technique of composition. Nevertheless, the duration of the quartal sonority gives considerable prominence to it.

Both Example 30 and Example 31 demonstrate typical ways in which the composer incorporates modern chord sonorities and techniques of composition into his style without

incongruity, by using traditional resolutions of dissonance.

Carl Nielsen is certainly not a revolutionary composer, all of his changes in technique being derived by evolution from traditional practices. Examination of his music is nevertheless of value, for it reveals a general and steady growth from the writing of the nineteenth century into the twentieth. By studying a somewhat conservative composer, the relationship of modern sonorities to their use in the past is made clear. In the fifth symphony, modern types of sonority are used too prominently to be considered entirely non-essential harmony, even though resolved as such. This is an intermediate stage, where the new sonorities are not well enough accepted to permit use without some sort of resolution, and therefore tend to be resolved in a traditional manner. The composer has therefore not quite reached the level where such sonorities are entirely accepted and can be used freely without resolution.

Chords

Table LXVII - Tabulation of Chords
Symphony Number Five - Second Movement

Triads							
Major	46.8% 295	Minor	42.5% 268	Augmented	2.1% 13	Diminished	8.7% 55
Seventh Chords							
Major-minor	34.8% 147			Major-major	6.9% 29		

Table LXVII - Continued

Seventh Chords - Continued			
Minor-minor	28.1% 119	Minor-major	3.1% 13
Augmented-minor	.5% 2	Augmented-major	.9% 4
Diminished-minor	18.9% 80	Diminished-diminished	6.9% 29

Ninth Chords			
Major-minor-minor	1	Major-minor-major	17
Major-(no 7th)-minor	2	Major-(no 7th)-major	9
		Major-major-major	13
Minor-minor-minor	3	Minor-minor-major	13
Minor-(no 7th)-minor	8	Minor-(no 7th)-major	14
Augmented-minor-major	1	Augmented-(no 7th)-major	2
Diminished-minor-minor	2	Diminished-minor-major	1

Eleventh Chords	
Major-minor-major-perfect	7
Major-minor-(no 7th)-perfect	4
Minor-minor-minor-perfect	1
Minor-minor-major-perfect	2
Minor-(no 7th)-major-perfect	1
Minor-(no 7th)-major-augmented	2
Diminished-minor-minor-perfect	0
Diminished-minor-(no 9th)-perfect	1

Table LXVII - Continued

Thirteenth Chords	
Major-major-major-(no 11th)-major	0
Major-major-major-augmented-major	0

Augmented Sixth Chords			
Italian 1	French 5	German 0	Minor-German 0

Chords with Added Tones			
Major plus 6th	4	Major plus augmented 4th	6
Minor plus 6th	5	Major plus perfect 4th	2
Split 3rds (major and minor)			11
Split 3rds (diminished and minor)			1
Split 5ths (diminished plus perfect)			1

Seventh Chords with Added Tones	
Diminished-diminished plus minor 7th	1
Major-minor plus minor 3rd	1
Minor-minor plus major 6th	1

Quartal Chords			
Three tones	8	Four tones	3

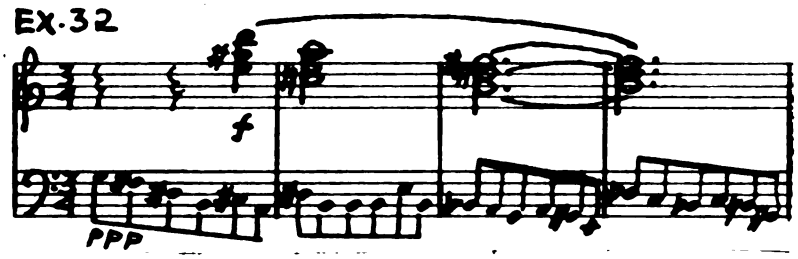
Polychords (Two triads sounding simultaneously)	
A plus E	1
A plus B	1
E plus B	1

Table LXVII - Continued

	Number of Occurrences	Percentage All Chords
Number of Triads	631	52.1%
Number of Seventh Chords	423	34.9%
Number of Ninth Chords	86	7.1%
Number of Eleventh Chords	18	1.5%
Number of Thirteenth Chords	0	
Number of Augmented Sixth Chords	6	.5%
Number of Chords with Added Tones	33	2.7%
Number of Quartal Chords	11	.9%
Number of Polychords	3	.2%
Total Number of Chords	1211	

As was mentioned earlier, the first and second movement do not vary significantly in the relative amount with which the main types of chords (triads, seventh chords, etc.) are used, the only exception being in the case of polychords, these being found only in the second movement. Since polychords have not been found in the preceding movement nor in any of the preceding symphonies, an example is given below.

Ex.32



In Example 32 (measures 183-186), the woodwind group (upper staff) is sufficiently separated in pitch and timbre from the strings (lower staff) to create the effect of polychords rather than ninth or thirteenth chords.

On the third beat of the first measure the strings outline the root and 3rd of an A major triad against the E major triad in the woodwinds. In the second measure the strings outline the root and 3rd of a B major triad against the A major triad (in first inversion) of the woodwinds. The tone E in the string parts (on the third beat) may be considered to be either a returning, free tone from B, or as an essential tone of the upper member (A major triad) of the polychord.

On the first and second beats of the third measure the sonority has been analyzed as a B major-minor seventh chord in third inversion with the 7th in the string parts. The reason for this is that even though the strings are separated from the woodwinds in both register and timbre, they do not generate a chord of their own. Since the tone A does combine with the woodwinds to form a relatively simple sonority (a seventh chord), it is analyzed as a part of this chord.

On the third beat of the third measure the tones E and G-sharp of the string part are considered sufficient to generate an E major triad against the B major triad of the woodwinds. The polychord is weakened somewhat by the lack of a 5th in the E major triad, but the separation of both register and timbre between the strings and the woodwinds seems sufficient to create the effect of a polychord.

Triads. The balance between major and minor triads is quite even, the former predominating by only a small

margin. The diminished triad is used slightly more than in the first movement but the difference is very slight.

Seventh Chords. The diminished-minor type seventh chord is unusually prevalent and outnumbers the diminished-diminished type by nearly three to one. Although this is in contrast to the preceding movement, the percentage figure for neither type is unusual in comparison to the third or fourth symphony.

Although the major-minor type is the most common type of seventh chord, it is used less than in the preceding symphony. This decrease in the use of this chord continues a well established trend.

The major-major type seventh chord is used considerably less than in the preceding movement, but the total use is not unusual in comparison to those found in the preceding symphonies.

Ninth Chords. Although used less than in the preceding movement, eight more types are used.

Eleventh Chords. Eleventh chords are used slightly more than in the first movement, and four more types are found. Although the eleventh chord is rare, only the second movement of the second symphony contained more extensive use (2.3%) and only the third movement of the sixth symphony equals it in actual percentage.

Thirteenth Chords. Thirteenth chords are not used. Considering the extreme rareness of this chord elsewhere, this is not unusual. Nevertheless, it is somewhat contrary

to the trend of this movement to contain considerable varieties of the more complicated chord sonorities.

Chords with Added Tones. The presence of seventh chords with added tones and triads with added perfect 4ths is a peculiarity of the second movement that was not found in the first movement. The first movement of the fourth symphony is the only movement of an earlier symphony to contain seventh chords with added tones. The increased use of such chords in the second movement of the fifth symphony thus forms a trend, and this trend continues in the sixth symphony.

General Observations. The general trend of the movement is toward an increased number of chord types that are used, many of which are distinctly modern. The prominence of quartal harmony and the use of polychords contribute considerably to the modernness of the movement's chord texture.

Root Movement

Table LXVIII - Tabulation of Root Movement
Symphony Number Five - Second Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	135	12.9%
By descending 2nd	150	14.4%
By ascending 3rd	104	10.0%
By descending 3rd	141	13.5%
By ascending perfect 4th	250	23.9%
By descending perfect 4th	212	20.3%
By ascending or descending tritone	53	5.1%
Total Number of Root Movements	1045	

Table LXVIII - Continued

Tabulation of Change of Sonority	
Change of Mode	53
Change of 5th	23
Change of 3rd and 5th	7

The tabulations resemble closely those of the symphony as a whole, and none of the figures are unusual in comparison to those of movements in the earlier symphonies (none are the highest nor the lowest total found in these symphonies).

In comparison to the averages of the fifth symphony, there is slightly less use of both types of root movement by perfect 4th and also slightly more use of both types of root movement by 3rd. The implications of this are modern because it tends toward a more nearly equal balance between the three main types (by perfect 4th, by 2nd, and by 3rd), but the change is only very slight.

Root movement by descending 2nd is more prevalent than that by ascending 2nd. Although this is characteristic of this symphony, the margin of numerical superiority is slightly greater in this movement than in the symphony as a whole.

The general trend of the movement is one of rather close balance between the ascending and descending forms of each type of root movement, as well as fairly equal balance between root movement by 2nd, by 3rd, and that by perfect 4th.

Keys

Table LXIX - Tabulation of Keys
Symphony Number Five - Second Movement

Measures	Key	Comments	Part of Form
		Allegro	
1-6	B	Neighboring tones on lowered 6th scale step	Exposition, First subject
7-17	b		
18-19	E		
20-24	A		
25-27	a		
28-30	A		
31-32	D or d	Split 3rds on 3rd scale step	
33-36	F		
36-37	g	Half cadence only	
37-38	Uncertain	Unison passage, tones of D-flat	
39-42	F-sharp	Chord progression: I ii iii	
43-44	E-flat		
45	e-flat		
46-49	b-flat		
50-57	g-sharp	Enharmonic modulation from French sixth chord	
58-64	a		
65-69	a	Pandiatonicism within "tetratonic" scale	
70	A		
71-78	a		
79-84	A		
85-88	D or A Mixolydian		
89-92	F	No tonic chord	
93-94	A-flat	Modulation from deceptive cadence on ♭VI	
95-115	b or e	b^7 chord either tonic chord or V^7	
116-119	Uncertain	Chromatic	Second subject
120-121	E-flat, c, or g		
122-125	e		
126-135	G		
136-140	B-flat		
141-144	b-flat		
145-149	e-flat		

Table LXIX - Continued

Measures	Key	Comments	Part of Form
150-161	Uncertain	Very chromatic	Development section
162-163	E		
164-168	Uncertain	Very chromatic	
169-179	B		
180-182	e	Unison passage	
183-187	E	Polychords, but diatonically within key	
188-190	e-flat		
191-193	Uncertain	Very chromatic, unison passage	
194-197	e		
197-199	Uncertain		
200	a	Half cadence	
201-202	Uncertain	Chromatic, unison passage	
203-205	Uncertain		
206-208	e	Not entirely clear	
209-211	Uncertain		
211-212	d		
213-215	Uncertain	Unrelated chords	
216-217	B		
219-220	a		
220-224	e-flat		
225-233	a-flat	Harmony non functional but within this key	
233-245	B	Very chromatic	
246-249	F		
249-250	g	Half cadence	
251-261	Uncertain	Chromatic, unison passage	
262-263	e		
264-265	E		
266-268	D		
268-269	d		
270-271	a		
272-275	E	"Tetratonic scale," no 3rd, 6th, or 7th scale step	
276-279	f-sharp		
280-283	c-sharp		
284-285	e		
285-287	F		
288-302	f-sharp		
303-304	Uncertain	Unison passage, chromatic	
305-316	g	Half cadence	

Table LXIX - Continued

Measures	Key	Comments	Part of Form
317-339	g or a	Many secondary dominant chords	
340-349	Uncertain	Chromatic, moving towards A-flat	
350-369	A-flat	Obscured somewhat by repeated pedal point D	
370-373	e-flat		
374-409	f		
	Presto (Fugato based on first subject)		
410-475	f	Both subject and answers in f, second voice answers at perfect 4th below, third voice at tonic	
475-487	c	Fourth voice enters at 4th below	
488-501	f	Episode	
502-505	a-flat	Episode continues, unison writing against pedal tone C	
506-518	f	Real entry, at tonic	
519-526	c	Answers at 4th below	
527-532	b-flat	Episode, chromatic	
533-537	a	Episode continues	
538-548	f	Series of secondary dominants but key clear	
549-556	f	Entry at tonic with stretto per arsin et thesin	
557-585	c	Episode, real entry at 4th below begins at 572, false entry at tonic begins at 582	
586-591	g		
592-597	c	Secondary leading tone triad of dominant	
598-603	G-flat	Very chromatic	
604	f	Real entry at tonic with stretto per arsin et thesin at 5th below	
605-616	b-flat		
617-621	f	Episode	
622-624	c		
625	B-flat	Very chromatic	

Table LXIX - Continued

Measures	Key	Comments	Part of Form
626	Uncertain		
627-682	c		
629-632	c	False entry at 4th below	
633-634	e		
635-638	d	Not certain	
639-641	G		
642-654	A-flat	No tonic chord, several dominant ninth chords	
655-662	Uncertain	Unison passage	Link to Andante section
663-686	Uncertain	Chromatic	
687-689	f or F	Augmented 6th between tones D-flat and B not resolved	
	Andante un poco tranquillo (Development)		
690-691	F	New fugato based on first subject	Statement
692-696	f		
697-698	A-flat	Answers, at minor 3rd above	
699-701	a-flat		
702-703	E-flat or A-flat	Some Mixolydian 7th, third voice answers at major 2nd below	
704-707	b-flat	Chromatic	
708	c		
709	a		
710	C		
711-712	C	Fourth voice, answer at 4th below	
713-714	F	Mixolydian 7th	
715-716	f		
717-718	F	Fifth voice, at double octave below	
719-722	f		
723-727	C	Stretto, subject slightly altered	Link to recapitulation
728	g	Episode plus another theme from first subject	
729-731	G		
732	g		
733-740	a		

Table LXIX - Continued

Measures	Key	Comments	Part of Form
741	Uncertain	Chromatic, leads to B	End of development
		Allegro (Recapitulation, at tonic)	
742-747	B		First subject
748-758	b		
759-762	A		
762-763	Uncertain	Tones of A-flat in scale passage	
764-766	C-sharp	Unison passage	
768-774	B		
775	B	Second subject, minor 3rd below original statement in the exposition	
776-779	C	a also emphasized	
780-794	E		
795-799	G		
800-803	g		
804-808	c		
809-814	c	Very chromatic unison passage plus pedal point on D	Repetition of part of development plus new development
815-820	B-flat	I, v, and V only chords used	
821-822	F-sharp	Unison passage but tonality clear	
823-827	F-sharp	Not entirely clear, chromatic	
828-838	E-flat		
839-843	D-flat	Upper parts clear, chromatic obligato	
843-845	c	Aeolian 7th plus raised 7th create simultaneous cross relationship	
846-849	B-flat-b-flat	Not clearly established	
850-853	a-flat		
853-858	f-sharp	Half cadence	
859-868	E-flat		
869-873	e-flat		
874-880	E-flat		

Table LXIX - Continued

Measures	Key	Comments	Part of Form
881-883	e-flat		
884-885	c	(Emphasis of ii in E-flat)	
886-887	e-flat		
888-889	B-flat	(Emphasis of V in E-flat)	
890-914	E-flat Mixolydian	Minor dominant chord, v	

Modulations to keys a perfect 4th distant are very rare in the exposition and in the recapitulation, only six having been found in the former, and two in the latter sections. In the first fugato (Presto), 10 out of a total of 21 modulations are of this type, but this is not unusual because all of the imitations (or answers) are at the perfect 4th. In the second fugato (Andante un Poco Tranquillo) only five out of seventeen modulations are to keys a perfect 4th distant. This is not unusual either when it is recalled that in this fugato the imitations (or answers) of the subject tend toward distinctly non-traditional intervals (the minor 3rd above, and major 2nd below, and double octave below).

The use of unusual intervals of imitation is typical of some twentieth-century composers, most especially, Béla Bartók in his string quartets and other works. For this reason, the second fugato is quite modern, both in intervals of imitation, and because of the melodic line of the fugato's subject (outlining a quartal chord).

Modulations by 2nd and by 3rd occur often in this movement, and many different types are found (both to closely related as well as to very remote keys).

Modulations by augmented 4th are found, but they are exceedingly rare. The only examples found are from A minor to E-flat major (measure 220), from B major to F major (measure 246), and C minor to G-flat minor (measure 598).

From measure 284 through measure 350 there is an interesting sequence of four modulations all to keys a minor 2nd higher than the preceding key, although there is some uncertainty of tonality from measure 317 through 349. Nevertheless, four keys each a minor 2nd above the preceding one are successively established.

From measure 838 to measure 853 a sequence of five modulations is found, all to keys a 2nd lower (four, a major 2nd, one, a minor 2nd). Once more, there is some doubt as to the key, C minor not being clearly established, but the pattern is otherwise quite clear.

General Observations. Modulations to keys a perfect 4th distant are quite rare and foreign modulations are used extensively. Since this is found in some music of the nineteenth century as well as some of the twentieth century, it is difficult to determine whether the key system of this movement is necessarily modern. The types of chords used and the frequencies that they and the various types of root movement are used would seem a more reliable indication of the modernness of a composition. On this basis, it is clear

that the fifth symphony is a considerably more modern work than its immediate predecessor, the fourth symphony. It is also clear that there is nothing about the modulation scheme used that particularly marks it as being especially antiquated in concept.

CHAPTER VIII

SYMPHONY NUMBER SIX (SINFONIA SEMPLICE), 1924-25

I. THE SYMPHONY AS A WHOLE

Introductory Comments

The sixth symphony is the composer's last symphony, but not his last composition, the flute and the clarinet concerti, as well as the organ work Commotio being written later. The title, Sinfonia Semplice, suggests that the work might be very traditional, or a return to the practices of an earlier time. This proves to be true only in the case of the form, a return to the traditional four movements with each distinctly separated from one another. Not only are the four movements each self-contained, there is no cyclical use of themes to closely interrelate them. On the other hand, there is no regression found in the chord tabulation; there are, in fact, some notable advances both in types of chords as well as the frequencies with which they are used. The form of the individual movements (to be discussed in the introductory comments for each movement) is

not especially traditional either, except for the finale, which is a theme and variations, a form used by both Beethoven and Brahms.

This work in general shows growth in a modern direction - growth clearly evolved from tendencies found in the composer's earlier symphonies. There are further developments of chords with simultaneous cross relation, greater use of polychords than in the earlier symphonies, and chords composed entirely of perfect 5ths (not found in any of the earlier symphonies) are used.

Ambiguity of tonality as well as polytonality are found in the sixth symphony, and the second movement contains some nearly atonal passages; but the composer generally remains a writer of tonal music. The concept of tonality is expanded to include modes such as the Dorian and Mixolydian, but a recognizable tonality generally prevails.

The sixth symphony is a very controversial work, written in a time of sickness (heart disease) as Robert Simpson mentions.[1] Simpson also mentions criticisms of the work, especially the very grotesque second movement entitled Humoreske.[2]

Since the primary work of this treatise is description rather than evaluation, it would not be appropriate to discuss the artistic value of the sixth symphony here;

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[1]Robert Simpson, op. cit., p. 115.

[2]Ibid., p. 116.

but, the nearly atonal passages of the Humoreske have no antecedent in the movements of the preceding symphonies, in itself unusual for Nielsen.

Whatever the artistic value of the sixth symphony may be, it is clear that its composer was not a reactionary, but rather one who was aware of the latest developments in music, and one who was not unwilling to absorb some of these into his own technique of composition.

Chords

Table LXX - Tabulation of Chords
Symphony Number Six - Totals From All Movements

Triads

Major	Minor	Augmented	Diminished
50.9% 564	32.6% 362	4.8% 53	11.7% 130

Seventh Chords

Major-minor	28.0% 151	Major-major	13.0% 70
Minor-minor	26.7% 144	Minor-major	3.3% 18
Augmented-minor	1.5% 8	Augmented-major	2.4% 13
Diminished-minor	16.0% 86	Diminished-major	.4% 2
Diminished-diminished	8.7% 47		

Ninth Chords

Major-minor-minor	2	Major-minor-major	25
Major-(no 7th)-minor	4	Major-(no 7th)-major	14

Table LXX - Continued

Ninth Chords - Continued			
		Major-major-major	10
Minor-minor-minor	2	Minor-minor-major	10
Minor-major-minor	1	Minor-major-major	1
Minor-(no 7th)-minor	4	Minor-(no 7th)-major	2
Augmented-minor-major	1	Augmented-major-major	1
Augmented-(no 7th)-major	3		
Diminished-minor-major	9	Diminished-minor-major	3
Diminished-(no 7th)-minor	5	Diminished-(no 7th)-major	2
Diminished-diminished-minor	1	Diminished-diminished-major	1
Eleventh Chords			
Major-minor-major-perfect	2	Major-minor-major-augmented	1
Major-minor-(no 9th)-perfect	2	Major-major-major-augmented	1
		Major-(no 7th)-major-augmented	1
Minor-minor-minor-diminished	1	Minor-minor-minor-augmented	1
Minor-minor-(no 9th)-perfect	1	Minor-major-major-augmented	1
Minor-minor-major-perfect	1		
Diminished-minor-major-diminished	1	Diminished-(no 7th)-major-perfect	1
Thirteenth Chords			
Major-minor-major-perfect-major	2	Major-major-major-perfect-major	1
Major-minor-major-(no 11th)-major	1		
Minor-minor-major-perfect-major	1	Minor-major-major-perfect-major	1
Diminished-minor-minor-diminished-minor	1		

Table LXX - Continued

Augmented Sixth Chords			
Italian 8		French 29	German 5
Triads with Added Tones			
Major plus major 6th	20	Major plus major 6th and major 9th	1
Major plus augmented 4th	1		
Minor-plus major 6th	3	Diminished-plus major 6th	1
Triads with Split 3rds			
Major plus minor 3rd (or minor plus major 3rd)			20
Augmented plus minor 3rd	1	Diminished plus major 3rd	1
Triads with Split 5ths			
Major-plus augmented 5th	1	Major-plus diminished 5th	1
Diminished plus perfect 5th	3		
Triads with Both Split 3rds and 5ths			
Major plus minor 3rd and diminished 5th			1
Major plus minor 3rd and augmented 5th			1
Seventh Chords with Added Tones			
Major-minor plus minor 6th			3
Major-minor plus major 6th			1
Seventh Chords with Split 3rds			
Major-minor plus minor 3rd			3

Table LXX - Continued

Seventh Chords with Split 5ths	
Major-minor plus augmented 5th	1
Major-major plus diminished 5th	1
Minor-major plus augmented 5th	1
Seventh Chords with Split 7ths	
Major-minor plus major 7th	3
Augmented-minor plus major 7th	3
Diminished-minor plus diminished 7th	2
Diminished-minor plus major 7th	1
Ninth Chords with Split 3rds	
Major-minor-major plus minor 3rd	2
Ninth Chords with Split 5ths	
Major-minor-major plus augmented 5th	2
Ninth Chords with Split 7ths	
Major-minor-major plus major 7th	1
Ninth Chords with Split 9ths	
Minor-minor-minor plus major 9th	1
Eleventh Chords with Split 3rds	
Minor-minor-minor-augmented plus major 3rd	1
Diminished-minor-major-perfect plus major 3rd	1
Augmented Sixth Chords with Split 6ths	
German Sixth plus major 6th	1

Table LXX - Continued

Augmented Sixth Chords with Added Tones	
French Sixth plus major 7th	1
Quartal Chords	
with three tones	9
with four tones	4
with five tones	6
with six tones	1
Polychords	66

	Number of Occurrences	Percentage All Chords
Number of Triads	1109	56.0%
Number of Seventh Chords	539	27.2%
Number of Ninth Chords	101	5.1%
Number of Eleventh Chords	14	.7%
Number of Thirteenth Chords	7	.4%
Number of Augmented Sixth Chords	42	2.1%
Number of Chords with Added Tones	84	4.2%
Number of Polychords	66	3.3%
Number of Quartal Chords	20	1.0%
Total Number of Chords	1982	

Triads. Slightly more than one-half of all chords found are of this type. This total is low in comparison to the preceding symphonies, only the fifth symphony having a lower total.

The proportion of major triads is lower than in any of the other five symphonies, and the proportion of both the augmented and diminished types is higher. The proportion

of minor triads is not unusual. Consequently, the four types of triads are more nearly equal in their total amount of use than was found in any of the other symphonies.

The increased use of the diminished triad is in accordance with the trend established in the first five symphonies.

The augmented triad was used most frequently in the second symphony, and less in each symphony that followed. The increase found in the sixth symphony is therefore sudden and unheralded - a distinct peculiarity of the symphony.

Seventh Chords. Seventh chords are used less than in any of the preceding symphonies except the fourth, which contained the least.

Although the major-minor seventh chord remains the most prevalent type, it accounts for a smaller percentage of all seventh chords than was found in any of the preceding symphonies. This decrease is in accordance with a trend of decreased use, a trend which is modern in implications.

The major-major seventh chord is more prevalent than in any of the other symphonies, and is used approximately twice as frequently as it was in the first symphony (the symphony containing the fewest examples of this type of chord).

The minor-minor type, although neither unusually high nor unusually low in its frequency of use, is closer (in per cent of all seventh chords) to the major-minor type than in any of the other symphonies.

The minor-major, augmented-minor, and augmented-major types of seventh chords are all rare, but each is used more extensively than in any other of these symphonies. The implication of this is one of modernness, because these chords contribute variety to the texture, and because the first and last mentioned types are quite dissonant (containing a major 7th).

The diminished-minor type is not unusual in the amount of use, but conforms to a trend by outnumbering the diminished-diminished type by a substantial margin.

The diminished-diminished type is used less than in any of the other symphonies except the fifth (which contains the least use of this chord).

The diminished-major type is exceedingly rare, the fourth symphony being the only other one that contains it.

The sixth symphony continues a trend toward a more nearly equal use of most types of seventh chords. The implications of this and of most changes in the amount that the various types of seventh chords are used are modern, especially the decreased use of the major-minor type.

Ninth Chords. There are two types that were not found in any of the other symphonies, the minor-major-minor, and the augmented-major-major. The trend is one of increase in the number of types used, and in general many types (especially ones lacking 7ths) are found.

Eleventh Chords. Although eleventh chords remain rare, only the fifth symphony contains more. The employment

of six new types (major-major-major-aug., major-(no 7th)-major-aug., minor-minor-minor-dim., minor-major-major-aug., dim.-minor-major-dim., and dim.-(no 7th)-major-perfect) contributes variety to the sonority of the work, and is modern in implications.

It will be noted that in the minor-minor-minor-diminished type of eleventh chord the diminished eleventh has the sonority of a split 3rd. It has been classified as an eleventh chord because the diminished eleventh is in a higher octave than the 3rd and consequently functions as an eleventh.

Thirteenth Chords. Although this chord is extremely rare, having a total of less than one per cent of all chords, it is used more than in any of the other symphonies.

Augmented Sixth Chords. The sixth symphony has a higher proportion of this type of chord than was found in any of the other five symphonies, and the French type remains the most prevalent. The increase is opposite to an established trend, and connotes a slight regression towards the practices of the nineteenth century.

Chords with Added Tones. These are nearly twice as common as they were in the fifth symphony and are a significant part of the chord texture. The simultaneous cross relation which is prominent in many of these chords (split 3rds, 5ths, etc.) is particularly characteristic of many twentieth-century compositions. These cross relations have clearly evolved from the use of these same sonorities as

nonharmonic tones, sonorities found as early as in the first symphony.

Quartal Chords. Although quite rare, quartal chords are more prevalent than either ninth or eleventh chords, and the use of chords composed entirely of perfect 5ths is peculiar to this symphony (not found in any of the others).

Polychords. These are used more than eleventh, thirteenth, augmented sixth, or quartal chords. Where the polychords found in the fifth symphony were all within the prevailing key, those found in the sixth symphony are sometimes polytonal. Both the increase in use and the use with polytonality are significant advances in style. Evolution is again clear in this development. The first stage was the use of eleventh chords, then separation of this into two distinct chords (both in the same key), and finally the simultaneous use of two chords that are in different keys. The dissonant counterpoint (also polytonal) of the fifth symphony is another antecedent of the final stage, for it supplies the element of polytonality.

General Observations. The configuration of the chord tabulation is decidedly modern, most changes being the culmination of a rather steady evolution. The most significant changes are the increased use of polychords (especially when used polytonally) and of chords with added tones. The general tendency toward an increased number of chord types is also significant, for these contribute considerable variety to the chord texture of the sixth symphony.

Root Movement

Table LXXI - Tabulation of Root Movement
Symphony Number Six - All Movements

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	230	13.8%
By descending 2nd	246	14.7%
By ascending 3rd	182	10.9%
By descending 3rd	257	15.4%
By ascending perfect 4th	354	21.2%
By descending perfect 4th	273	16.4%
By ascending or descending tritone	126	7.6%
Total Number of Root Movements	1668	

Tabulation of Change of Sonority	
Change of Mode	104
Change of 5th	64
Change of 3rd and 5th	23

Root Movement by 2nd. The statistics for neither type (ascending or descending) are unusually high. The predominance of root movement by descending 2nd over that by ascending 2nd is a peculiarity found only in the fifth symphony. It is therefore unusual as an average for an entire symphony, but not for a single movement.

Root Movement by 3rd. Both types are used more extensively than in any of the other five symphonies, and that by descending 3rd is even more prevalent than either type of root movement by 2nd.

Root Movement by Perfect 4th. Root movement by descending perfect 4th is used less than in any of the other symphonies, but it is nevertheless more prevalent (in this symphony) than all other types except that by ascending perfect 4th. The total number of root movements by perfect 4th is also lower than was found in any of the other symphonies.

Root Movement by Tritone. Although greatly outnumbered by each of the other types, there is a substantial increase in the use of root movement by tritone to a higher total than was found in any of the other symphonies. This increase is unheralded and is contrary to a trend of nearly equal use in each of the other symphonies.

General Observations. The over-all decrease in root movement by perfect 4th is modern in implication as is the generally quite even distribution (in per cent) of all types of root movement.

The notable prominence of root movement by 3rd (especially that by descending 3rd) and increased use of that by tritone are the most distinctive peculiarities found in the tabulation.

In the sixth symphony, both the root movement and use of chords are interesting, differing considerably from the earlier works. This is in itself unusual, for the composer generally balances unusual root movement by a conservative chord texture or vice versa. Thus the over-all change

is greater in the sixth symphony than has generally been the case in the preceding symphonies.

Changes of Sonority. Changes of sonority in general dropped considerably in total after the first symphony to a low in the third symphony, but their use has increased considerably in the sixth symphony where they are again a significant factor in the texture of the music.

Change of mode is used quite extensively, more so than in all but the first symphony. Change of 5th is more prevalent than in any of the other symphonies. Change of 3rd and 5th is equal in the number of occurrences to that found in the second symphony, and the total is unsurpassed in any of the other symphonies.

The increased use of change of sonorities (prominent in the first symphony) and the increased use of the augmented sixth chord (generally prominent in the nineteenth century) are the only two elements found in the tabulation that seem to imply regression to the practices of an earlier time. Both of these changes are unusual because they are contrary to trends from the first to the fifth symphony. Perhaps the composer has regressed slightly in style in carrying out the intention implied in the title of the work, Sinfonia Semplice. Nevertheless, increased use of changes of sonority is very minor in importance in comparison to the notable advances in the types of chords and their amount of use.

II. THE FIRST MOVEMENT

Introductory Comments

The form of the first movement is closely related to sonata form, as was the case in the opening movements of all the other symphonies except the fifth, which was in binary form. The tendency toward continuous new development in the recapitulation is present to such an extent that it is difficult to determine where the recapitulation begins. Thus this movement contains a natural outgrowth of tendencies noted in the earlier works. Another trend of the earlier symphonies which continues in this movement is one of considerable development of melodic fragments. Unison passages were found in all of the preceding symphonies and continue to be used in this movement.

One peculiarity of this movement is that a very important theme of the first subject fails to reappear in the recapitulation, but basically the movement resembles its predecessors in both length and form.

A fugato is found beginning at measure 54. Fugatos have, of course, been used in all of the preceding symphonies except the first, and generally with the traditional answer at the 5th above. In the fifth symphony some very unusual intervals of imitation were found, but in the first movement of the sixth symphony the composer returns to the more traditional answer at the dominant. This seems to carry out the meaning implied in the work's title (Sinfonia Semplice).

The most distinctly odd thing about the movement is the failure of an important theme to reappear in the recapitulation, a peculiarity not found in any of the other symphonies. All other changes are either in the nature of extending principles applied in the earlier works, or else of a return to more traditional practices.

Chords

Table LXXII - Tabulation of Chords
Symphony Number Six - The First Movement

Triads

Major	Minor	Augmented	Diminished
54.3% 294	32.9% 178	2.8% 15	10.0% 54

Seventh Chords

Major-minor	27.6% 71	Major-major	12.8% 33
Minor-minor	28.4% 73	Minor-major	1.9% 5
Augmented-minor	1.2% 3	Augmented-major	1.6% 4
Diminished-minor	14.8% 38	Diminished-major	0
Diminished-diminished	11.7% 30		

Ninth Chords

Major-minor-minor	2	Major-minor-major	5
Major-(no 7th)-minor	1	Major-(no 7th)-major	3
		Major-major-major	3
Minor-minor-minor	2	Minor-minor-major	4
Minor-major-minor	1	Minor-major-major	0

Table LXXII - Continued

Ninth Chords - Continued			
Minor-(no 7th)-minor	0	Minor-(no 7th)-major	1
Augmented-minor-major	1	Augmented-major-major	0
Augmented-(no 7th)-major	2		
Diminished-minor-minor	6	Diminished-minor-major	2
Diminished-(no 7th)-minor	2	Diminished-(no 7th)-major	0
Diminished-diminished-minor	0	Diminished-diminished-major	1
Eleventh Chords			
Major-minor-major-perfect	0	Major-minor-major-augmented	0
Major-minor-(no 9th)-perfect	1	Major-major-major-augmented	0
		Major-(no 7th)-major-augmented	0
Minor-minor-minor-diminished		Minor-minor-minor-augmented	1
Minor-minor-(no 9th)-perfect	1	Minor-major-major-augmented	0
Minor-minor-major-perfect	0		
Diminished-minor-major-diminished	0	Diminished-(no 7th)-major-perfect	0
Thirteenth Chords			
Major-minor-major-perfect-major	0	Major-major-major-perfect-major	0
Major-minor-major-(no 11th)-major	0		
Minor-minor-major-perfect-major	0	Minor-major-major-perfect-major	0
Diminished-minor-minor-diminished-minor	0		
Augmented Sixth Chords			
Italian 5		French 16	German 4

Table LXXII - Continued

Triads with Added Tones			
Major plus major 6th	0	Major plus major 6th and major 9th	0
Major plus augmented 4th	0		
Minor-plus major 6th	2	Diminished-plus major 6th	0
Triads with Split 3rds			
Major plus minor 3rd (or minor plus major 3rd)			13
Augmented plus minor 3rd	0	Diminished plus major 3rd	0
Triads with Split 5ths			
Major-plus augmented 5th	0	Major-plus diminished 5th	0
Diminished plus perfect 5th	0		
Triads with Both Split 3rds and 5ths			
Major plus minor 3rd and diminished 5th			0
Major plus minor 3rd and augmented 5th			0
Seventh Chords with Added Tones			
Major-minor plus minor 6th			1
Major-minor plus major 6th			0
Seventh Chords with Split 3rds			
Major-minor plus minor 3rd			0
Seventh Chords with Split 5ths			
Major-minor plus augmented 5th			0
Major-major plus diminished 5th			0
Minor-major plus augmented 5th			0

Table LXXII - Continued

Seventh Chords with Split 7ths	
Major-minor plus major 7th	0
Augmented-minor plus major 7th	0
Diminished-minor plus diminished 7th	0
Diminished-minor plus major 7th	0
Ninth Chords with Split 3rds	
Major-minor-major plus minor 3rd	0
Ninth Chords with Split 5ths	
Major-minor-major plus augmented 5th	1
Ninth Chords with Split 7ths	
Major-minor-major plus major 7th	0
Ninth Chords with Split 9ths	
Minor-minor-minor plus major 9th	1
Eleventh Chords with Split 3rds	
Minor-minor-minor-augmented plus major 3rd	0
Diminished-minor-major-perfect plus major 3rd	0
Augmented Sixth Chords with Split 6ths	
German Sixth plus major 6th	1
Augmented Sixth Chords with Added Tones	
French Sixth plus major 7th	0
Quartal Chords	
with three tones 0	with four tones 0 with five tones 0

Table LXXII - Continued

Polychords	19

	Number of Occurrences	Percentage All Chords
Number of Triads	541	60.1%
Number of Seventh Chords	257	28.6%
Number of Ninth Chords	36	4.0%
Number of Eleventh Chords	3	.3%
Number of Thirteenth Chords	0	
Number of Augmented Sixth Chords	25	2.8%
Number of Chords with Added Tones	19	2.1%
Number of Polychords	19	2.1%
Number of Quartal Chords	0	
Total Number of Chords	900	

Triads. The percentage of triads is higher than average for this symphony, but both the augmented and diminished types are less prevalent than usual. Both of these changes, although slight, are of a conservative nature.

Seventh Chords. There is a slight increase in the use of seventh chords. The minor-minor type outnumbers the major-minor, a progressive feature found in several other movements of these symphonies (the first movement of the fourth symphony, and the second movement of the third symphony). Use of the diminished-diminished type has also increased, but remains less prevalent than the diminished-minor type, and therefore does not deviate significantly from the trend.

Eleventh Chords. Although the total number used is identical in per cent to the average for this symphony, the

number of types is restricted to only three, all based on the major or minor triad.

Thirteenth Chords. The total absence of this type of chord is a conservative factor but not very significant in view of the extreme rareness of this chord in this symphony.

Chords with Added Tones. These are exactly one-half as prevalent as average for the sixth symphony, and only six types are used, another conservative factor in the chord texture.

Quartal Chords. These are not found. Although quartal chords are rare in this symphony, they tend to be used prominently when they appear. The total absence of these chords is therefore more significant than that of thirteenth chords, and is a conservative factor in the first movement.

Polychords. Polychords are less prevalent than usual, but not significantly so in view of their rareness elsewhere in this symphony.

General Observations. Most deviations of the chord tabulations from the norm are moving in a conservative direction, but are slight, and in no sense imply a complete return to the practices of the nineteenth century. Such deviations from the norm as are found would tend to contrast with other movements, and this contrast between movements is typical of the composer.

Root Movement

Table LXXIII - Tabulation of Root Movement
Symphony Number Six - First Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	105	13.7%
By descending 2nd	121	15.8%
By ascending 3rd	79	10.3%
By descending 3rd	112	14.6%
By ascending perfect 4th	172	22.5%
By descending perfect 4th	115	15.0%
By ascending or descending tritone	62	8.1%
Total Number of Root Movements	766	

Tabulation of Change of Sonority	
Change of Mode	54
Change of 5th	13
Change of 3rd and 5th	11

The tabulations are extremely close in per cent to the tabulations of the symphony as a whole. The first movement therefore tends to establish a norm for the symphony but contain no unusual features in the use of root movement.

Changes of Sonority. More than one-half of all changes of mode found in this symphony are in the first movement, and only slightly less than half of all changes of 3rd and 5th. Since such changes of sonority were characteristically abundant in the first symphony and became progressively rarer in the symphonies that followed, this represents somewhat of a return to the practices of an earlier time. These practices

are, however, probably more characteristic of the composer's first symphony than of the compositions of others who wrote during the nineteenth century.

Keys

Table LXXIV - Tabulation of Keys
Symphony Number Six - First Movement

Measures	Key	Comments	Part of Form
1-3	G	First Theme	
4-7	g		
8-10	G	Second Theme (does not appear in recapitulation)	
11-12	C		
13	e-flat		
14	f		
15-16	g		
17-20	e-flat-E-flat	Mostly minor	
21-24	e-flat-E-flat	Third Theme (melodic fragment) plus second Theme	
24-28	B-flat-b-flat	V of E-flat emphasized	
29-30	A-flat	IV of e-flat	
31-32	B	VI of e-flat	
33	E-flat		
34	A-flat	IV of E-flat	
35-36	D-flat	VII of E-flat	
38	a	v of d following	
39	d	ii of C following	
40	C		
41-44	c	Natural or Aeolian 7th	
46-49	Uncertain	Chromatic, C still prominent	
50	B		
51	b	Natural or Aeolian 7th	
52-53	E Mixolydian		
53	C		
54-56	e	Third Theme, fugato	
57	b	Answer, at perfect 4th below	
58	D		

Table LXXIV - Continued

Measures	Key	Comments	Part of Form
59-60	a	Answer, at perfect 5th below	
61	C		
62	g	Answer, at octave below	
63	e		
64	G		
65	B-flat		
66-67	E	Third Theme used as countersubject of fugato	
68	e		
69	E-e	Chromatic changes between major and minor 3rd and 7th scale steps	
70-71	E		
72-74	A-a	Considerable change of mode	
75-77	c-C		
78	G	Emphasis of V	
79	c		
80-81	G	Development of third theme	
82-83	b		
84	a		
85-86	b or e	Very chromatic	
87	A		
88-89	E and C-sharp	Polytonality	
89-91	A and c-sharp	Polytonality	
91	c-sharp and f	Polytonality	
92	f and F	Simultaneous use of both modes	
93	F and A	Polytonality	
94	a		
95	e-E	Change of mode	
96	B Mixolydian		
97	b-B Mixolydian		
98-99	A-flat and f	Polytonality	
100	f	Very chromatic	
102	A-flat	III in f	
103	f		
104	f-F	Scale of C in bass	
105-106	a-flat-A-flat	Very chromatic	

Table LXXIV - Continued

Measures	Key	Comments	Part of Form
106	A-a		
107	f or C	Close cross relation	
108-109	F-sharp and f	Polytonality	
109	B-flat-b-flat		
110-113	F-sharp	Very clear	
114	C-sharp	V of F-sharp	
115	c-sharp		
116	A	(III of f-sharp)	
117	a		
118	A		
119-122	D	(VI of f-sharp)	
122-125	f-sharp		
125-128	F-sharp		
129-136	E		
137-140	a	Not clear e, and d only chords	
141-142	a	Fugato, same subject as measure 54	
142-145	g-sharp	Answer at minor 9th below	
145-147	b-flat	Answer at minor 2nd above	
147	E	(becomes III of c-sharp following)	
148-149	c-sharp	Answer at minor 6th below	
150-151	B	(end of fugato)	
152-153	A-flat	Second Subject	
154	F		
155-156	D-flat		
156-158	D-d	Themes one and two	
159	F	No tonic chord	
160-161	F-sharp	Second theme	
161-162	b	(iv in f-sharp)	
162-163	F-f		
163-164	C-c	Chords nearly atonal, key implied by second theme	
164-168	Uncertain	Unison writing, very chromatic	
168-170	b-flat		
171-172	B-flat and E-flat	Polytonality	
173	a-flat		
173-174	G-g	First theme, altered melodically and harmonically	
174-175	d		
176-178	B-flat and G-flat	Polytonality	

Table LXXIV - Continued

Measures	Key	Comments	Part of Form
178	Uncertain	Very chromatic	
179-180	b-flat		
181	A-flat	Somewhat obscured by added augmented 5th to tonic chord	
182-184	B	Polychords, but basically within key	
185-186	B	Very clear tonality	
187-191	c	First theme	
192-203	a-flat-A-flat	Natural 7th	
204-205	e-flat		
206-207	F-sharp	Stretto on first theme	
208-209	a		
210-211	c		
213-214	g		
214	Uncertain		
215-218	D	Some emphasis of IV	
218-219	a		
220-221	C		
221-225	b-flat		
226	C	(becomes VI of e)	
227-230	e	Clear tonality	
231-236	f	First theme continues, rhythmic patter of fugato in accompaniment	
237	f	Fugato, third theme	
238	f and d-flat	Polytonality, tonal answer at 5th below	
239-240	f, b, and a	Polytonal counterpoint. Essential harmony forms whole tone chord spelled C D E F-sharp G-sharp	
241-242	Uncertain	Preceding whole tone chord resolves to an augmented-minor seventh chord on F - another whole tone chord	
242-244	c	Quite clear	
245-251	f	Some picardie 3rds, also emphasis of relative major A-flat	
251-253	A	Becomes III in f-sharp following	

Table LXXIV - Continued

Measures	Key	Comments	Part of Form
254-257	f-sharp	Some emphasis of V	
257-265	a-flat-A-flat	Coda based on first theme	

The first movement is in general highly chromatic. Consequently there are a large number of pseudo-modulations which are actually nothing more than temporary emphases of chords within the prevailing key; what Schenker would call "tonicization." Although chromaticism was very characteristic of some compositions of the nineteenth century, it would be incorrect to consider it as necessarily being old fashioned. When used in conjunction with modern harmonies (both chord and chord progressions) there is nothing especially antiquated about the effect. Prokofief, for example, is a composer who frequently used this type of writing. The first movement occasionally sounds particularly like that of this Russian composer. Example 33 (measures 50-52) shows a passage which resembles the writing of this composer.

Ex.33

Another prominent element in this movement is polytonality. The following key relationships have been found: two major keys a minor 2nd apart (measures 88-89); two major keys a major 3rd apart (measure 93); two major keys a perfect 4th apart (measures 171-172); a major key and a minor key a major 3rd above (89-91); a major key and a minor key a major 7th above (measure 108); two minor keys a major 3rd apart (measure 91, also measure 238); simultaneous use of a major key and its parallel minor key (measure 92); three minor keys, one an augmented 4th below the first, the other a minor 6th below (measure 239).

One historical antecedent of polytonality is modulation. Modulations to keys a perfect 4th away are of course very traditional. In the sixth symphony this key relationship appears simultaneously. Similarly, both modulation between relative major and minor keys, and changes between parallel major and minor keys are very traditional; and these are now used simultaneously. Finally, 3rd relation was well established as a commonly-used modulation in the late nineteenth century, and perhaps leads to the simultaneous use of this key relationship in this movement.

Another historical antecedent of polytonality (in the case of Carl Nielsen) is the use of unusual intervals of imitation found in his fifth symphony. These were used with tonal alterations which prevented polytonality. In the sixth symphony we now find "real" imitations without such alterations, and the result is polytonality.

From all of these considerations it is apparent that the composer has reached polytonality by a process of natural evolution, as is typical of most of his growth in techniques of composition.

General Observations. The two most significant elements found in the tabulation of keys are the continued use of highly chromatic writing (but with typically modern chord selections), and the use of polytonality (derived by natural evolution).

III. THE SECOND MOVEMENT

Introductory Comments

The second movement is the most modern-sounding movement found in any of the six symphonies. The effect is caused by melodic lines that are often very disjunct, extensive use of chords with added tones, polytonality, and passages which are nearly atonal.

Although tone rows are not used (not unusual since Schönberg had not yet used them either), a large number of accidentals are found which are used in ways that defie traditional concepts of tonality (complete lack of functional harmony, lack of resolutions of either dissonance or of melodic tones). Real doublings (melodic doublings at a constant interval) create the effect of polytonality. One other unusual element is a completely nonfunctional glissando in the trombone part which is unrelated to the harmony of the other parts - an effect not used elsewhere in

any of the six symphonies.

The title of the movement is also peculiar. Although other examples may exist, this writer is not aware of another symphony containing a movement entitled Humoreske (or its equivalent in some other language). This constitutes quite a deviation from traditional practices, especially for this composer who has previously gravitated toward a scherzo-like movement as either the third or sometimes the second movement.

Basically, there are two main themes found in this movement. The first is of a rather atonal and dissonant nature and contains very disjunct melodic lines. The general style of this theme resembles that of the Polka from The Golden Age Ballet by Shostakovich. The second theme resembles a folk dance but also contains some rather grotesque characteristics. Melodic fragments are developed, as is characteristic of this composer, but there is very little interspersion of the two themes. Because of this and the fact that there is no return to the first theme after the second is presented, the movement is basically binary in form.

Chords

Table LXXV - Tabulation of Chords
Symphony Number Six - Second Movement

Triads

Major	Minor	Augmented	Diminished
47.2% 58	26.0% 32	11.4% 14	15.4% 19

Seventh Chords

Major-minor	24.3% 17	Major-major	7.1% 5
Minor-minor	22.9% 16	Minor-major	7.1% 5
Augmented-minor	4.3% 3	Augmented-major	7.1% 5
Diminished-minor	20.0% 14	Diminished-major	1.4% 1
Diminished-diminished	5.7% 4		

Ninth Chords

Major-minor-minor	0	Major-minor-major	3
Major-(no 7th)-Minor	0	Major-(no 7th)-major	0
Minor-minor-minor	0	Minor-minor-major	2
Minor-major-minor	0	Minor-major-major	0
Minor-(no 7th)-minor	1	Minor-(no 7th)-major	1
Augmented-minor-major	0	Augmented-major-major	0
Augmented-(no 7th)-major	0		
Diminished-minor-minor	1	Diminished-minor-major	0
Diminished-(no 7th)-minor	1	Diminished-(no 7th)-major	2
Diminished-diminished-minor	1	Diminished-diminished-major	0

Eleventh Chords

Major-minor-major-perfect	1	Major-minor-major-augmented	0

Table LXXV - Continued

Eleventh Chords - Continued

Major-minor-(no 9th)-perfect	0	Major-major-major-augmented	0
		Major-(no 7th)-major-augmented	0
Minor-minor-minor-diminished	1	Minor-minor-minor-augmented	0
Minor-minor-(no 9th)-perfect	0	Minor-major-major-augmented	0
Minor-minor-major-perfect	0		
Diminished-minor-major-diminished	0	Diminished-(no 7th)-major-perfect	1

Thirteenth Chords

Major-minor-major-perfect-major	0	Major-major-major-perfect-major	0
Major-minor-major-(no 11th)-major	0		
Minor-minor-major-perfect-major	0	Minor-major-major-perfect-major	0
Diminished-minor-minor-diminished-minor	0		

Augmented Sixth Chords

Italian 1	French 4	German 0

Triads with Added Tones

Major plus major 6th	4
Major plus major 6th and major 9th	0
Major plus augmented 4th	0
Minor-plus major 6th	0
Diminished-plus major 6th	0

Table LXXV - Continued

Triads with Split 3rds	
Major plus minor 3rd (or minor plus major 3rd)	3
Augmented plus minor 3rd	0
Diminished plus major 3rd	0
Triads with Split 5ths	
Major-plus augmented 5th	1
Major-plus diminished 5th	0
Diminished plus perfect 5th	1
Triads with Both Split 3rds and 5ths	
Major plus minor 3rd and diminished 5th	0
Major plus minor 3rd and augmented 5th	1
Seventh Chords with Added Tones	
Major-minor plus minor 6th	0
Major-minor plus major 6th	0
Seventh Chords With Split 3rds	
Major-minor plus minor 3rd	2
Seventh Chords With Split 5ths	
Major-minor plus augmented 5th	0
Major-major plus diminished 5th	0
Minor-major plus augmented 5th	0
Seventh Chords With Split 7ths	
Major-minor plus major 7th	0
Augmented-minor plus major 7th	0
Diminished-minor plus diminished 7th	2
Diminished-minor plus major 7th	1

Table LXXV - Continued

Ninth Chords With Split 3rds	
Major-minor-major plus minor 3rd	0
Ninth Chords With Split 5ths	
Major-minor-major plus augmented 5th	1
Ninth Chords With Split 7ths	
Major-minor-major plus major 7th	0
Ninth Chords With Split 9ths	
Minor-minor-minor plus major 9th	0
Eleventh Chords With Split 3rds	
Minor-minor-minor-augmented plus major 3rd	0
Diminished-minor-major-perfect plus major 3rd	0
Augmented Sixth Chords With Split 6ths	
German Sixth plus major 6th	0
Augmented Sixth Chords With Added Tones	
French Sixth plus major 7th	0
Quartal Chords	
With three tones	1
With four tones	0
With five tones	0
Polychords	14

Table LXXV - Continued

	Number of Occurrences	Percentage All Chords
Number of Triads	123	50.4%
Number of Seventh Chords	70	28.7%
Number of Ninth Chords	12	4.9%
Number of Eleventh Chords	3	1.2%
Number of Thirteenth Chords	0	
Number of Augmented Sixth Chords	5	2.0%
Number of Chords with Added Tones	16	6.6%
Number of Polychords	14	5.7%
Number of Quartal Chords	1	.4%
Total Number of Chords	244	

A very interesting peculiarity is found in the balance between the four types of triads. The augmented triad is more prevalent than in any other movement of the six symphonies - radically so, even for this symphony. The diminished triad is unsurpassed in prevalence in any other movement of these symphonies, and is equalled only in the third movement of this symphony. The extensive use of both of these types of chords is a very significant factor in the over-all texture of the music, contributing considerably to the grotesque character of the movement.

The fairly even balance between the various types of seventh chords conforms to the general trend of the symphony, but the extensive use of the diminished-minor type is peculiar and significant. Because of this and the similar prevalence of the diminished triad, chords of the diminished type are unusually prominent.

Both polychords and chords with added tones are more abundant than average for this symphony and are another significant factor in the very typically modern texture of the music.

Quartal chords are conspicuous by their absence. This is of interest since so many other modern elements are found in this movement.

Root Movement

Table LXXVI - Tabulation of Root Movement
Symphony Number Six - Second Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	33	16.3%
By descending 2nd	27	13.4%
By ascending 3rd	29	14.4%
By descending 3rd	36	17.8%
By ascending perfect 4th	28	13.9%
By descending perfect 4th	30	14.9%
By ascending or descending tritone	19	9.4%
Total Number of Root Movements	202	

Tabulation of Change of Sonority	
Change of Mode	16
Change of 5th	7
Change of 3rd and 5th	3

Root movement by perfect 4th is used less extensively than usual and that by descending perfect 4th supercedes that by ascending perfect 4th.

Root movement by descending 3rd is unusually prevalent, more so than any other type. Root movement by ascending 3rd is similarly prevalent. Consequently, root movement by 3rd is used more than any other type of root movement.

Root movement by ascending 2nd is used very extensively and is surpassed only by root movement by descending 3rd. The predominance of this type of root movement over that by descending 2nd is contrary to the trend of the symphony, and is in itself a conservative factor; but the predominance over both types of root movement by perfect 4th is very unusual and definitely contrary to traditional practices.

General Observations. The predominance of both root movement by 3rd and that by 2nd over that by perfect 4th is very unusual and progressive in implications. The predominance of root movement by descending perfect 4th over that by ascending perfect 4th is also peculiar and a departure from traditional harmony.

The unusual closeness of the frequencies with which most types of root movement are used conforms to the trend of the symphony as a whole but extends the trend farther than usual by its extremeness.

Keys

Table LXXVII - Tabulation of Keys
Symphony Number Six - Second Movement

Measures	Key	Comments	Part of Form
1-22	No tonality	Melodic fragment composed of two descending 4ths, a tritone and perfect 4th	A
23-28	No tonality	Intervals of fragment expanded to one perfect 5th and a tritone, thus retrograd-inversion	
29-32	Atonal	Theme based on fragment, beginning with two descending 4ths. Now includes all twelve tones of the scale except G. Not a strict tone row because four tones recur before the final tone is reached	
33-45	Rather atonal	Harmony nonfunctional, the result of stretti. Some suggestions of tonality (b, measure 43, in clarinet parts; c, measure 44, in bassoon parts) but tonality obscured by other instruments with atonal writing.	
46-47	d	Tonality very clear, traditional	
48-53	Rather atonal	Clarinets mostly in parallel major 3rds	
54-67	No tonality	One melodic part only plus percussion. Perfect 4ths and diminished 5ths only intervals used.	
68-76	F-sharp	Absolutely clear	B
77-82	F-sharp-E	Polychord. F-sharp and E. E may be considered pedal subtonic chord.	
83-86	A	E pedal chord still sounding, but functions as dominant chord in A	

Table LXXVII - Continued

Measures	Key	Comments	Part of Form
87-92	F-sharp and d	Polytonal, melodic line in F-sharp, accompaniment in d	
93-162	A	Some altered chords but quite clear	
103	C	Transient, becomes dominant chord of F	
104-108	F		
109-111	Uncertain	Non functional harmony, chromatic melodic line	Development
112-113	A-flat	Chords in this key but not absolutely clear tonality	
114-119	No tonality	Trills by 7ths and 9ths forming diminished chords, glissando in trombone	
120-125	No tonality	Stretto on original theme	
126-130	F	Accompaniment of second theme	
132-136	A-flat	Clear in lower parts, upper part chromatic	
137-140	E-flat	Cross relation but fairly clear	
141-151	A-flat	Upper parts uncertain, some writing in parallel 4ths	
152-163	No tonality		
164-168	F-sharp	Implied by fragments of second subject	
169-180	Uncertain	E only tone, sustained by clarinets	

The second movement obviously departs considerably from the practices found in any other movement in the six symphonies. Lack of tonality generally with considerable dissonance is one of the most outstanding characteristics of the movement. Another peculiarity is modulation

without preparation, simply moving to another key. Polytonality used in conjunction with melodic lines resembling a folk dance carry out the intentions implied by the movement's title. The effect is most ludicrous.

Lack of tonal organization (in the usual sense of the word) is one of the most prominent peculiarities of the movement. Counterpoint, especially of the dissonant type, is also very prominent in the movement and is essential in supplying unity as well as continuity to the movement.

IV. THE THIRD MOVEMENT (PROPOSTA SERIA)

Introductory Comments

The third movement of the sixth symphony, as in the second and fourth symphonies, is a slow movement, and as the title (Proposta Seria) suggests, is of a somber character. The two main themes are each presented twice (alternately), and then are developed together toward the end of the movement. Because there is no recapitulation, the movement cannot be regarded as being in sonata form. It is in a modified binary form rather than episodical form because although the themes are presented alternately, the first theme does not appear last (at the end of the movement).

The first theme is written mostly in the Aeolian mode with prominent use of the 7th scale degree. Such pure modal writing is characteristic of many twentieth-century compositions. Another typically modern aspect of the

movement (also generally typical of the composer) is a tendency to create new themes out of previously-presented melodic fragments.

The ending of the movement is quite interesting because of the prominence of the perfect 4th, which is taken from the second theme. This interval is prominent both melodically and harmonically, resulting in some quartal chords. In this respect it resembles somewhat the beginning of the finale of the fifth symphony, although the tempos are entirely different.

Chords

Table LXXVIII - Tabulation of Chords
Symphony Number Six - Third Movement

Triads							
Major	40.0% 52	Minor	40.8% 53	Augmented	3.8% 5	Diminished	15.4% 20
Seventh Chords							
Major-minor		23.4% 18		Major-major		20.8% 16	
Minor-minor		28.6% 22		Minor-major		3.9% 3	
Augmented-minor		0		Augmented-major		5.2% 4	
Diminished-minor		10.4% 8		Diminished-major		1.3% 1	
Diminished-diminished		6.5% 5					

Table LXXVIII - Continued

Ninth Chords			
Major-minor-minor	0	Major-minor-major	5
Major-(no 7th)-minor	3	Major-(no 7th)-major	4
		Major-major-major	3
Minor-minor-minor	0	Minor-minor-major	1
Minor-major-minor	0	Minor-major-major	0
Minor-(no 7th)-minor	2	Minor-(no 7th)-major	0
Augmented-minor-major	0	Augmented-major-major	0
Augmented-(no 7th)-major	0		
Diminished-minor-minor	2	Diminished-minor-major	0
Diminished-(no 7th)-minor	0	Diminished-(no 7th)-major	0
Diminished-diminished-minor	0	Diminished-diminished-major	0
Eleventh Chords			
Major-minor-major-perfect	0	Major-minor-major-augmented	1
Major-minor-(no 9th)-perfect	0	Major-major-major-augmented	1
		Major-(no 7th)-major-augmented	1
Minor-minor-minor-diminished	0	Minor-minor-minor-augmented	0
Minor-minor-(no 9th)-perfect	0	Minor-major-major-augmented	0
Minor-minor-major-perfect	0		
Diminished-minor-major-diminished	1	Diminished-(no 7th)-major-perfect	0
Thirteenth Chords			
Major-minor-major-perfect-major	2	Major-major-major-perfect-major	1
Major-minor-major-(no 11th)-major	0		
Minor-minor-major-perfect-major	0	Minor-major-major-perfect-major	1

Table LXXVIII - Continued

Thirteenth Chords - Continued	
Diminished-minor-minor-diminished-minor	0
Augmented Sixth Chords	
Italian 1	French 6 German 0
Triads with Added Tones	
Major plus major 6th	2
Major plus major 6th and major 9th	0
Major plus augmented 4th	0
Minor-plus major 6th	1
Diminished-plus major 6th	1
Triads with Split 3rds	
Major plus minor 3rd (or minor plus major 3rd)	0
Augmented plus minor 3rd	1
Diminished plus major 3rd	1
Triads with Split 5ths	
Major-plus augmented 5th	0
Major-plus diminished 5th	1
Diminished plus perfect 5th	0
Triads with Both Split 3rds and 5ths	
Major plus minor 3rd and diminished 5th	0
Major plus minor 3rd and augmented 5th	0
Seventh Chords with Added Tones	
Major-minor plus minor 6th	0
Major-minor plus major 6th	1

Table LXXVIII - Continued

Seventh Chords with Split 3rds	
Major-minor plus minor 3rd	1
Seventh Chords with Split 5ths	
Major-minor plus augmented 5th	1
Major-major plus diminished 5th	0
Minor-major plus augmented 5th	0
Seventh Chords with Split 7ths	
Major-minor plus major 7th	1
Augmented-minor plus major 7th	0
Diminished-minor plus diminished 7th	0
Diminished-minor plus major 7th	0
Ninth Chords with Split 3rds	
Major-minor-major plus minor 3rd	1
Ninth Chords with Split 5ths	
Major-minor-major plus augmented 5th	0
Ninth Chords with Split 7ths	
Major-minor-major plus major 7th	0
Ninth Chords with Split 9ths	
Minor-minor-minor plus major 9th	0
Eleventh Chords with Split 3rds	
Minor-minor-minor-augmented plus major 3rd	1
Diminished-minor-major-perfect plus major 3rd	1

Table LXXVIII - Continued

Augmented Sixth Chords with Split 6ths	
German Sixth plus major 6th	0
Augmented Sixth Chords with Added Tones	
French Sixth plus major 7th	0
Quartal Chords	
with three tones	6
with four tones	2
with five tones	4
with six tones	1
Polychords	0

	Number of Occurrences	Percentage All Chords
Number of Triads	130	48.3%
Number of Seventh Chords	77	28.6%
Number of Ninth Chords	20	7.4%
Number of Eleventh Chords	4	1.5%
Number of Thirteenth Chords	4	1.5%
Number of Augmented Sixth Chords	7	2.6%
Number of Chords with Added Tones	14	5.2%
Number of Polychords	0	
Number of Quartal Chords	13	4.8%
Total Number of Chords	269	

Triads. The minor triad is used more than the major, a peculiarity found only in this movement and the finale of the first symphony. Also, no other movement of these symphonies contains a higher proportion of diminished triads although the second movement of this symphony has an equally

high proportion. The effect is as would be expected; the mood of the music is very somber.

Seventh Chords. The minor-minor type is the most prevalent, and the major-major type is used more extensively than in any other movement of the six symphonies, nearly as extensively as the major-minor type (in this movement). Although rare, the augmented-major type is more prevalent than usual for this symphony.

Both the predominance of the minor-minor seventh chord, and the extensive use of seventh chords with major 7ths indicate that the chord texture of the third movement is quite modern.

Ninth Chords. Ninth chords are somewhat more prevalent than usual for this symphony, but the total is very close to the average for this type of chord found in the fifth symphony (the symphony with the highest content of ninth chords).

Other types of Chords. Although polychords are not found, the prominence of chords with added tones (especially with simultaneous cross relation), and of quartal chords contributes considerably to the modernness of the chord texture. Quartal chords stand out somewhat because they were rare in the preceding movement.

General Observations. The general configuration of the tabulation is quite modern in implications. The prevalence of the diminished triad, the major-major seventh chord, and chords with simultaneous cross relation all

indicate that dissonance is prominent, a prominent aspect of this movement as is the predominance of the minor triad over the major.

Root Movement

Table LXXIX - Tabulation of Root Movement
Symphony Number Six - Third Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	21	11.5%
By descending 2nd	36	19.8%
By ascending 3rd	13	7.1%
By descending 3rd	20	11.0%
By ascending perfect 4th	38	20.9%
By descending perfect 4th	34	18.7%
By ascending or descending tritone	20	11.0%
Total Number of Root Movements	182	

Tabulation of Change of Sonority

Change of Mode	16
Change of 5th	26
Change of 3rd and 5th	2

Root movement by descending 2nd is unusually prevalent, only root movement by perfect 4th being used more frequently. Also, although the predominance of root movement by descending 2nd over that by ascending 2nd is typical of this symphony, the margin of numerical superiority is unusually large in the third movement.

Root movement by tritone is not only quite prevalent, it is used as often as that by descending 3rd and more often than that by ascending 3rd - the first and only movement in the six symphonies in which this occurs.

The unusually high prevalence of root movement by descending 2nd as well as of that by tritone are distinct peculiarities of the third movement.

Keys

Table LXXX - Tabulation of Keys
Symphony Number Six - Third Movement

Measures	Key	Comments	Part of Form
1-3	b Natural minor	Fugato, subject	A
4-5	e Natural minor	Answer at 4th below	
6-9	A		
9-10	e		
10-13	B-flat	Pedal point on A-flat (the Mixolydian 7th)	
13-15	Uncertain	Unison passage, very chromatic	
15-16	a and f	Polytonal, melodic line in parallel major 3rds	
16-17	a, f, and g-flat	Polytonal, essential harmony forms a whole tone chord	
17-18	Uncertain	Similar to passage above but in similar, rather than parallel 3rds	
19-20	B	Very tonal, primary chords only	
21	b	Thirteenth chord, contains entire scale	
22	B		
23	b	Parallel major 3rds also imply a-flat	

Table LXXX - Continued

Measures	Key	Comments	Part of Form
24-25	a-flat	3rd relation makes beginning somewhat uncertain	B
25-28	a-flat and c	Polytonal, fugato	
29-31	Uncertain	Unison passage, chromatic	A
32-33	F-f		
34	b-flat		
35	c		
36	C-sharp		B
36-39	f and b-flat	Polytonal, parallel 5ths	
39-40	f-sharp	Dorian or B Mixolydian (f-sharp: I IV; B: V I)	
41-43	b-flat	Quartal chords make tonality somewhat vague, quite pandiatonic)	A-B

In the third movement, interest centers more on the concept of tonality than in the modulations. The use of the natural form of the minor (Aeolian mode) is especially prominent in the first theme (part A of the form). Another interesting characteristic is the writing in parallel major 3rds. This stems directly from the use of real answers (in fugatos) at unusual intervals which was found in the fifth symphony. By presenting the theme simultaneously instead of successively, polytonality is accomplished. This is another example of how the composer has reached modern techniques of composition by a natural evolutionary process. Example 34 shows the composer's use of writing in parallel 3rds.

Ex.34

The horns (seen on the middle staff) present the first theme in parallel 3rds, beginning on F and A (concert pitch) and are answered by the bassoons (lower staff) beginning on G and B. The close cross relation between the two French horns (E and E-sharp concert pitch, on the third beat of the first measure) and also in the bassoon parts (G-flat and G-natural, on the second beat of the second measure) are quite characteristic of twentieth-century practices of composition.

Later in the movement (measures 47-53) similar writing, but with perfect 4ths and perfect 5ths, is used, resulting in quartal harmony. Because writing with parallel 4ths and 5ths involves two closely related keys, the effect of polytonality is greatly diminished. The use of this with nonfunctional harmony creates more the effect of pandiatonicism. It will be noted though, that in both cases an element of tonality is preserved. Polytonality involves several keys used simultaneously, and pandiatonicism preserves the traditional scale. This points out once more the composer's tendency to preserve tonality or

some element of it rather than to write truly atonal music.

The advances in concepts of tonality just discussed are not only significant of themselves but especially so in a slow movement where the composer has tended to be more conservative, gravitating toward the use of rather traditional harmony.

V. THE FOURTH MOVEMENT

Introductory Comments

The fourth movement (Allegro) is in the form of a theme and variations as is clearly indicated in the score. There are nine variations clearly marked as such followed by a fanfare (also clearly marked) and a final variation (not designated as such in the score).

This is the only movement found in any of the six symphonies that is in variation form. Since Beethoven used this form in his fifth symphony, and Brahms used it in his fourth symphony, and both examples were the fourth movements, Carl Nielsen's similar use may not be incidental. It is possible that he was following their example in order to carry out the intention implied by the title Sinfonia Semplice.

As Robert Simpson clearly points out, the theme (introduced by the first bassoon without accompaniment) is chromatic, touching on all twelve tones of the octave,

but nevertheless quite clearly in B-flat major.[1] Tonality is generally preserved, except in variation IX which resembles the Humereske in its lack of tonal center.

The fourth movement is not thematically related to any of the other movements, containing no cyclical use of themes, but it does have some stylistic elements which are related to other movements (variation IX as mentioned in the preceding paragraph). The lack of cyclical use of themes is another factor which suggests a return to a more traditional or even classical type of form.

The use of polytonality, and typically modern chords clearly indicates that the fourth movement, if somewhat classical in form, is nevertheless not less advanced in harmony than the other movements of this symphony. The conservative elements are mentioned because of the implications of the work's title, but are of secondary interest and importance.

Chords

Table LXXXI - Tabulation of Chords
Symphony Number Six - Fourth Movement

Triads							
Major	50.8% 160	Minor	31.4% 99	Augmented	6.0% 19	Diminished	11.7% 37

[1]Robert Simpson, op. cit., p. 120.

Table LXXXI - Continued

Seventh Chords			
Major-minor	33.3% 45	Major-major	11.9% 16
Minor-minor	24.4% 33	Minor-major	3.7% 5
Augmented-minor	1.5% 2	Augmented-major	0
Diminished-minor	19.3% 26	Diminished-major	0
Diminished-diminished	5.9% 8		

Ninth Chords			
Major-minor-minor	0	Major-minor-major	12
Major-(no 7th)-minor	0	Major-(no 7th)-major	7
		Major-major-major	4
Minor-minor-minor	0	Minor-minor-major	3
Minor-major-minor	0	Minor-major-major	1
Minor-(no 7th)-minor	1	Minor-(no 7th)-major	0
Augmented-minor-major	0	Augmented-major-major	1
Augmented-(no 7th)-major	1		
Diminished-minor-major	0	Diminished-minor-major	1
Diminished-(no 7th)-minor	2	Diminished-(no 7th)-major	0
Diminished-diminished-minor	0	Diminished-diminished-major	0

Eleventh Chords			
Major-minor-major-perfect	1	Major-minor-major-augmented	0
Major-minor-(no 9th)-perfect	1	Major-major-major-augmented	0
		Major-(no 7th)-major-augmented	0

Table LXXXI - Continued

Eleventh Chords - Continued			
Minor-minor-minor-diminished	0	Minor-minor-minor-augmented	0
Minor-minor-(no 9th)-perfect	0	Minor-major-major-augmented	1
Minor-minor-major-perfect	1		
Diminished-minor-major-diminished	0	Diminished-(no 7th)-major-perfect	0
Thirteenth Chords			
Major-minor-major-perfect-major	0	Major-major-major-perfect-major	0
Major-minor-major-(no 11th)-major	1		
Minor-minor-major-perfect-major	1	Minor-major-major-perfect-major	0
Diminished-minor-minor-diminished-minor	1		

Augmented Sixth Chords		
Italian 1	French 3	German 1

Triads with Added Tones	
Major plus major 6th	14
Major plus major 6th and major 9th	1
Major plus augmented 4th	1
Minor-plus major 6th	0
Diminished-plus major 6th	0

Triads with Split 3rds	
Major plus minor 3rd (or minor plus major 3rd)	4
Augmented plus minor 3rd	0
Diminished plus major 3rd	0

Table LXXXI - Continued

Triads with Split 5ths	
Major-plus augmented 5th	1
Major-plus diminished 5th	0
Diminished plus perfect 5th	2
Triads with Both Split 3rds and 5ths	
Major plus minor 3rd and diminished 5th	1
Major plus minor 3rd and augmented 5th	0
Seventh Chords with Added Tones	
Major-minor plus minor 6th	0
Major-minor plus major 6th	2
Seventh Chords with Split 3rds	
Major-minor plus minor 3rd	0
Seventh Chords with Split 5ths	
Major-minor plus augmented 5th	0
Major-major plus diminished 5th	1
Minor-major plus augmented 5th	1
Seventh Chords with Split 7ths	
Major-minor plus major 7th	2
Augmented-minor plus major 7th	2
Diminished-minor plus diminished 7th	0
Diminished-minor plus major 7th	0
Ninth Chords with Split 3rds	
Major-minor-major plus minor 3rd	1

Table LXXXI - Continued

Ninth Chords with Split 5ths	
Major-minor-major plus augmented 5th	0
Ninth Chords with Split 7ths	
Major-minor-major plus major 7th	1
Ninth Chords with Split 9ths	
Minor-minor-minor plus major 9th	0
Eleventh Chords with Split 3rds	
Minor-minor-minor-augmented plus major 3rd	0
Diminished-minor-major-perfect plus major 3rd	0
Augmented Sixth Chords with Split 6ths	
German Sixth plus major 6th	0
Augmented Sixth Chords with Added Tones	
French Sixth plus major 7th	1
Quartal Chords	
with three tones	2
with four tones	2
with five tones	2
Polychords	25

Table LXXXI - Continued

	Number of Occurrences	Percentage All Chords
Number of Triads	315	55.4%
Number of Seventh Chords	135	23.7%
Number of Ninth Chords	33	5.8%
Number of Eleventh Chords	4	.7%
Number of Thirteenth Chords	3	.5%
Number of Augmented Sixth Chords	5	.9%
Number of Chords with Added Tones	35	6.2%
Number of Polychords	33	5.8%
Number of Quartal Chords	6	1.1%
Total Number of Chords	569	

The tabulations in general resemble the average statistics for the symphony as a whole. The main deviations in the use of the individual types of chords are: slightly increased use of the augmented triad, the diminished-minor and the major-minor types of seventh chords, and some decrease in the use of the diminished-diminished seventh chord. None of these changes is very great, nor are any of the percentage figures unusual in comparison to those found elsewhere in the sixth symphony.

Chords with added tones are more prevalent than average, being used nearly as frequently as in the first movement, and a considerable variety of types is found, especially ones involving simultaneous cross relation.

It is notable that augmented sixth chords are used rarely, but this type of chord has not been especially prevalent in other movements. For this reason the change is not particularly significant.

Quartal chords are used less than usual for this symphony, but this is the only movement of any of the six symphonies to employ chords composed entirely of perfect 5ths. The use of this new (for the composer) type of chord constitutes a slight growth or expansion in the texture of the music as well as in the concept of harmony.

Root Movement

Table LXXXII - Tabulation of Root Movement
Symphony Number Six - Fourth Movement

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	71	13.7%
By descending 2nd	62	12.0%
By ascending 3rd	61	11.8%
By descending 3rd	89	17.2%
By ascending perfect 4th	116	22.4%
By descending perfect 4th	94	18.1%
By ascending or descending tritone	25	4.8%
Total Number of Root Movements	518	

Tabulation of Change of Sonority

Change of Mode	18
Change of 5th	18
Change of 3rd and 5th	7

There are several definite peculiarities found in the tabulations. Root movement by 3rd is more prevalent than that by 2nd, but is overshadowed by root movement by perfect 4th. Root movement by ascending 2nd is used more than that by descending 2nd - a slight deviation, but in

the direction of traditional harmony, and therefore conservative in implications. Root movement by tritone has been decreased in percentage of the total to a figure resembling the practices of earlier symphonies - another conservative factor.

In general, the configuration shows a quite even distribution of all types of root movement, the percentages being quite close except for root movement by tritone which is unusually infrequently used.

Keys

Table LXXXIII - Tabulation of Keys
Symphony Number Six - Fourth Movement

Measures	Key	Comments	Part of Form
1-13	Uncertain	Unison passage melodic sequence	Introduction
13-29	B-flat	Unison passage	Theme
30-31	a-flat		Variation I
32-37	e		
38-39	b		
42-43	b-B	Some picardie 3rd	
44-45	B-flat		
46-47	d	Begins in F, I becomes III in d	Variation II
48-53	C	5 part chord in perfect 5ths	
53-58	b-flat		
59-61	b-flat-B-flat	Chromatic	
62-83	B-flat	Unison passage, very chromatic	Variation III
84-90	b-flat + b	Polytonal	
91-93	b-flat	Upper part foreign, but no clear key	
93-95	a	Natural form or Aeolian mode	
95-97	d		

Table LXXXIII - Continued

Measures	Key	Comments	Part of Form
97-100	d	Very chromatic, non functional harmony	
101-102	Uncertain		
103-105	B or F-sharp	Mixolydian	Variation IV
106-108	C or G	Mixolydian. All chords diatonic but tonic uncertain	
108-109	E	Half cadence	
109-115	c-sharp	Quite diatonic, clear	
116-117	A-flat or E-flat	Chromatic, tonic not clear	
118-119	c	Half cadence	
119-121	b-flat	Very chromatic, this key best contains chords	
124-125	a-flat		
126	f-sharp	Melodically in this key, vi and iii only chords	
127-130	F	(Mixolydian 7th) Poly-harmony, second key not clear	
131-132	Uncertain	Unison passage, chromatic	
133	B-flat		Variation IV
134-135	B-flat	Clear tonality	Variation V
136-138	B and B-flat	Polytonal	
139	A-flat		
140-141	D-flat		
142-143	C-flat		
143-147	A		
148-152	B-flat	Some polyharmony	
153-160	d and F	Polytonal, some simul-taneous cross relation	
161-184	B-flat	Very clear, waltz	Variation VI
185-189	A		
190-195	B	Some chromatic sequence, polyharmony	
196-200	B-flat		
201-205	c	(emphasis of ii in B-flat)	
206-208	B-flat		
209-213	c	(emphasis of ii in B-flat)	
213-217	B-flat		
218-222	A	Becomes VII in b following	

Table LXXXIII - Continued

Measures	Key	Comments	Part of Form
223-229	b		
230-233	B-flat	Mixolydian. Obscured somewhat by polyharmony	Variation VI
233-237	B	Prepared by chord a in preceding polyharmony	
238-239	b-flat	Obscured somewhat by chord b	
240-241	E-flat	Mixolydian	
242-244	f-sharp		
245-249	F		
249-252	b-B		
253-255	B-flat	Ostinato outlining a triad obscures key somewhat	
255-259	e-flat		
259-265	E	Very clear tonality	
266-289	b-flat		Variation VII
290-292	b-flat		Variation VIII
292-293	c-sharp		
293-296	Uncertain	Very chromatic many changes of 5th	
297	b-flat-B-flat	Half cadence, Picardie 3rd	
298	b-flat		
299-301	f	Emphasis of v	
302-307	b-flat	Very pandiatonic at measure 302	
308-324	B-flat	Style of Humoreske, harmony non functional	Variation IX
325-330	B-flat or F	Incomplete chords and added tones make key uncertain	Fanfare
332	B-flat	Clear, cadence contains added tones	
333-348	B-flat	Some Mixolydian 7th, unison writing, somewhat chromatic but key quite clear	Final variation
349-351	a-flat and B-flat	Polytonal	
351-354	A and B-flat	Polytonal	
355-356	f and B-flat	Polytonal	
357-360	b-flat	Style of Humoreske, but clearer tonality	

Table LXXXIII - Continued

Measures	Key	Comments	Part of Form
361-364	Uncertain	Unusual, augmented chord with split 7ths	
364-376	B-flat	Very clear	

The interval of a 2nd is prominent in both modulations and polytonality. Once more a principle of extension is apparent, for polytonality can be considered a natural outgrowth of modulation (simultaneous instead of successive use of two keys). The 2nd thereby becomes prominent in two aspects of composition. The exploitation of an interval in several ways is a technique used by Béla Bartók and other twentieth-century composers and is typically modern. Nielsen's use is for this reason quite advanced, especially so since polytonality is one of the means used in exploiting the 2nd.

It is interesting to note that the Mixolydian 7th, which was prominent as early as the first symphony, remains so in this last movement of the composer's last symphony. Thus the Mixolydian 7th remains characteristic of the composer in all of his symphonies.

Another feature found in this movement is the prominent use of ostinatti, a technique of composition that is more typical of the later symphonies than the earlier ones. The increase in use is most noticeable starting with the third symphony.

Change of mode is prominent in the fourth movement of the sixth symphony. Although found in the sixth symphony, this type of writing is more typical of the first symphony than any of the others, and there is a trend toward less frequent use of this device in the symphonies that followed.

The sixth symphony thus ends with a movement employing a number of modern techniques of composition, yet it is clearly the handwork of the same composer whose first symphony was written in the last decade of the nineteenth century.

CHAPTER IX

CONCLUSIONS

Form

Form has not been a primary topic of the research, but because it has been discussed somewhat in connection with the individual movements of the six symphonies, some conclusions can be made.

Over-all Plan of the Symphonies. The four movement plan is used in all symphonies except the fifth, and even there it is evident that the form is basically a compression of the traditional first and second movements into one large one, and the third and fourth into another. In the first three symphonies and in the sixth, the four movements are basically conceived as four complete and thematically independent units, in contrast to each other, but clearly separated. The fourth symphony is the only one to contain cyclical use of a theme, and in fact its fourth movement would be formally unintelligible if the preceding movements were not performed.

Individual Movements. Sonata form is found in the first movements of all of the six symphonies. From as early as the first symphony, the composer showed a consistent tendency to include new development in the recapitulation section, also generally avoiding exact restatement of the exposition. This predilection toward development is found in most of the other movements as well.

The fourth movement of each of the first five symphonies are closely related to, if not in, sonata form. The finale of the sixth symphony is a theme and variations. In general there are more deviations from the nineteenth-century concept of sonata form than are found in the first movements. For example, in the finale of the second symphony the development section is so short, and the recapitulation so inexact, that it is difficult to determine whether the form is basically episodical with some development or sonata form with a very short development section.

Several different plans are found for the inner movements. In the first and third symphonies the second movements are of the slow type, and the third movements resemble scherzos, gravitating toward episodical form. Vestiges of this very traditional plan are also evident in the fifth symphony, the second part of the very loud first movement being slow, and a scherzo-like theme appearing in the second movement. In the second and fourth symphonies there is a reversal of the more classical pattern, the second movements resembling scherzos, and the third movements being of the slow type. The sixth symphony follows this pattern also except that the

second movement is a humoresque, and is distinctly peculiar in style, being unusually dissonant.

Sonata Form. A considerable amount of growth is evident in the concept and application of sonata form. In the first three symphonies the form is fairly traditional. Two main subjects are used, and these subjects (especially the second one) are generally composed of groups of themes. These themes tend to be of a contrasting nature, but in each symphony after the first there is a trend for the themes within the main subjects to be more and more closely related, sometimes developed from fragments of subject matter that had been presented earlier in the movement. The tendency of greater integration or unity reaches its apex in the fifth symphony, where the themes of the very long first movement are closely interrelated. The tendency toward close interrelationship of subject matter and the development of new themes from previously presented fragments is typical of Sibelius and some other composers of the twentieth century, and Carl Nielsen's growth in this direction may therefore be considered progressive in implications.

Fugatos. No discussion of Carl Nielsen's six symphonies would be complete without mention of the fugato. Fugato writing is found in all but the first symphony. It becomes increasingly prominent in each symphony following the second and reaches an apex in the fifth symphony where two fugatos on the same subject are presented successively.

Unusual intervals of imitation (intervals other than the perfect 4th) are found in the fugatos of the fourth and fifth symphonies, a technique which is typical of Béla Bartók and other composers of the twentieth century. These unusual intervals of imitation lead (in the case of Carl Nielsen) to polytonality, another common practice in the twentieth century. This polytonality is accomplished by using real rather than tonal answers with each entering part maintaining its own tonal center.

Before concluding this discussion of form the programmatic element must be mentioned. This is found in the second symphony (The Four Temperaments) and in the fourth one (The Inextinguishable), but in neither case usurps the form of the symphonies in importance.

Tonality

The composer retained a concept of tonality throughout all of his symphonies except perhaps the second movement of the sixth one; but this exception appears to be a sarcastic mimicry of then current practices in composition rather than representative of the composer's own writing or convictions.

In the early symphonies tonality tends to be established to a considerable extent by traditional authentic and plagal cadences, but the concept of tonality involves a large number of borrowed chords, change of mode, and chromaticism. Nevertheless, the concept is quite clearly tonal and generally

conforms to that of the Post-Romantic era. The Mixolydian 7th is found in all of the six symphonies and has been so called because of the distinctly Mixolydian flavor that it lends to the passages containing it.

Modal writing reaches a climax in the first movement of the third symphony, where the Dorian mode is prominent in the first subject.

Tonality in the later symphonies tends to be affirmed by any combination of the following elements: melodic lines with strong tonal implications, use of pedal points and static harmony, use of chords common to a given key but with distinctly peculiar root movement. These elements tend to maintain some vestige of traditional tonality despite peculiarities in the root movement and despite considerable use of simultaneous cross relation.

Nonharmonic Tones

These are very much a part of all of the six symphonies. A type that was cultivated by Nielsen involves simultaneous cross relation. These are found as early as the first symphony and are the antecedents of such sonorities used as essential harmony in the fourth, fifth, and sixth symphonies. The quartal harmony of the fifth and sixth symphonies has similarly evolved from the nonharmonic tones of the earlier symphonies. One other example of evolution of essential harmony from nonharmonic tones is the added 6th. This is

found in the first symphony where it appears as a passing tone in conjunction with plagal cadences, and it paves the way for the chords with added 6ths found in the fifth and sixth symphonies in the same way that the passing 7th led to seventh chords in the late Renaissance or early Baroque periods.

The growth of nonharmonic tones into essential chord tones of typically twentieth-century harmonies found in these symphonies has implications of a similar growth that is believed to have been taking place in the case of other composers of the time. Such a broad theory can never be proven on a basis of one composer, especially one as little known as Carl Nielsen. Nevertheless, since Carl Nielsen was a conservative composer his growth undoubtedly reflects changes occurring in other music of his time, it seems reasonable to believe that the growth may have also been taking place in the case of others.

Implications of the Chord Tabulations. The steady increases of triads and corresponding steady decreases of seventh chords which occur from the first through the fourth symphonies at first seem to indicate regression rather than progress. However, seventh chords, especially the major-minor type, were perhaps overused by the end of the nineteenth century, and decreases in their use may be regarded as progressive in implication by getting away from some of the rather lush harmonies of those times. This writer finds the

simpler and more straightforward sonorities of the third symphony rather refreshing. Although there is a decrease in the use of seventh chords from the first through the fourth symphonies, the balance between the types becomes more nearly equal. The major-minor type retains its primacy as the most frequently-used seventh chord, but the margin of plurality becomes less and less. Also, the diminished-diminished type, another perhaps badly-abused chord in the late nineteenth century, becomes surpassed by the diminished-minor type. Thus, although decreased use of seventh chords might seem conservative, the balance between the various types becomes more and more even, and this is progressive in implication, departing from the practices of the past.

From the fourth through the sixth symphonies there is a steady increase in the number of chords used and increase in the use of many of these newer types of chord. Chords with added tones become increasingly prevalent both in number of types and number of occurrences; and the nonharmonic tones involving simultaneous cross relation that were found in the first three symphonies finally cross the threshold of acceptability and emerge as essential chord tones.

In general, Nielsen tends to use chords as a part of a fairly traditional concept of tonality. Parallel harmony is not very typical except in the fourth symphony, and even there the chords are of varying mode. This could better be called similar rather than parallel harmony because the

movement of the part writing is in similar rather than parallel motion. Because the chords tend to lie within a key this is nonfunctional harmony, but within a key. Thus Nielsen does not tend to exploit an individual type of chord sonority in the way that Stravinsky and Bartók have done. One exception to this is quartal harmony. In the fifth symphony Nielsen does exploit the interval of the perfect 4th both melodically and harmonically in a rather advanced way, as either of the just-mentioned composers have done.

Not only does Nielsen tend to restrict the use of chords to some application of tonality, no examples have been found of chords based on 2nds or unusual combinations of intervals, nor has any marked tendency been found to base chord sonorities on the tones of the melodic line such as Bartók has done. One final limitation is that no examples have been found of real doublings of melodic lines at intervals such as the 2nd or tritone, a technique used by both Bartók and Stravinsky as well as many other advanced composers of the time.

The vocabulary of chord sonorities that Nielsen uses as essential harmony in the first three symphonies seems closely related to those of Brahms or Dvořák, and these works generally tend to resemble the writing of these two composers in other ways as well.

The vocabulary of chords found in the fourth, fifth, and sixth symphonies as well as the general concept of tonality

used tend to resemble those of Vaughn Williams, Prokofief or even Shostakovich. This is not to say that the chords used are by any means identical, but that there is considerable resemblence in the sonorities used.

Implications of the Root Movement Tabulations

Although the changes in the application of root movement from the first through the sixth symphony are less consistent than those of the various types of chords, several general trends are evident. Root movement by perfect 4th becomes less prevalent, and that by second more prevalent. Root movement by 3rd also becomes more prevalent, but the change is not as great as that of root movement by 2nd. Other than in the sixth symphony root movement by tritone changes very little, remaining the least-used type of chord progression, and quite rare. The implications of these changes are in general progressive, getting away from the extensive use of root movement by perfect 4th found in the eighteenth and nineteenth centuries. The lack of increase in the use of the tritone as a root movement is not necessarily conservative in implications. This type of root movement had already been exploited somewhat by Wagner and others, and Nielsen's restraint may indicate rejection of this type of writing and in this respect be considered progressive in departing from the practices of the late nineteenth century.

Another fairly consistent trend is a tendency toward more nearly equal balance between the ascending and

descending forms of root movement. This is especially true of root movement by 2nd, and also of that by perfect 4th, and that by 3rd. Although root movement by ascending perfect 4th is nearly always more prevalent than that by descending perfect 4th, root movement by ascending 2nd generally more prevalent than that by descending 2nd, and that by descending 3rd always more prevalent than that by ascending 3rd, the margins of plurality become less and less. This more nearly equal balance between the ascending and descending types of root movement definitely deviates from the practices of the past in which root movement by ascending perfect 4th, ascending 2nd, and descending 3rd tended to predominate. It also indicates that Nielsen's method of establishing tonality differs somewhat from traditional practices. As early as the first symphony he used root movement by descending 2nd more than that by ascending 2nd, and this is also found occasionally in individual movements of some of his other symphonies.

In the first symphony the peculiarities in the use of root movement by 2nd are more than balanced by the more traditional use of the other types, consequently the first symphony maintains tonality by rather traditional use of root movement, especially by the use of plagal and authentic cadences.

In the later symphonies, where the ascending and descending forms of root movement become more evenly balanced and that by perfect 4th is sometimes outnumbered by root movement by 2nd, static harmony, strongly tonal melodic lines, and the use of chords within a key tend to affirm the presence

of tonality. Nevertheless, this tonality is not always as strongly established as in the earlier works. By relying less and less on traditional applications of root movement Nielsen is able to exploit whichever type of root movement he wishes and thereby attain considerable variety and contrast both within and between movements of his symphonies.

Implications of the Tabulations of Keys

A distinct characteristic of each of Nielsen's symphonies is the freedom in the selection of keys for the movements. None of the six symphonies end in the key in which they began, but this is not the result of any arbitrary decision. The ultimate key is always hinted at if not heavily emphasized in other parts of the symphony. Consequently the ultimate key is prepared. For example, the first symphony (in G minor) begins with a C major triad and an ambiguity and conflict between C major and G minor is evident in many parts of the movement, thus preparing the listener for the eventual ending of the symphony in C major. Nielsen's approach to tonality within a symphony is that the ultimate tonal center is reached by a process of evolution within the four movements rather than prescribed by the basic key in which the symphony is said to be. Thus in all six symphonies the interest of the listener is drawn to the question of what the ultimate tonal center of the work is going to be. Whether or not Nielsen is effective in his evolution of the ultimate tonal center rather than direct statement and recapitulation

of this key is a question best left to the listener. Regardless of whether or not it is effective, there can be no doubt that this freedom in the use of keys allows for a considerable variety of keys, and that this approach to tonality within a symphony is both interesting and progressive, also offering considerable potential for the development of new concepts regarding tonal organization.

Modulations by common chord as well as the chromatic and the enharmonic types are used by Nielsen in his symphonies. Although chromatic modulations are very common, the composer did not hesitate to use the older type of modulation by common chord. Consequently, there is considerable balance between chromatic and diatonic writing.

Examination of the tabulations of keys indicates expansion to include the more remote key relationships, particularly in the use of keys a semitone apart. The subject of modulation is of course controversial. Considering the tabulations from another standpoint it can be said that the concept of tonality has expanded to include many chords that one hundred years earlier would have been considered to be foreign to the prevailing key. As the concept of tonality expands, the distinction between chromatic modulation and those by common chord breaks down, for the alleged foreign chord has come to be accepted as an altered chord within the first key.

Sequences of modulations are found in Nielsen's symphonies. Sequences of modulations by descending perfect 4th

using a series of major-minor seventh chords are not very prevalent, and this is perhaps fortunate in view of the considerable use of this during the nineteenth century. Third relation had been exploited greatly by Wagner, and Nielsen's symphonies may be a welcome relief from this. He does use this relationship but not as extensively as some of his predecessors, particularly Wagner. Series of modulations by 2nds are used as early as in the first symphony, and are also found in the symphonies that follow.

Direct modulations to keys a tritonedistant are exceedingly rare throughout the six symphonies. Although keys in this relationship may be emphasized (the E-flat major and A major of the third symphony) to create conflict of tonal center, Nielsen generally moves from the one tonal center to the other by several rather than one modulation. Nielsen is therefore conservative in his use of the tritone not only as an interval of root movement, but even more so as an interval of modulation.

Nielsen's expansion of the concept of tonality is a natural outgrowth of the chromaticism of the nineteenth century, and is typical of his contemporaries as well. However, where Schoenberg and others were led by this process to the concept of twelve-tone music, Nielsen never relinquished the concept of tonality. His concept that the ultimate tonal center of a symphony can be evolved as the music unfolds rather than prescribed by the key that the symphony is said to be in, was unorthodox at the time the first symphony was

written, and is distinctly characteristic of all of his symphonies. Although Nielsen's concept did not ever become the mainstream of musical thought, he must be given credit for some individuality in this aspect of composition. For the reader further interested in this subject, Robert Simpson's book is highly recommended, for this topic is very thoroughly pursued and is a central topic of that book.[1]

Considering now the individual symphonies on a more personal level, the first symphony might well appeal to the listener who likes Dvořák, Borodine or other nationalistic composers. It represents a continuation of Brahms' approach to composition rather than Wagner's, and will be welcomed by those who regret the extent that Wagner influenced composers of the period.

The second symphony indicates quite clearly that Carl Nielsen was a man not devoid of a sense of humor. The modulations used in the finale (The Sanguine Temperament) foreshadow The Classical Symphony of Prokofief. Although it is not as serious a work as Nielsen's other symphonies, it is an interesting work and is carefully worked out.

The third symphony, to this writer reaches an apex of the early period of the composer. The increased use of triads lends a simplicity to the work which is refreshing. The strongly marked Dorian tendencies of the first movement lend distinction to it, and as a formal unit, the third

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[1] Carl Nielsen Symphonist, op. cit.

symphony is unsurpassed in clearness and in organic unity by any of the other five symphonies.

The fourth symphony seems somewhat experimental in its applications of more typically twentieth-century harmony, but perhaps includes more growth than any of the other symphonies. Distinctly characteristic of the work are the exploitation of the tritone as a melodic interval and the occasional use of nearly atonal writing which seems to portray chaos.

The fifth symphony is in this writer's opinion the most outstanding of the last three symphonies and combines the logical, well organized qualities of the third with a more advanced type of composition. What was experimental in the fourth symphony is now handled with greater sureness and conviction in the fifth. The quartal harmony of the second movement is clearly related to the melodic line which outlines a quartal chord, and seems appropriate to the general musical context in which it appears.

Finally, the sixth symphony must be given credit for including further growth and expansion in its harmony, but unfortunately seems to be rather poorly organized when considered as a whole. Incongruous is perhaps the best way to describe the relationship between the individual movements. It is at best an experimental work and unfortunately there is no seventh symphony to crystallize the tendencies found in the sixth. Nevertheless, the first and last movements are quite satisfactory when considered apart from the entire symphony.

Apart from the academic considerations, namely tracing the development of the harmony and determining its implications, the question can be asked, "What, if anything, could the composer of the present time learn from studying the works of Carl Nielsen?" Although none of his harmonies were even new or revolutionary when written, there is one characteristic that stands out about them: they are deeply rooted in and closely related to the practices of the past. A composer who is interested in new and advanced sonorities but does not believe in arbitrary dissonance could learn much from studying the six symphonies. The use of simultaneous cross relation especially has considerable potential for a wide variety of sound, and this is an area which Carl Nielsen has exploited to a considerable extent. Finally, the composer who retains a belief in tonality even though not wishing to restrict himself to Nielsen's applications might find some potential in Nielsen's concept that the ultimate tonal center of the music may be evolved just as themes may be evolved from melodic fragments.

Because of his conservatism in comparison to Bartók, Stravinsky, and other composers of the first half of the twentieth century, Nielsen will probably never be recognized as a pioneer changing the mainstream of musical practices. Nevertheless, this should not preclude the possibility of there being any value in his works. To find something of interest and value in these symphonies does not necessarily

entail a conviction that music should regress to the practices of an earlier period. Perhaps when the twentieth century is over, the historian of the future will see in Carl Nielsen a composer who pursued his own musical evolution in ways not entirely in accord with the trend of the time, but in so doing developed some aspects of music further than many other composers of the time.

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APPENDIX A

Supplementary Chord Tabulations

Symphony Number Five - First Movement

Allegro (First Section of Movement)

Triads

Major	58.1% 100	Minor	31.4% 54	Augmented	1.7% 3	Diminished	8.7% 15

Seventh Chords

Major-minor	39.9% 57	Major-major	10.5% 15
Minor-minor	31.5% 45	Minor-major	.7% 1
Augmented-minor	2.8% 4	Augmented-major	1.4% 2
Diminished-minor	9.1% 13	Diminished-diminished	4.2% 6

Ninth Chords

Major-minor-minor	0	Major-minor-major	6
Major-(no 7th)-major	5	Major-major-major	20
Minor-minor-major	4	Augmented-(no 7th)-major	1
Diminished-diminished-minor			0

Eleventh Chords

Minor-minor-major-perfect	2
Diminished-minor-minor-perfect	1

Thirteenth Chords

Major-major-major-(no 11th)-major	3
Major-major-major-augmented-major	1

Supplementary Chord Tabulations
Symphony Number Five - First Movement
Allegro - Continued

Augmented Sixth Chords

Italian 0 French 7 German 0 Minor-German 0

Chords with Added Tones

Major plus major 6th	8
Minor plus major 6th	3
Augmented plus augmented 4th	2
Split 3rds (major-minor)	0

Quartal Chords

Three Tones 2 Four Tones 4

	Number of Occurrences	Percentage All Chords
Number of Triads	172	44.8%
Number of Seventh Chords	143	37.2%
Number of Ninth Chords	36	9.4%
Number of Eleventh Chords	3	.8%
Number of Thirteenth Chords	4	1.0%
Number of Augmented Sixth Chords	7	1.8%
Number of Chords with Added Tones	13	3.4%
Number of Quartal Chords	6	1.6%
Total Number of Chords	384	

Supplementary Chord Tabulations

Symphony Number Five - First Movement

Andante (Second Section of Movement)

Triads

Major	Minor	Augmented	Diminished
68.8% 117	23.5% 40	.6% 1	7.1% 12

Seventh Chords

Major-minor	52.4% 65	Major-major	8.1% 10
Minor-minor	25.0% 31	Minor-major	4.0% 5
Augmented-minor	0	Augmented-major	0
Diminished-minor	8.1% 10	Diminished-diminished	2.4% 3

Ninth Chords

Major-minor-minor	0	Major-minor-major	10
Major-(no 7th)-major	2	Major-major-major	2
Minor-minor-major	1	Augmented-(no 7th)-major	0
Diminished-diminished-minor			1

Eleventh Chords

Minor-minor-major-perfect	0
Diminished-minor-minor-perfect	0

Thirteenth Chords

Major-major-major-(no 11th)-major	0
Major-major-major-augmented-major	0

Supplementary Chord Tabulations
Symphony Number Five - First Movement
Andante - Continued

Augmented Sixth Chords

Italian	French	German	Minor-German
0	2	2	1

Chords with Added Tones

Major plus major 6th	3
Minor plus major 6th	1
Augmented plus augmented 4th	0
Split 3rds (major-minor)	2

Quartal Chords

Three Tones	Four Tones
0	0

	Number of Occurrences	Percentage All Chords
Number of Triads	170	53.0%
Number of Seventh Chords	124	38.5%
Number of Ninth Chords	16	5.0%
Number of Eleventh Chords	0	
Number of Thirteenth Chords	0	
Number of Augmented Sixth Chords	5	1.6%
Number of Chords with Added Tones	6	1.9%
Number of Quartal Chords	0	
Total Number of Chords	321	

Supplementary Root Movement Tabulations

Symphony Number Five - First Movement

Adagio (Second Section of Movement)

Type of Root Movement	Number of Changes	Percentage of Total Root Movement
By ascending 2nd	43	16.3%
By descending 2nd	27	10.3%
By ascending 3rd	15	5.7%
By descending 3rd	35	13.3%
By ascending perfect 4th	80	30.4%
By descending perfect 4th	61	23.2%
By ascending or descending tritone	2	.8%
Total Number of Root Movements	263	

Tabulation of Change of Sonority

Change of Mode	9
Change of 5th	5
Change of 3rd and 5th	1

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