ON THE NATURE OF MELODY IN
ASIA AND MEDIEVAL EUROPE

DISSERTATION

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By

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In current musicological research, considerable attention is given to the description of melodic structure and pitch organization. But it is problematical that the analytical concepts and terminology of the Common Practice Era are largely inadequate for meaningful description of melody of Asia and medieval Europe. For most traditions of melody in Asia and medieval Europe, there is some sort of developed system of theory, but each system is limited to the repertory it describes. Consequently, the comparative study of melody in these fields has been seriously hampered, and much published research in melody has had to concern itself with the formulation of analytical approaches more than the actual study of melody.

This study attempts to resolve this problem by offering for consideration an analytical model, the acoustic melodic formula, that is of use in the comparative study of melodic structures and formulas in Asia and medieval Europe. The acoustic melodic formula is a structural design consisting of three conjunct intervals, namely, a lower perfect fourth, a middle third of varying intonation, and an upper third, also of varying intonation. This structure may be given in
letter notation as G-C-E(b)-G. In folk melody and in archaic art music of Asia and Europe, the lower fourth and middle third are the intervals most often found in melody, but in European music since the Middle Ages, the middle and upper thirds assume greater importance than before, becoming the major and minor triads.

In addition to identifying the acoustic melodic formula in Japan, Korea, central Asia, and Jewish, Byzantine and Latin chant, this study also investigates how such melodies have additional tones—melodic embellishments—added to them through folk improvisation and artistic elaboration. It is further shown that the imposition of modal scales and cadences has resulted in the accretion of tones and in the re-writing of existing melodies. In many diverse styles of melody in Asia and medieval Europe, ornamental figures and cadence tones can be removed from representative melodies, resulting in reduced melodies that consistently resemble the acoustic melodic formula.
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CHAPTER I

THE ACOUSTIC MELODIC FORMULA
AND ITS APPLICATION

What is the basic essence of melody? The answer to this question would provide a characteristic tone organization for melody structure that would be useful for the analysis of melody of many different musical cultures.

Innumerable approaches to the description of melody in various musical styles are available for reading; however, each is limited to the style that it describes. For example, an analysis of the four-square phrasing in the opening theme of the G Minor Symphony of Mozart would do little for our understanding of Palestrina's phrasing, and, in contrast to Mozart and Palestrina, an analysis of medieval psalter chants requires the framework of the five-part psalm-tone structure. If there is a basic and essential model of tone organization in melody, that model will be able to identify the essential elements in sample melodies of a wide variety of styles.

The diverse natures of various styles of melody have often resulted in the assumption, usually implicit, that some kind of devised formula, such as the psalm-tone,
the common practice period, or even the dodecaphonic series, must be worked into a melody for the melody to have any coherence. A significant example of these devised formulas is the major scale. The usual impression gained from reading about the major scale is one of abiding need for the scale formula, that melody will fall into disorder without it, and that melody is best described as "of a scale." Yet the fact that the minor scale is known in three forms—three being the number necessary to represent the varieties of melodic motion it represents—suggests that there is more to the genesis of melody than ladders of tones.

The realization by many recent scholars that great quantities of melody exist which do not hold allegiance to a system of theory or practice prevailing when and where those melodies occur has led to a heightened interest in modes, melody types, melodic formulas, improvisation, and other "gray areas" of melody: those examples of melody which do not follow a system of theory consistently, but yet have not collapsed into (implicitly assumed) unsystematic chaos.

The Acoustic Melodic Formula

The first purpose of the present study is to carry to its ultimate point the thrust of research into the "gray area" of melody. The goal of such research would
be a point at which there is established a tone-pattern of melody which (in contrast to scales and modes of devised systems of theory) occurs in many times and places, and which, because of its wide-spread frequency and consistency, may be used as a common denominator of tone organization in melody.

In Figures 1 and 2, there is presented a tone-pattern, referred to herein as the acoustic melodic formula, which may be seen to have the qualities just described. This formula consists of four tones, of which the lowest two are a perfect fourth apart, the middle two are a major or minor third apart (or some other intonation of the third), and the highest tone is some form of the third above that (see Figure 1). A given melody may resemble the acoustic melodic formula in an ascending ambitus (Figure 1) or a descending ambitus (Figure 2), and in either case may resemble the entire formula or only part of it. The musical examples in Figures 1 and 2 are melodies which, when taken together, map out the constituent tones of the acoustic melodic formula. By looking at the examples in Figure 1, it may be seen that the perfect fourth which constitutes the lowest portion of the formula may represent either a leap or a tetrachord succession in a given melody, and that the middle two tones of the formula may represent a leap in the melody or the interval of the leap may have a tone within it; the same is true of the highest two tones.
of the formula. In Figure 2, melodies which follow the formula in a descending ambitus are shown. In descending melodies, the interval of the fourth constituting the bottom of the formula tends to have more tones and more varieties of melodic motion than in ascending melodies.

Figures 1 and 2 present melodies resembling the acoustic melodic formula from at least eleven cultures of various centuries. The fact that the formula can be traced in such a variety of diverse types of music speaks for its validity as a common analytical model for European

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Ascending the Middle and Upper Thirds

a, Gregorian psalm tone I

b, Yemenite Jews chant

THE ACOUSTIC MELODIC FORMULA, Ascending

c, Turkish folk song
d, Byzantine chant: Kastoria 8, f. 68
e, Korean folk song

f, Gregorian Introit
g, Jacobite Jews chant

h, Jacobite Jews hymn

i, Hungarian folk song

Fig. 1--The acoustic melodic formula, ascending
and Asian melody. Furthermore, it is a flexible design for the tone organization of these diverse types of melody: it encompasses various melodies which may be fully represented by it, and it serves to analyze melodies with a certain amount of melodic motion borrowed from a system of theory. For example, the Korean folk song in Figure 1e and the Japanese court song in Figure 2c, while clearly resembling

**THE ACOUSTIC MELODIC FORMULA, Descending**

**Descending the Entire Formula**

- **a**, Syrian cantillation mode I
- **b**, Tibetan Buddhist chant
- **c**, Japanese court song

**Descending the Middle Third**

- **d**, Syrian hymn

**Descending the Lower Fourth**

- **c**, Japanese folk song

- **f**, Kirghiz teaching song

*Fig. 2—The acoustic melodic formula, descending*
the acoustic melodic formula, show some patterns characteristic of the high traditions of theory of Korea and Japan: emphasis on the note D, leaps to and from D and high G, and the A\textsuperscript{b} in the Japanese song are examples.

Analytical Characteristics

The following list explains those characteristics of the acoustic melodic formula by which melody may be analyzed:

\textbf{Four structural tones}.--The acoustic melodic formula has four tones by which the overall structure of a melody may be framed. The interval between the lowest two tones is a perfect fourth. The middle two tones are separated by some intonation of the third, and the highest tone is a third of some intonation above the second highest. These intervals will be referred to as the lower fourth, middle third, and upper third, respectively. Of the three intervals so formed, the lowest has a stable and consistent intonation, but in the two highest intervals, a wide variety of intonations are found, and these intonations may fluctuate even during the performance of a given song or chant.

\textbf{Melodic Ambitus}.--A melody may traverse the entire range of the acoustic melodic formula, or any part of it, ascending or descending or both. In the case of a melody
traversing only part of the range of the formula, it is often possible to determine which tones of the formula are involved. For example, the Hungarian folk song in Figure li, which may be described as an embellishment of one tone, might possibly occur on any one of the four structural tones of the acoustic melodic formula, but when it is compared with larger melodies which have some embellishment of one structural tone (see the three examples above it, Figure 1f, 1g, and 1h), we see that the analogous tone is always the upper tone of the lower fourth.

The formula within a melody.--The four tones of the acoustic melodic formula are referred to as the structural tones of a represented melody. That is, they are the tones which occur with the most regularity in a melody, and which mark off the ambitus of each instance of melodic motion. In Figures 1 and 2, vertical lines placed between the staves show the appearance of the structural tones in each melody. It is the consistency with which these four tones appear in a wide variety of melodies (the melodies in Figures 1 and 2 are a selection from many similar ones) that led to their being designated as the constituent structural tones of the acoustic melodic formula.

Three intervals.--The three intervals of the acoustic melodic formula are referred to as a fourth or a third
because, in melodies such as those in Figures 1 and 2, there are rarely more than two tones within the fourth, or more than one tone within the thirds.

**Other tones.**—Whereas the four structural tones of the acoustic melodic formula appear frequently and in generally predictable ways (as the melodies in Figures 1 and 2 demonstrate), the other tones which appear in melodies are more diverse in their behavior. They may appear frequently or not at all. Their intonations vary greatly, not only from one melodic tradition to the next, but even during the course of a particular performance of a particular melody. It is in fact better to think of these additional, or auxiliary tones as spectrums of possible intonations, any particular intonation of which will be heard at a particular time, or in a particular performance tradition, or specified in a particular system of theory. For example, the tone above the lowest tone of the acoustic melodic formula, as notated in Figure 1, may appear as A or A♭, or any intonation recognizable as one of those two tones. The only consistent characteristic of these additional tones is their appearance as passing tones: the melodic motion rarely leaps to or from them. (When a melody does have leaps to or from an auxiliary tone, as in the D-F-G-D motion in the Japanese court song in Figure 2c, the melody will usually be showing the influence
of some system of theory, including, possibly, the intonation and fingering of an instrument on which it was meant to be played.)

An important analytical application of the model of the acoustic melodic formula is its use for determining the structural tones in a melody in order that the auxiliary tones may be distinguished from the structural tones. In many of the analyses to be presented in the chapters to follow, a style history of various melodies can be reconstructed by removing auxiliary tones (appearing as melodic ornaments) which have been added to an archaic melody, often in several stages of accretion over long periods of time.

Nomenclature

The name of the acoustic melodic formula, as just described, came about as follows: it is called "acoustic" because it seems to be the product of no thought-out theory, but rather the result of the intuitive hearing of many thousands of often illiterate musicians in many different times and places; it is called "melodic" because it is a design by which many actual melodies may be described; it is called a "formula" because, while not being a melody itself, it is none the less a design or pattern by which many true melodics seem to find their tonal organization.
Observations of Three Types of Melody

The second purpose of the present research is to give a demonstration of the use of the acoustic melodic formula in a survey of the traditions of melody in a number of cultures: Japanese and Korean, central Asian, Jewish, Byzantine and Latin chant of the first millennium of the Common Era, and late medieval and Renaissance music (in Europe).

The method of this survey and analysis, to be used in the following chapters, consists of two stages. The first stage consists of demonstrating that some known melodies in each area to be surveyed resemble the acoustic melodic formula closely, and in so doing, represent the basic essence of melody. In the second stage, those melodies of each area that do not resemble the formula will be shown to represent the practice of some system of theory found in that time and place, and it will be shown that most systems of art music in Europe and Asia have as one of their theoretical foundations the model of the tetrachord as represented by the lower fourth of the acoustic melodic formula. These two stages of analysis will result in observations of three types of melody, as explained next.

Melodies Representing Theory

Those melodies that adhere to a system of theory have characteristics unique to that system, and, when compared to melodies of other systems, are of a different nature.
(This type of observation is well-known and is the conventional "textbook" study of melody.)

Heterogeneous Melodies

Those melodies which more or less resemble the patterns required by a prevailing system of theory often diverge from those patterns in ways which might be compared to certain folk styles, archaic styles, or the theoretical practice of some other high culture. A typical study resulting from this type of observation would be a study of possible maqām patterns in the folk music of southern Spain, or a search for major-scale patterns in Japanese folk music. (This second kind of observation is the closest to "state of the art" research into melody, which attempts to describe the nature of various modes, melodic patterns, melody types, and melodic formulas.)

Melodies of the Acoustic Melodic Formula

As shown in Figures 1 and 2, melodies which represent the acoustic melodic formula are found in each of the musical cultures in the survey below, and such melodies are typically found in folk music, early music, and other categories which are least affected by the high theory of that culture. (It is this type of observation that is newly attempted in the present dissertation.)

As may be seen by comparing these three kinds of observations, the second kind is a transitional category
between the opposite extremes represented by the first
and third. The second category represents study of melodies
which largely resemble an established, formulated system
of theory in many points, but yet have their own unique
characteristics. In observing these unique characteristics,
few scholars have heretofore attempted to establish a
standard of melody by which the points of uniqueness
might be described. And it might be said that most studies
seeking the second type of observation rely on the estab-
lished norm in the musical tradition involved (first
type of observation) in the description of unique melodies.
The danger in this situation is that such melodies are
described in terms of what they are not (failure to repre-
sent such devices of theory as scales) rather than what
they are. This results in a fragmented view of these
unique melodies, in which they are described as typical
of some local ethnic group or archaic style, and in which
no attempt to compare them to a broad, Eurasian norm
is made.

Objectives of the Present Study

It is the goal of the present study to demonstrate
that the acoustic melodic formula may be seen in a large
number of melodies in each of the areas to be surveyed,
and since it occurs in those types of melody least affected
by the practices of theory, it apparently represents the
essential nature of melody. In other words, if all the melody patterns prescribed by various systems of theory could be removed, what kind of melody would then be found in Europe and Asia? The implicit assumption in much previous research is that some sort of wild chaos would result: art music, without the guiding intellect of the composer and theorist, would vanish, and the melodies of folk music would be crude, unsystematic, and radically different from one ethnic group to another. Indicative of this assumption is the fact that so much previous writing on melody describes divergent melodies in terms of the theoretical norms that they "ought" to resemble (for example, the attitude that the pentatonic scale has "only" five tones), or in terms of melodic formulas which represent only a limited repertory of melodic practice. But with the acoustic melodic formula, there may be a standard by which some degree of systematic unity for nonconforming melodies of Europe and Asia can be established.

More important than the establishment of such a standard melodic formula, however, is the use of the formula in studies of the second type of observation described above. While much previous study of heterogeneous melody has had a perspective stemming from the first type of observation, there may now be the possibility of melody studies in which one or a group of melodies are not described as to how they are lacking in some principle of
of theory, but rather, as to how some part of theoretical practice was worked into a melody born of an already existent and independently functioning melodic pattern: a systematic pattern that occurs spontaneously in many times and places. It is hoped that the present study will contribute to such a broadening and solidification of the study of melody.
CHAPTER II

SURVEY OF MELODY IN JAPAN AND KOREA

In the music of both Japan and Korea, there are today both distinctively native melodies and long-standing traditions of art music. The art music of both countries, however, was originally founded on Chinese court music imported from the T'ang dynasty in the Middle Ages. This dichotomy—native folk music as contrasted with art music derived from China—allows the two extremes of tonal organization in melody described in the preceding chapter—melody representing the acoustic melodic formula as compared with melody designed on principles of systematic theory—to be put into observable contrast.

Furthermore, the music of T'ang was used selectively and with modifications in both countries, and especially in Japan, there are extant manuscripts documenting a history of artistic growth and change in the melody of court music. Some of this progress will be observed below.

This survey will begin with a study of Japanese folk music and a comparison of Japanese melody with the model of the acoustic melodic formula. Then, the acoustical principles of Japanese folk melody will be compared with the imperial court music known as gagaku. An overview of the
parallel situation in Korea will conclude this chapter.

Japan

The music of Japan contains many concepts of systematic theory derived from Chinese court music, particularly of the T’ang dynasty, as does Korean music. However, the history and extent of this influence are better documented for Japan than for Korea, as more written sources have been preserved in Japan. Furthermore, in the twentieth century, a greater number of qualified scholars have carried out research into the nature of Japanese melody.

The objective of the present study of melody in Japan is, first, to review studies of folk music by modern writers from the viewpoint of the acoustic melodic formula. Then the melody of the imperial court music, gagaku, will be studied for evidence of three stages in its growth as an art form. These stages of growth include, first, the original T’ang melodies of the eighth century A.D. and earlier; second, a stage of development involving the selective application of Chinese theory and the related development of ornaments in gagaku melody; and a final stage, dating from after the twelfth century, in which the gagaku repertory became somewhat stagnant and solidified as an "ancient" form of music.

Folk Music

Japanese scholars in the twentieth century refer to the folk music of their country as min-yō, a term which
refers to

... all kinds of song that are traditionally inherited mainly through oral transmission by non-professional singers ... [including] those songs which are now widely sung by the people but were originally composed by professional musicians. 1

In Figure 3, a children's game song recorded in Tokyo in 1961 is shown. It is significant that most such game songs, known as warabeuta by the Japanese, are learned by the children from each other on the playgrounds, and are not taught in the school classrooms. 3 Therefore, the warabeuta melodies tend to follow acoustical structures rather than the scales taught in school. For example, the melody in Figure 3 resembles the scale of G minor in some ways, but the emphasis on F-natural denies that tonality, and the outline of the acoustic melodic formula on D-G-Bₜ is unmistakable.

Fig. 3--A Japanese children's game song (warabeuta) recorded in Tokyo in 1961.


2This melodic example is taken from Warabeuta no Kenkyū: Game Songs of Japanese Children, edited by Fumio Koizumi (Tokyo, 1969), Vol. I: Comparative Scores, p. 150.

3Ibid., p. x.
In the southern islands of Okinawa, the harvest song "Hōnen no Uta," shown here in Figure 4, is common. The acoustic melodic formula, here notated as D-G-B-D, may be used to describe the tonal organization of this song.

Fig. 4—"Hōnen no Uta," a harvest song of Okinawa. This transcription by Mary Kay Adams, 1975, from a field recording made by members of the Ethnomusicology Seminar of Tokyo University of Arts, 1974.

Through the centuries, indigenous Japanese melody has been affected by the theoretical systems of high art music. The most ancient of the known influences are two pentatonic scales that appeared in China by the fourth century B.C. However, it must be realized that we do not presently know how these scales were used in the making of melody. There were two forms of the pentatonic series recorded in

in ancient Chinese treatises. One, which first appeared in the treatise *Kuan-tzu*, was the series C-D-F-G-A. Later, the series F-G-A-C-D was discussed in the treatise *Shih-chi*. Eventually, both of these anhemitonic pentatonic scales were introduced to Japan, and, from about the twelfth century, became so commonly found as to be recognized as the basic scales of the nation's music. In Japan, these two scales were known as the *ritsu* and *ryo* scales respectively.

Their distinguishing characteristics were the perfect fourth of the *ritsu* scale and the major third of the *ryo* scale. (Those intervals are measured from the lowest note upwards.) After the Middle Ages, these two scales underwent a change in application at the hands of folk musicians and trained performers of popular and art music. Significantly for the present study, the *ryo* scale, with no distinguishing perfect fourth, fell from common use, and two forms of the *ritsu* scale, characterized by the perfect fourth in its lower register (which is comparable to the lower fourth of the acoustic melodic formula) became standard. One of the new *ritsu* scales was the *yo* scale (e.g., D-E-G-A-C-D); the other was the *shi* scale (e.g., C-D-F-G-A-C-D).

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5Ibid., p. 261.

other was the in scale (D-E\textsubscript{b}-G-A-C-D), with a semitone in its lower fourth, which is today recognized by even the lay listener as being distinctively Japanese in character, "... and is apparently of ancient and indigenous provenance."\textsuperscript{7} In other words, an overriding tendency for melody to gravitate toward the tetrachord (the interval of the perfect fourth with any auxiliary tones within it) as a structural foundation has prevailed through the years.

The history of the ryo and ritsu scales, in which the distinguishing third of the ryo scale is abandoned in Japanese min-yō for two species of the tetrachordal ritsu scale, is the basis for understanding modern research into Japanese melody. But it must be remembered that the yō and in forms of the ritsu scale are in fact scales, and therefore cannot fully represent the modal aspects of melodic behavior. It is the recognition and reconciliation of these two aspects of melody--scale vocabulary on the one hand and the phrase-by-phrase nature of melodic motion on the other--that has been the crux of significant research into Japanese melody in recent years. It will be appropriate at this point to review some of this research.

Koizumi's tetrachords.--Fumio Koizumi, director of the Ethnomusicology Seminar at Tokyo University of Arts, first published his theory of the four basic tetrachords

\textsuperscript{7} Powers, "Mode," p. 446.
in native Japanese music in 1958. His interest in the tetrachord was begun by the writings of the Jewish ethnomusicologist Robert Lachmann. In the 1960s, he directed his Ethnomusicology Seminar in the fieldwork involving children's game songs in Tokyo cited above. More recently, he has written a concise statement of his theory for English-language publication, where the word "tetrachord" is replaced by the term "4th-frame."

The first step toward understanding Koizumi's theory is found in the children's game songs, warabeuta. Koizumi is the first scholar to recognize the small but essential inventory of native melodic formulas contained in his country's children's game songs, and he has devoted a considerable amount of research to them. The fundamental aspect of the warabeuta is the tetrachord, considered as a perfect fourth with only one passing tone within that interval. As there are four positions at which the passing tone can appear (E♭, E, F and F# in an interval of D to G), there are four species of tetrachord to expect in any given melody. However, these species do not appear

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9 Koizumi was especially influenced by Robert Lachmann, *Die Musik der aussereuropäischen Natur- und Kulturvölker* (Potsdam, 1929), pp. 6-7, and the entire Chapter I of *Musik des Orients* (Breslau, 1929).

capriciously. Koizumi has been able to classify them as follows:

1. The tetrachord (or, 4th-frame) with minor third (e.g., D-F-G), typical of children's game songs and folk music (min-yō);

2. The tetrachord with minor second (e.g., E-F-A), typical of children's game songs and, especially, the in scale of popular and art music since the sixteenth century;

3. The tetrachord with major second (e.g., D-E-G), which originated in the imported Chinese theoretical practices of gagaku;

4. The tetrachord with major third (e.g., C-E-F), typical of Okinawa.¹¹

Of course, most melodies, including many children's songs, have a range in excess of a fourth. And again, there prevail the continuing teaching and application of the yō and in scales in amateur, professional, and art music since the twelfth century, and the ensuing influence of these two octave-species scales on music of the oral tradition. To account for such melodies of wider range, Koizumi combines his tetrachords into conjunct and (more importantly) disjunct pairs. For example, the in scale would be described as consisting of a tetrachord with a

minor second in its lower 4th-frame and a tetrachord with a minor third in its upper, disjunct 4th-frame, or E-F-A-B-D-E. After some twenty years of analyzing melodies, Koizumi reports that there are four kinds of scales in the min-yō repertories: 12

1. The min-yō scale, consisting of two tetrachords with a minor third, or D-F-G-A-C-D with D or G as tonic notes, is the basic scale of Japan's folk and popular music;

2. The miyako-bushi scale, consisting of two tetrachords with a minor second, or E-F-A-B-C-E with E or B as tonic notes, is also called the in scale in the sense that it is derived from the lower tetrachord of the traditional in scale. It is also common in min-yō music;

3. The ritsu scale, consisting of two tetrachords with major second, or D-E-G-A-B-D, is the traditional ritsu scale described above, from which the yō and in scales were derived. The reader may now see that the "Honen no Uta" in Figure 4 is an example of the ritsu scale;

4. The Okinawa scale, consisting of two tetrachords with major third, or C-E-F-G-B-C, is unique to those islands. 13

In comparing these four octave-species scales of Koizumi's theory with the acoustic melodic formula,

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13Ibid., also in Nihon Dentō Ongaku no Kenkyū, pp. 204 and 248.
it may be seen that the lower tetrachord (4th-frame) of each scale can be compared to the lower fourth of the formula. But the upper half of each scale is a structural fourth rather than the middle and upper thirds of the acoustic melodic formula. The cause of this distinction may be understood in two ways. First, some Japanese melodies require for their description two disjunct tetrachords because, in actuality, the melody traverses only the lower fourth of the acoustic melodic formula, but the lower fourth is used in various transposed positions. For example, the melody in Figure 5,\textsuperscript{14} which has been used by Koizumi to illustrate his scales of two tetrachords, does not have any phrases which completely traverse the octave range of the scale. Rather, each phrase is structurally limited to either a lower or higher tetrachord, namely, B-D-E in two positions, or F\#-A-B. By this second viewpoint, then, it may be said that while the structure of this melody is an octave of two disjunct tetrachords, it may also be described as the lower fourth of the acoustic melodic formula used in three tessituras. In this sense, it would not be appropriate to say that the upper range of the melody fails to represent the upper region of the acoustic melodic formula. In actuality, the middle and upper thirds of the formula never came

\textsuperscript{14}Idem, Nihon no Dentō Ongaku no Kenkyū, p. 116.
into practice at all: the melody is limited to the lower fourth of the formula, which is used in transposition.

Fig. 5--Japanese popular song (nagauta)

The second way in which the distinction between Koizumi's scales and the acoustic melodic formula may be understood is demonstrated by the Japanese melody in Figure 6, with melodic phrases of extended range. This melody is of the art song repertory of the eighteenth and nineteenth centuries, and is particularly interesting for its changing inventory of pitches. In his own analysis of this melody, Koizumi notes that it is in the anhemitonic pentatonic mode on D (D-E-G-A-B-D), and that it has some additional, foreign

15 Ibid., p. 191.
tones in the opening passage: in measure 1, there is a C#, but in measure 2, there is no C# and the appearance of B results in a gapped scale. G is also prominent from this point, and in measure 3, both G and C# are present. Up to

![Musical notation]

Fig. 6—"Shō no Hanadoki," a Japanese art song of extended melodic range and pitch vocabulary.

this point, Koizumi feels that this could be considered as a heptatonic melody, but from measure 4 onward, C# and G virtually disappear, and we are left with a pentatonic melody (D-E-F#-A-B-D). On a second inspection of this tune, however, Koizumi would also say that there are so few notes in measure 1 that modal analysis is impossible, and as to the appearance of G in measure 2, the C# is now missing and the F# is weak. Similarly for measure 3, F# is now absent, and the possible explanation of C# as an altered tone substituting for B is poor. Koizumi would further say that the only way this pentatonic melody could be compared to a heptatonic scale would be for the time dimension to be
contracted so that all of the notes appear together in one place. In other words, Koizumi seems to be pointing out that the traditional definition of a scale—an inventory of all the notes present in a melody—is somewhat uninformative because only a few of the notes appear in any one place, and moreover, the way the notes relate to each other in the flow of melodic motion is always changing.

In comparing the melody in Figure 6 with the acoustic melodic formula, some phrases resembling the fourth and thirds of the formula may be found. For example, the first four measures might be interpreted as a D-G-B-D structure, in which the lower fourth has two auxiliary tones, the upper third (B-D) has a C♯ within itself, the sixteenth-notes at the end of measure 3 are a melisma decorating D, and measure 4 is the lower fourth transposed one octave higher. Or, the opening of the melody may be described as an F♯-B-D formula, in which the G at the beginning of measure 2 is the inner tone of the distinctively Japanese tetrachord with a minor second (F♯-G-B) characteristic of the in scale. However, from that point on, the emphasis of G-B-D and the absence of F♯ makes that analysis untenable, as the tetrachordal foundation of the acoustic melodic formula has either been lost or shifted to the tessitura just discussed, D-G-B-D.

16 Ibid., p. 191.
Needless to say, the difficulties in analyzing the melody in Figure 6 lie in the nature of the melodic motion. In discussing the nature of melodic motion, Koizumi uses the Japanese word kaku-on; his own English translation of this term is "nuclear note," and he also offers the German Kernton, which was first used by Lachmann, as a translation. The kaku-on is that note of a melodic phrase which has the characteristics of a tonal center, a cadence, or both. Figure 7 presents a min-yō melody and Koizumi's analysis of the nuclear notes.

Fig. 7--Koizumi's analysis of a min-yō melody

Koizumi believes that there were once many forms of tonal organization in Japanese music, and these ancient and primitive Japanese modes (in the sense of melody type, not scale) were collected together and assimilated into the two standards of the ryo and ritsu scales, but the acoustical characteristics of the tetrachord have also prevailed.

\[17\] Ibid., p. 114. \[18\] Ibid., p. 115. \[19\] Ibid., p. 193.
Melody elaboration.--The genesis of Japanese melody in the tetrachord of three tones results in the tetrachord shapes serving as a common denominator for melodic repertoires and traditions. It might be assumed that the consistent presence of the tetrachord and the scales based on it would provide a basis for a rich tradition of improvisation, but in actuality, improvisation and variation are somewhat unknown in the art music of Japan. One of

![Fig. 8--"Shoden," a Japanese folk melody for flute, in student and teacher versions.](image)

the few studies of improvisational variation in Japanese music deals with a folk melody commonly played on flute at summer festivals in the Tokyo area. In this fieldwork,

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Malin obtained two versions of the tune "Shoden," one being a simple version for students and the other an ornamented version for experienced performers. These two versions of "Shoden" are reproduced here in Figure 8, where it may be seen that the student version of this folk melody is represented by the acoustic melodic formula on D-G-B\textsuperscript{b}-D, and the teacher's version is the same tonal structure, filled in with ornaments. It is significant that the one or two structural tones of each phrase in the student version (that is, the kaku-on of Koizumi's theory) are maintained in the teacher's version, while the decorating tones are less systematic. In the passage shown here, no two of the decorating figures are alike.

Japanese modality.—In the preceding reviews of studies of Japanese melody, two ends of a spectrum of tone organization in melody have been determined. At one end is a type of melody based on the perfect fourth with a middle tonic of flexible intonation. This tetrachordal framework may be given melodic ornaments, but there is, apparently, no patterning in the shape or application of the ornaments as systematic as the three-note tetrachord.

At the other end of the spectrum are those melodies which are largely based on the scales derived from the Chinese anhemitonic pentatonic scales. Even here, however, 

\textsuperscript{21}Ibid., p. 49.
the acoustical, structural tetrachord may still be observed, and there is still a hierarchical distinction between the essential nuclear notes and the flexible and dispensable ornamental tones. This type of melody is illustrated by the melody in Figure 7. Since min-yō music is not only folk and popular music but also the music of serious amateurs and artistic performers and composers of often high professionalism, there is often a recognizable mixing of elements of the acoustical tetrachord and of scale theory in min-yō melody.

Ultimately, in Japanese music that is thoroughly grounded in artistic theory, the role of the tetrachord and of the nuclear notes becomes more difficult to identify. At this point, Japanese art music invites comparison with the music art music of mainland China, which primarily consists of melody representing systematic scales rather than acoustical tetrachords. Such a comparison has been made by Cho, in which the vocal parts of gagaku pieces are compared with art songs of China. As a result of his comparative study, Cho identified the following as distinctively Chinese characteristics of melody:

1. No tonal hierarchy: any diatonic tone may go to any other; that is, there is a free succession of tones.

2. Any diatonic tone may serve as tonic, and the role of tonic may be passed about among the diatonic members of the anhemitonic pentatonic scale of a particular song;\textsuperscript{23}

3. Any diatonic tone may serve as a cadential tone.\textsuperscript{23}

Looking in retrospect from the viewpoint of Cho's list of Chinese characteristics of melody, we may again think of the spectrum of tonal design in Japanese melody that was depicted above. At one extremity is that realm of melody governed by the principles of the acoustic melodic formula. At the other extremity is that realm of melody in which each tone of the scale is so thoroughly and precisely identified that the functions of tonic and cadence may occur on any tone. In between these two realms of melody lies the body of melody to which the term "gray area" of melody used in Chapter I is applicable. In the case of Japan, this would apply to most min-yō melody and even some art music. Here, the modal hierarchy of the tetrachord is still a commonplace but the influence of the thinking underlying the Chinese scales, by which the diatonic tones are equally recognized and equally capable of realizing modal functions, is blended into the melodic style. This increasing preëminence of tones which, in the acoustic melodic formula, are only auxiliary tones, may be observed in the melody in Figure 6. The difficulty in analyzing this melody arises from the

\textsuperscript{23}Ibid., p. 90. \textsuperscript{24}Ibid., p. 93.
emphasis on those tones which should be subordinate to those of the structural perfect fourth (for example, G in measure 2 of Figure 6), the relatively free succession of tones (G-D-B in the same measure 2), and the indistinct shift of the tonal framework from what seems to be, at first, F♯-B-D to D-G-B. In other words, this melody is displaying the distinctively Chinese characteristic of upgrading all the available tones to full structural capabilities, and as the tones become equalized and fixed, the tones of tonic and cadence become migrant.

Ironically, the tenacious tetrachord causes some of this equalization of tones in a given melody. For example, the "Honen no Uta" in Figure 4 is similar to the acoustic melodic formula on D-G-B-D, the principal discrepancy being the emphasis on the note A. From the perspective of the acoustic melodic formula, the note A is the auxiliary tone of the middle third of the formula (G to B) and so should not be emphasized nor move to tones other than G or B. But the ritsu scale, with its two disjunct tetrachords, changes the role of A from that of auxiliary tone to that of structural tone (the perfect fourth A to D), and thus, what was acoustically an auxiliary tone becomes, as a result of the interaction of the ritsu scale and the acoustic tetrachord, and emphasized tone.

As more and more tones in the melodies of a musical style or tradition become emphasized, the patterns of
melodic motion become more and more varied, and at the same time, there is greater precision in the art of tone organization, that is, theory. The cause of this change is applied awareness of scale intonation on the part of the Japanese performer and composer. In this realm of Japanese music, where a conscious application of learned theory is most evident, improvisation is unknown and rote memorization of exact pitches is the accepted method of teaching music to students.25

The continuation of this survey of melody in Japan will turn from those types of music (min-yō) in which the acoustic tetrachord is more essential than the scales of art music to a type in which melodic traits based on a system of theory is predominant. This type of melody is in the of gagaku.

Gagaku

In addition to identifying the aforementioned Chinese elements in the Japanese court music called gagaku, Cho also demonstrated how distinctively Japanese patterns of melodic behavior are to be seen in the gagaku vocal parts. The Japanese elements cited by Cho are essentially the same as those described by Koizumi: distinctive functions for each tone, tetrachords consisting of semitone and a major third, structural intervals of the perfect fourth and major third,

25Malm, "Shoden," p. 44.
and prescribed cadential patterns, among other things.

However, since gagaku is an intellectual form of music that was introduced to the Japanese court from the Chinese T'ang court as part of diplomatic exchanges, it would seem that gagaku melody would typically be a Chinese "free succession of tones" as defined by Cho. But as Cho demonstrated, formulaic melodic motion over the framework of the tetrachord can be found in the vocal parts of gagaku. Impeding a full knowledge of this situation is this lacuna: the process by which the music theory from China was worked into gagaku in Japan is not fully understood. A selection of analyses to be reviewed next was chosen in order to elucidate the main points of what is known about this process, with particular attention to the nature of melody. A few basic clarifications should be made immediately. For one, any history of Japanese music will mention at some point that gagaku is based on Chinese theory imported during the eighth century and later. Actually, as the analyses to be reviewed below will bear out, Chinese court melody and music theory seem to have been two different affairs in those days. Furthermore, the Chinese theory was modified and reinterpreted in Japan as gagaku musicians, apparently in the twelfth century, began to assign various melodies and compositions to the pentatonic scales from China.

\[^{26}\text{Cho, "Non-Chinese Elements," pp. 133-134.}\]
Particularly indicative of this process are the treatises from the period that vary the mode to which a given melody belongs, indicating that the tunes existed before their assignment to modal classification. For example, the composition Seimeiraku was changed from taishiki mode to oshiki mode, and Katen no Kyū was changed from banshiki mode to ichikotsu mode. Various modes of those times became obsolete and their assigned melodies were merged with other, similar modes. The number of modes decreased until the six standard modes of modern practice remained. Even these six are grouped into two categories, as explained above: ryo (those whose third pentatonic tone is a major third above the tonic) and ritsu (those whose third pentatonic tone is a perfect fourth above the tonic).

Furthermore, the analyses below will demonstrate that changing modal theory was not the only influence on the nature of medieval Japanese melody. The slow accretion of ornaments into melodies of long-standing use was also a factor which changed individual melodies as well as the general nature of gagaku melody. The presence of ornaments in Japanese folk melody has already been displayed in the study of "Shoden" in Figure 8. The studies of court music below will demonstrate what a drastic effect ornaments had.

28 Ibid., p. 369.
29 Ibid., p. 137.
Based on these two basic influences in medieval Japanese melody—the standardization of modal scales and the accretion of ornaments—the present study will address the following topics:

1. The nature of the central Asian folk melodies mixed in with the art music of China that was imported to Japan in the eighth century and thus became known as the Tōgaku (T'ang music) style of gagaku;

2. The nature of Tōgaku melody which, under the influence of the modes related to the ryo and ritsu scales, was given reinterpretation of its tonal organization from about the twelfth century;

3. The nature of ornaments in Tōgaku, the manner in which they were applied to the pre-thirteenth-century melodies, and the resulting changes in the style of gagaku melody;

4. The continuing presence in modern Tōgaku, as well as other styles of gagaku, of formulaic melodic motion based on the structural tetrachord.

These four points of inquiry will now be addressed, beginning with a survey of the history of gagaku.

History.—The history of the gagaku repertory begins in the Sui (581-618 A.D.) and T'ang (618-907) dynasties of ancient China. Music from throughout East Asia and even
India and Persia was brought to the centers of Sui and T’ang culture, often as a form of tribute. Apparently these imported styles were forms of folk music, and were blended into the intellectual Chinese repertory. It was this eclectic repertory which was introduced to Japan when the imperial court at Nara established diplomatic relations with China in the eighth century. Evidence of the diverse nature of T’ang culture lies in the Shōsoin, an imperial storehouse in Nara containing ritual objects dating from the eighth and early ninth centuries. In addition to the general inventory,

... instruments of both the Chinese and the foreign types have also been preserved. Even the decorative motifs that cover the instruments in the Shōsoin reflect the strong influence of Persia and central Asia in T’ang art."

The popular sentiment that “the culture of the T’ang dynasty which embraced the whole of Asia has been preserved in this repository” is usually stressed in descriptive books about the Shōsoin treasures, with evidence for the sentiment consisting of statements that one of the harps (a kugo) in

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31 Garfias, Music of a Thousand Autumns, p. 38.

the Shōsōin is of a type that "... came to Japan through Kudara of Korea and may be traced back to Assyria," and describing a silk brocade as "... closely resembling ... the so-called 'Shitenno' banner which has been known to the world ever since about 1898 as of a Sassanian design."

(The Sassanian empire was the last native Persian empire, falling to the Arabs in 636 A.D.)

The music of the expansive T'ang empire that was brought to Japan was accepted as a form of ritual of great intellectual and moral significance. The T'ang music was preserved and maintained. It has been performed continuously from the eighth century down to the present day, although at times the tradition has suffered from various degrees of neglect or abuse. Another matter affecting the nature of gagaku is its diversity. From its beginnings in the eighth century, the gagaku repertory has not been limited to music from the T'ang court. In addition to the Tōgaku repertory from the T'ang dynasty, the Japanese court musicians began performing the court music of Korea, called Komagaku and itself the T'ang music that was imported to Korea, and the gagaku musicians continued to perform the ceremonial music of their native

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33 Ibid., p. 18.  
34 Ibid., p. 19.  
religion, Shinto, which repertory is called kagura or mikagura, together with new art songs of courtiers.

The proudest claim of modern gagaku has been that its three repertories—Togaku, Komagaku, and kagura—have been carefully maintained and continuously performed since medieval times. However, it is now widely thought that, over the centuries, the music has in fact changed somewhat. One of the most severe statements in this regard comes from Harich-Schneider, who lived in Japan for many years and performed European art music with the gagaku musicians:

Between 1873 and 1895 the notion of an immutable gagaku, unchanged since Nara times, was fabricated and became established. This theory was accepted with enthusiasm—almost as an article of faith. No such claim is found in earlier sources which limit themselves to a justified pride in the great antiquity of this music, and recount its natural development, decay, or resurgence.

Furthermore, the modern versions of much of the gagaku repertory have not been scientifically preserved, as in the case of the gagaku anthology by Shiba, which,

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37 Idem, "The Secret Mi-Kagura of the Japanese Imperial Court," Selected Reports I (1968), 150.


in Harich-Schneider's opinion, is "... thus far the most scholarly work published by a member of the court musicians..." but yet is defective in that

The explanations are vague, and precise information on sources is lacking. It is thus difficult to treat Shiba's transcription of saibara in G minor instead of so-jo [ryo scale on C-A-B-D-E] as more than a modern arrangement... (Shiba's modifications were apparently done to eliminate dissonances of the semitone in the music.)

There are, then, three aspects of the history of gagaku which make the study of it problematical: its eclectic origins in central Asia, the diverse nature of Japanese gagaku (Togaku, Komagaku, kagura), and the imperfect state of modern survivals.

Despite these problems, there is much interest in the historical nature of gagaku, and numerous scholars have attempted to get a view of ancient melody through the lens of the surviving gagaku repertory. There are basically two views of ancient gagaku melody, and a survey of opinions on the nature of ancient gagaku melody most properly ought to begin with the views of the gagaku musicians themselves.


44 Ibid., p. 558.
Two views of gagaku melody.—In the view of present-day gagaku musicians, which view has been presented to the West by Garfias, the melodic texture of gagaku is "... the contrast between the ornamental version of the high wind parts and the more abstracted simple melody of the instruments of fixed pitch." In other words, "both the ryūteki and the hichiriki play the main melody of the composition,..." while "the sho produces ... an abstraction of the main melody pitch being played by the ryūteki and hichiriki." Similarly, "the 13-string zither sō-no-koto ... plays an abstraction of the hichiriki and ryūteki melody, but realizes it in stylized octave patterns and isolated single notes." The lute (biwa) also "... abstracts the main melody ..." To understand the actual comparisons of the instrumental parts, the excerpt from the score of Ittokyō given in Figure 9 may be referred to. Ittokyō is one of the oldest works in the gagaku repertory; it was already an established number when its choreography was recast for the enthronement

48 Ibid., p. 514. 49 Ibid., p. 514.
50 Photographs of these instruments are in "Japan," The New Grove Dictionary of Music and Musicians, Vol. 9, pp. 511-514 and 525, Figures 2, 3, 4, and 12.
51 Garfias, Music of a Thousand Autumns, p. 204.
Fig. 9—The opening passage of Ittokyō, a Tōgaku composition in the gagaku repertory (percussion omitted).
of the Emperor Nimmyō in 834. However, it must be emphasized that the passage quoted here is the music as it is performed today. In comparing the two uppermost staves of the score with the next three lower, the statement that the ryūtēki and hichiriki lines are the main melody while the parts for the shō, koto, and biwa are simplifications thereof is made clear. However, it will also be noticed that the koto and biwa, while more simple, also have ornaments. It should also be mentioned that the shō, a mouth organ with bamboo pipes that sound simultaneously, plays non-functional tone clusters called aitake, the lowest note of which is the melody. In the view of the gagaku musicians, gagaku texture is a matter of heterophony, in which the basic melodies are accompanied by their simplified forms.

In contrast to the views of the traditional gagaku musicians, a group of British scholars headed by Laurence Picken of Cambridge have attempted to redefine the nature of, especially, instrumental gagaku melodies, and have placed a greater emphasis on Chinese sources than previous Japanese or Western scholars.

The core of the argument originating from Cambridge centers on the varying complexities of the melodies of the


various instruments that perform in the Tōgaku ensemble. Picken would say that the simpler melodic parts, played by shō, koto, and biwa, are the original tunes, and quite possibly similar to the central Asian folk tunes brought to the T'ang court as tribute. The ryūteki and hichiriki parts are those same tunes, but with melodic embellishments added in Japan. To allow time for the playing of these embellishments, the tempo of each Tōgaku composition has been drastically slowed down.\footnote{Garfias, Music of a Thousand Autumns, pp. 225, 235, and 267.}

On closer inspection, however, the distinction between simple and elaborated parts can be further defined. The Picken group describes the the ryūteki and hichiriki parts as more elaborate than the other parts; it may further be added that the ryūteki part is more elaborate than the hichiriki. This is true of Ittokyō, as shown in Figure 9, and it is also true of these parts in the opening phrases of three other Tōgaku pieces, as shown in Figure 10.\footnote{D. R. Widdess and R. F. Wolpert, editors, Music and Tradition: Essays on Asian and Other Musics Presented to Laurence Picken (Cambridge, 1981), p. ix.} In each of these three pairs of ryūteki and hichiriki parts, the ryūteki part can be seen as a more elaborate version of the hichiriki part. Typically, the elaboration consists of making a long note in the hichiriki into two shorter notes in the ryūteki part.
Fig. 10--The opening passages of the ryūteki and hichiriki parts of Ryūkaen, Kaiseiraku, and Batō, three Togaku compositions.

Another refinement of the assessments of the Picken group would be more precise descriptions of the ornaments. For example, the additional tones in the ryūteki parts (that is, those not in the hichiriki parts) are generally
homogeneous with the whole melody: they are smoothly woven into the melodic flow. By contrast, the ornaments in the koto and biwa parts are distinctly different in nature: they may be characterized as rapid groups of short notes terminating on a main note of long duration, or as arpeggios whose intervals resemble the tunings of the strings of the instruments. These ornaments, then, are quite different from the ornaments in the wind instruments, and easily discerned, making the unadorned melodies of interest to the Picken group readily seen.

When an entire wind part of a Togaku work is viewed in toto from the perspective of the Picken group's analyses, still a third characteristic of ornamentation in this music may be observed. Figure 11 presents the hichiriki part

\[ \text{Fig. 11—The hichiriki part from Etenraku (hyōjō mode), a Togaku composition.} \]

\[ \text{Masumoto Kikuko, Gagaku: Dentō Ongaku e no Atarashii Apuro-chi (Tokyo, 1968), p. 134, Example 84.} \]
from *Etenraku* in *hyōjō* (*ritsu* mode on E), one of the most frequently encountered *gagaku* works. Looking at this *hichiriki* part from the perspective of the structural tetrachord, it is not difficult to see this melody as a series of embellished perfect fourths: measures 1 to 4, B to E; measures 5 to 8, E to A; measures 9 to 11, F♯ to B; measure 12, B to E; measure 13, E to A; measure 14, B to F♯; and in measures 15 to 24, the acoustic melodic formula on E–A–C may be seen with the middle third, A to C, transposed down an octave (a necessary adjustment to fit the instrument's range). But it should be noted that this series of tetrachords is not embellished uniformly. The first two instances of the tetrachord (measures 1 to 4 and 5 to 8) are more elaborate than the third instance (measures 9 to 13), while the tetrachord in measure 14 is wholly unadorned. It is interesting to compare the tetrachord on E to A found in measures 5 to 8 with that in measure 13, as the latter might well be interpreted as the interval of F or F♯ to A were the phrase in (especially) measure 6 not present for reference.

From the foregoing, the distinctions between the ornaments of the *Tōgaku* wind and string parts (omitting the *shō* for the moment) may be restated more precisely. The melodies of both types of instruments are apparently all the same melody. This common melody is today found with ornaments that vary according to the instrument performing it. The ornaments of the string instruments (*koto* and *biwa*)
share the characteristic of being idiomatic to their respective instruments. Furthermore, these ornaments for the strings are different in nature from the tunes which they embellish, making it easy to distinguish modern ornament from ancient melody. For the wind instruments, apparently because of the idiomatic facility with which tones may be sustained by blowing, the ornament tones resemble the tones of the original tune (perhaps a folk song from central Asia) more closely. So homogeneous are the ornaments for winds and the original tunes that, were it not specifically assumed that ornaments were present, the melodies of the wind instruments would appear to be monolithic. This monolithic quality is what has led the gagaku musicians into thinking that the wind parts are the main melodies and the string (and sho) parts are simplifications. It may be assumed that if the ornaments of the string parts were as homogeneous as those of the wind parts, this thinking would never have come about. Be that as it may, the various types of ornaments were apparently added to the original melodies in unsystematic ways. In any given melody, portions of it might be floridly ornamented while other portions of it might remain plain. As already mentioned, the ornaments are idiomatic to the different instruments, which strongly suggests that the ornaments were unknown in original gagaku and were added as playing techniques allowed. As the unsystematic process of accretion of ornaments continued
through time, the application of still newer ornaments was also unsystematic. At least in the wind parts, as the comparison in Figure 10 suggests, ornaments of the second and later generations of accretion might have been added to an as yet plain note of the original melody or to a note of another ornament previously interpolated into the melody. For this reason, nyūteki parts closely resemble hichiriki parts but display ornaments which could appear in the hichiriki parts, too.

In short, the distinction between the wind and string parts suggested by the Picken group is not as divisive as it seems. The reason that the string parts seem plainer than the wind parts is the result of the characteristics of the instruments: the strings do not sustain well, and the tones can be strummed quickly. But the process of embellishment is the same for all the instruments, except the shō, whose pipes are occupied with the playing of the aitake (chords) and so are not free to play additional ornamental notes.

In order to clarify further the theories of the Picken group and the traditions of the gagaku musicians, three more analyses representing the two viewpoints will be reviewed.

An anthology of flute music compiled in 966 A.D. has been examined by Marett.\(^57\) This score bears the title

\(^{57}\)Allan Marett, "'Banshiki Sangun' and 'Shōenraku': Metrical Structure and Notation of Two Tang-music Melodies for Flute," *Music and Tradition*, pp. 41-68.
Hakuga Fue-fu and was compiled from earlier scores by Minamoto no Hiromasa. The score exists in relatively modern copies only, all of which have copyists' errors. Of the sources drawn on by Hakuga (the more common name of the compiler) for his anthology, the most interesting for the present study is a collection of miscellaneous pieces once in the possession of the Emperor Saga, who reigned 810-823. Hakuga, himself a grandson of the Emperor Daigo, was interested in the Saga collection because he thought some of the music and teaching instruction in it had been brought to Japan by Funabe no Kashiramaro as a result of his studies in China. Apparently, Hakuga was interested in the authenticity of the T'ang music in his anthology, as he copied the melodies in their original notation systems.

There are about thirty-five musical compositions in the Hakuga Fue-fu which are still performed or at least recognized at court; some are short and some are suites. Of these, Marett selected two for his study. Marett's

59 Ibid., p. 193.
60 Marett, "Two Tang-music Melodies," p. 42.
63 For an annotated list see Harich-Schneider, A History of Japanese Music, pp. 195-213.
analytical technique observes the placement of signs in the notation indicating a drum beat. These beats were realized by a large drum called the taiko. Although the sign cuing the beats (an abbreviated form of the character haku, a beat, consisting of the alternate form of the right radical of haku, the character hyaku, one hundred) is not found systematically in the surviving manuscripts, Marett was able to find enough consistency in the cues to transcribe the meter as well as the melody. Figure 12\textsuperscript{64} shows his transcription of "Shōenraku."

Fig. 12—"Shōenraku," a flute melody in the \textit{Hakuga Fue-fu}, as transcribed by Marett.

Marett has realized "Shōenraku" in the \textit{ōshiki} mode, a \textit{ritsu} mode on A. As the transcription in Figure 12 shows, the melody has a tendency to emphasize E, A, C, and E, which

\textsuperscript{64}Marett, "Two Tang-music Melodies," p. 44.
is the arrangement of the structural tones of the acoustic melodic formula. Also, the note A acts as the beginning and end of most of the phrases; the typical alternate notes for beginnings and cadences of phrases are E and C. Thus, characteristics of tonal hierarchy and structural formulas may be seen in "Shōenraku." However, there is also the metric equality of the notes, as evidenced in the prevailing appearance of quarter notes in Marett's transcription, and the occasional freer succession of tones, such as the $F^\#-G-C$ passage in measures 3 to 4, and the leap of G to E in measure 5: these two tendencies are in the nature of Chinese art music and thus show the influence of scale theory in a basically folk-like (acoustical) melody.

Marett's objective, however, is to demonstrate that the signs in the notation cuing beats were placed to indicate the beginnings of measures. This interpretation is a divergence from the official gagaku theory in Tokyo, where each pitch sign is held to have the duration of one four-beat measure, and the cue signs for drum beats are occasional appendages. Consequently, if the result of Marett's method is authentic, then a gradual slowing down of the tempo of gagaku music would have been necessary in order that ". . . the decorative figurations . . . may be notated more precisely and with greater clarity within the compass of a measure than within the compass of a beat."^65

^65 Ibid., p. 54.
Marett's analysis and statement not only demonstrate that simple tunes are slowed down over the years, but also suggests why: the melodies were weighed down with ornaments.

In a concurrent study by Rembrandt Wolpert, another student of Picken, a comparison of simple and ornamental forms of gagaku lute parts may be seen; the comparison of the melodies is partly reproduced in Figure 13. In Figure 13, the lowest of the four systems contains a form of this lute part as found in a scroll dated 1566 and referred to as the Biwa-fu ('Lute Score'). The upper three staves show the melody as found in the Sango-yōroku, a collection of biwa parts first compiled in 1218 from oral tradition, and known today in a chain of copies dating down to the nineteenth century; hence the three versions of the melody from the Sango-yōroku shown in Figure 13. The degree of success in Wolpert's comparison is clear enough: the simple Biwa-fu version is the basis of the more elaborate versions in the Sango-yōroku. For the purposes of the present study, it may also be added that the Biwa-fu version follows the acoustic melodic formula on B-E-G-B rather strictly in measures 1 and 2, and gives more emphasis to auxiliary tones (D, F# and A) in measure 3. Here again, a process

66 Rembrandt Wolpert, "Tang-music (Tōgaku) Manuscripts for Lute and their Inte...pp. 69-121.
67 Ibid., p. 73.
Fig. 13—Four versions of a gagaku lute part, as compared by Wolpert.

of change in a melody may be reconstructed. The process would begin with a folk-like tune with melodic phrases following the structure of the acoustic melodic formula. As the melody is used by trained musicians thinking in terms of scales, tones that were auxiliary tones in the acoustic form of the melody become scale degrees in the light of a
superimposed mode: in this case, D, F# and A are used more. These tones are then considered to be increasingly capable of receiving ornamental figures, the tempo is slowed to give time for the execution of the ornaments, and complex, slow-paced melodies such as those of the Sango-yōroku result.

The foregoing explanation of the analytical method of the Picken group at Cambridge may next be compared to an analysis by Garfias of a melody of the Hakuga Fue-fu. In particular, Garfias gives more specific suggestions about the introduction of ornaments into gagaku melody. Noting, from the bias of the gagaku musicians, that "some of the oldest collections of the fue [flute] notation give only the most rudimentary of melodic outlines," Garfias, almost conversely, relates that the older, simpler melodies were embellished with a notated ornament. The ornament was "... indicated in older manuscripts by two fingerings followed by the symbol yuru, meaning 'to wave' or 'undulate.'" This notation created the possibility "... that at these places, the fue players gradually began adding florid ornamental passages."

68 Garfias, Music of a Thousand Autumns, p. 117.

69 Other writers give the reading as yuri: see Harich-Schneider, A History of Japanese Music, pp. 212 and 334.

70 Garfias, Music of a Thousand Autumns, p. 117.

71 Ibid., p. 118.
To illustrate his suggestion, Garfias provides the comparative analysis shown in Figure 14. He compares two versions of a flute melody in Hakuga's manuscript with the version of the melody (the Meiji standard version) performed by gagaku musicians today. His assessment is "... that the contemporary method of realization is but one of many possibilities derived from the earlier tradition without alteration of the essential contours of the compositions."\(^{73}\)

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**Meiji Standard Version**

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\textbf{Hakuga Manuscript}
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**Hakuga Manuscript Alternate Version**

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\textbf{Fig. 14}--Comparison of a flute melody in its tenth-century (Hakuga manuscript) and nineteenth-century (Meiji) versions.
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**Four observations.**--Using the three melodic analyses in Figures 12, 13, and 14 for comparison of the concepts of the Picken group, the tradition of the gagaku musicians, and the model of the acoustic melodic formula, we may now return to

\(^{72}\)Ibid., p. 118. \(^{73}\)Ibid., p. 118.
the four points of inquiry presented at the beginning of this discussion of the nature of melody in Japanese gagaku.

1. Concerning the nature of the (probably) central Asian melodies in Tōgaku, it may be observed that all of the melodies in Figures 12, 13, and 14 represent the acoustic melodic formula when reduced to their earliest known form. Presumably, then, Tōgaku originally consisted of folk tunes or melodies composed in the folk style (formulaic motion over the tetrachord or the complete acoustic melodic formula), or both.

2. The influence of the six gagaku modes (chōshi) is especially noticeable in the flute melody of Hakuga in Figure 14. The tenth-century versions are a clear spelling out of the acoustic melodic formula on A-D-F♯-A with B as the auxiliary tone within the lower fourth. However, the modern, Meiji version is listed as being in the ritsu mode on B, banshikichō. Although the history of the change in Tōgaku melodies is not fully documented today, one process of change can be discerned in Hakuga's tune. The cadence of the Meiji version seems to be constructed in a way that deliberately adds a new emphasis to the note B and simultaneously transposes the note A, and shortens it. The result is that the note B, an auxiliary tone in the acoustic melodic formula, becomes the tonic of the mode on B, and the note A is no longer the acoustical foundation of the melodic structure. Apparently, then, ornaments have also been used
to place or remove emphasis in the notes of a melody, as will be explained next.

3. The nature of melodic ornaments in Tōgaku must be understood in terms of the melodies that they adorn. It seems doubtful that the Hakuga flute melodies of 966 are "abstractions" of "essential contours" in the sense that Garfias and the gagaku musicians have in mind when describing earlier, simpler melodies. Rather, as the Picken group proposes, the older versions of the melodies are complete melodies governed by a tonal organization, a tonal organization described here as the acoustic melodic formula.

It may be mentioned that Harich-Schneider has also seen that ornaments were added to existing melodies in gagaku. In comparing the kagura manuscripts Kagura-bue-fu (early 1390s) and Mikagura Ryaku-shidai (undated but medieval), for example, with the modern versions of the melodies therein, she found that the modern tunes had been "stretched" to allow for the insertion of ornaments.

That the ornaments in the Meiji version of the Hakuga flute melody are alien to the tonal design of the original tune is inconsistent application of the ornaments. As shown in Figure 14, the configuration in measure 1 (Meiji version) is quite different from that in measure 2 and 3, and the added and transposed notes in the last two measures are yet

again different. Such diversity in ornamentation is also seen in Etenraku, Figure 11. It is difficult to accept that such diversity could have issued from one composer at one sitting. Rather, the ornaments are probably the work of several musicians over a period of time. And apparently, each successive musician had a progressively fainter view of the original, acoustic form of the melody.

It is also feasible that some ornaments added to the hichiriki and ryūteki parts were done in order to create an environment representative of the mode to which that melody was assigned. Suggestions of this possible procedure are found in the hichiriki part of Etenraku shown in Figure 11, where the tonic of the mode, E, has far more ornaments than the notes B, F♯, or A. Similarly, for the melody from the Hakuga Fuc-fu shown in Figure 14, the tenth-century versions open with the notes F♯, A, and D, but the ornaments in the Meiji version emphasize B, D, and F♯, the principal degrees of the banshikicho to which it is now assigned. There are, then, two characteristics of ornamentation in Tōgaku melody which must be reckoned with in any melodic analysis: the unsystematic way in which diverse types of ornaments were interpolated, and the use of ornaments to change the tonal organization of a melody into an organization that represents one of the six systematic modes of gagaku theory.

4. Despite the thorough infusion of the six modes into gagaku melody, examples of formulaic melodic motion can be
found in the modern forms of gagaku melody. This is not the same line of inquiry pursued in the study of the Hakuga flute tune above. The question here is not the recovery of ancient formulaic melody and tetrachords, but the observation of formulaic melodic motion in the modern forms of the melodies, which consist of heterogeneous ornaments and are based on the six modes. The research of Cho into the gagaku vocal parts is relevant in this regard and has already been reviewed above. Masumoto has carried this line of inquiry into the instrumental parts of gagaku music. In her book on gagaku, which bears the subtitle "A New Approach to a Traditional Music," an entire chapter is given over to a discussion of aspects of melodic motion in the six gagaku modes.

Masumoto begins her discussion with the observation that the gagaku musicians do have a concept of patterns of melodic motion unique to one or several of the six chōshi (modes). These patterns are referred to as meguri ("ambitus") and te (literally, "hand," but used to refer to the character of a melody) by the musicians. Although these melodic patterns are identified with their home modes, many can be found in the course of melodies theoretically in

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75 Masumoto Kikuko, Gagaku: Dento Ongaku e no Atarashii Apuro-chi, pp. 131-156. I am grateful to Gene Cho for sharing his unpublished translation of this with me.

76 Ibid., p. 134. 77 Ibid., p. 131.
other modes. Thus if a phrase pattern identified with one mode should appear in the course (meguri) of a melody in another mode, the gagaku musicians would think that the melody had taken on the characteristics (te) of the foreign mode. Masumoto goes so far as to compare this phenomenon with Western modulation and to mention that the musicians refer to it as watashi mono (that which crosses over).\(^78\)

To illustrate watashi mono, Masumoto refers to the hichiriki part from Etenraku shown here in Figure 11. Etenraku is theoretically in hyōjō (ritsu mode on E). However, in measures 9 to 11 and 14, the melody resembles banshiki mode (on B), and from measure 17 to 24, the melody resembles the ōshiki mode (on A).\(^79\)

This analysis by Masumoto of the hichiriki part from Etenraku indicates that melodic formulas or patterns are at work in instrumental melodies in gagaku, and that these formulas are cohesive enough to maintain their identity even when transferred from one mode to another. Indeed, the migrations of some watashi mono are so agile that one might wonder if they ought to be considered foreign melodic material at all: assuming that the hichiriki part of Etenraku is a series of embellished fourths, the process of assigning one instance of the tetrachord to one mode and another instance to some other might almost seem contrived.

\(^78\)Ibid., p. 133. \(^79\)Ibid., pp. 134-135.
except that the modal characteristics of each tetrachordal phrase—the cadence, the tessitura in relation to the tonic, and the auxiliary tones—are the elements that the gagaku musicians look at when determining the te of a melodic phrase. These individual characteristics are, of course, the elements of melody that have been added to the simpler T'ang melodies over the centuries and which, with the help of the six chōshi, have become describable, then definable, and ultimately, required. It is this realm of observing melody—the artistic realm of artifice and theory—that separates modern gagaku from its tenth-century acoustical forebears. All this should be seen as the normal style development of a great and monumental musical heritage. Yet in the three stages of development of the art of gagaku, the tetrachord has made its presence, however much disguised.

The preceding discussion of gagaku has centered on the Tōgaku repertory, as it is the branch of gagaku that is best documented and in which the changing nature of melody is portrayed. Other branches of gagaku, such as Komagaku, are also based on Chinese-style modes, or else, as in kagura, saibara, or the little-known fuzoku, the music has folk-like elements of formulaic melodic motion and structural tetrachords.  

Korea

In Korea as in Japan, the Chinese theory of music was introduced through diplomatic channels. This meant that the most immediate and thorough use of the imported music was at the royal courts and the ceremonies of the aristocracy. However, like the Japanese, the Korean musicians applied the Chinese theory according to their own interpretations, and applied extensive ornaments to the original melodies.

The Acoustic Melodic Formula

A few examples of Korean folk melody will illustrate the acoustic melodic formula in that country. The melody in Figure 15 is a purely pentatonic example of the acoustic melodic formula on C-F-A-C.

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Concerning the rice farmer's song in Figure 16 on E-A-C-E, it may be noted that the appoggiaturas are stressed more than the main notes; thus the appoggiaturas on C are more prominent than the embellished B below them.

Fig. 16—"Song of Pounding," a Korean rice farmer's song

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In Figure 17, there is presented a shaman chant outlining the acoustic melodic formula on G-C-E.

![MIDI notation of a shaman chant]

Fig. 17--"Ch’angbu Kori T’aryong," a Korean shamanist song.

Korean Art Music

It is necessary to know the history of Korea to understand the introduction of Chinese court music there. A brief historical survey citing the most relevant events is given next.

History.--The three earliest periods of Korean history are the Period of the Three Kingdoms (to 668 A.D.), the Unified Silla Period (669-936), and the Koryo Period (936-1392). The first substantial repertory of art music to come to Korea from China was court music of the T’ang dynasty, introduced in the ninth century. However, when the Sung dynasty was founded in China, a new court music was begun.

and this repertory, known as aak, was adopted in Korea in the twelfth century (Koryo Period). Furthermore, Buddhist ritual music, which had been ignored by the royalty in the Silla Period, now was officially sanctioned. The dichotomy of two official repertories, aak and Buddhist, was heightened when aak became the chosen style of Confucianism in the early Yi dynasty (1392-1593). The Confucian teaching that music should be edifying rather than entertaining led to a new intellectual approach to music, with a concomitant emphasis on systematic theory. In the fifteenth century, the Confucian influence caused the abolition or modification of many older court songs (poetry), and inspired the writing of new poems of Confucian thinking, sung to modified versions of existing melodies.

The first Korean treatise on music theory was written in 1493, and it was a product of the intellectualism in the court music of the period. Since that point in time, music in Korea has been of two basic types: the slow, sustained style of the court, which illustrates Korean ideas of Confucian music aesthetics, and those indigenous types of music in Korea which are fast, emotional, and exhibit a mixture of the melody patterns prescribed by theory and formulaic melody based on the tetrachord. Examples of these indigenous forms include much of the Buddhist chant repertory.

86 Lee, Essays, pp. 9 and 194.
folk songs, and p'ansori, a long, dramatic ballad form popular with the lower classes since the eighteenth century.\(^8^7\)

Melody elaboration.--To illustrate the change which took place in Korean melody during the Middle Ages, we may refer to an analysis by Jonathan Condit of an art song. Condit is a member of the group of researchers working under the guidance of Picken, and is applying to Korean music the same examinations Marett and Wolpert have applied to Tōgaku music in Japan.

There are three genres of art song in practice in Korea today: kagok, sijo, and kasa. All three styles have been in practice in Korea for several centuries or more. The opening passage from "Spring Sleep," one of the twelve songs in the kasa repertory, is shown in Figure 18.\(^8^8\) Working on an assumption shared by Lee Hye-ku,\(^8^9\) that the melody was simpler and without ornaments in earlier centuries, Condit removed all the ornaments in "Spring Sleep" to produce the reduced version given here in Figure 19.\(^9^0\) Condit suggests that this reduced version must be close to the original form

\(^8^7\)This historical summary is a condensation of Lee Byong Won, "Korea," The New Grove Dictionary of Music and Musicians, Vol. 10, pp. 201-207; and Lee, Essays, pp. 2-12.

\(^8^8\)Condit, "Uncovering Earlier Melodic Forms," p. 4.

\(^8^9\)Lee, Essays, p. 73.

\(^9^0\)Condit, "Uncovering Earlier Melodic Forms," p. 5.
Fig. 18--Opening passage of "Spring Sleep," one of the twelve songs in the Korean kasa repertory.

Fig. 19--A reduced, and presumably earlier, version of "Spring Sleep," as given by Condit.

of the melody because it is a convincing melody in character with Korean folk song today. The value of Condit's analysis lies in his demonstration that, even though no pre-twentieth-century kasa notation for vocal parts exists except for some vague neumatic scores, we are able to get at the character of the early form of the song since the force of cohesion of the original tune is maintained through many centuries of style change and accretion of ornaments. This continuity is all the more remarkable for the fact that the twelve songs of the kasa repertory are hybrids of art music, folk song of two regions of Korea, and Buddhist chant. Condit made reduced versions of eleven kasa songs, and was

91 Ibid., p. 6.  
92 Ibid., p. 7.  
93 Lee, "Korea," p. 204.
able to find folk song elements that he could identify by region in all of them.

In another study, Condit made a two-stage reduction of a Korean art song to find a possibly original form. The song, identified by Condit as "Walking in the Void," is one of two songs of the Sung dynasty still performed today.

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Fig. 20--Three versions of the opening passage of "Walking in the Void," a Korean art song.

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95Ibid., p. 1.
In a comparative score partly reproduced here in Figure 20, three versions of the tune are shown. The version marked LBGM is from a collection of music dated 1759 and identified by the English rendering of its title, Latter Book of Great Music. The version marked ZTB is from the Zither Tablature Book of 1572. Both show versions of "Walking in the Void" which Condit suggests are ornamented versions of an earlier form of the melody. The earlier form, marked in Figure 20 as "15th century," is derived by isolating the principal note in each measure of the ZTB and LBGM versions. But Condit does not stop there; he next considers the fifteenth-century version to be an ornamented version of a still earlier version, presumably the original form of about the eleventh century. This comparative reduction is shown here in Figure 21, where the (presumably) original form of the melody may be seen as outlining the acoustic melodic formula on C-F-A-C.

The conclusion to be drawn from Condit's analyses is the indication that the essential nature of Sung court music and native Korean music (as represented by the acoustic melodic formula) has an enduring quality that enables it to be recovered even after having been mixed with the intellectual patterns of scales and ornaments.

96 Ibid., p. 2. 97 Ibid., p. 2. 98 Ibid., pp. 8-9.
99 Ibid., p. 32. 100 Ibid., p. 9.
Consequently, in a large portion of Korean melody, melodic patterns not found in the acoustic melodic formula may be removed, leaving an underlying structure of acoustic origin.

Fig. 21--Probable versions of "Walking in the Void" from the fifteenth, and circa eleventh centuries, as given by Condit.
Chinese modes in Korea.—Of the anhemitonic pentatonic modes of China, two have been in use in Korea since the fifteenth century. One is the mode kyemyonjo, represented by the solmization re-fa-sol-la-do, and notated as $B^b$-$D^b$-$E^b$-$F^b$. The other mode is p’yongjo, represented in solmization as do-re-fa-sol-la. In notated art music, the "do" of p’yongjo mode is always on $b^b$. However, the mode may also be notated on $E^b$, in which case it is renamed ujo.

An analysis by Lee Hye-ku attempts to identify the modal characteristics of a kagok song by using a reductional analysis similar in method to those of Condit just reviewed. Our purpose here is to see if Lee’s analytical result exhibits any elements of the acoustic melodic formula, and how any acoustic form of the melody might compare to the mode to which the full modern melody is assigned.

The excerpt in Figure 22 shows the first eleven (of a total of seventy-two) measures of the vocal part of "Ch’osudaeyop," one of the twenty-seven songs in the modern kagok repertory, and the reduction of it by Lee Hye-ku, who attempts to demonstrate that the melody is in ujo mode, that the tonic is $E^b$, and that the original melody has been


102 Lee, Essays, p. 79.
It is not our purpose here to question the conclusions of Lee, the foremost Korean musicologist, but to ask what the melody might have been before it was assigned to the ujo mode by the court musicians. In looking at Figure 22, it is possible to recognize a tone organization of C-F-A\textsuperscript{b} (lower fourth and middle third of the acoustic melodic formula). By this scheme, the cadential tones in measures 4 and 11 would be more logical if analyzed enlarged with ornaments.\textsuperscript{103}
as C and F respectively, and the fact that the phrases ending in measures 4 and 11 end on C and F, instead of B₇ and E♭, is in line with Lee's own definition of a cadence tone: "... native Korean music places greater modal significance on the closing pitch." Assuming that this melody, in its original state, was a shape of C-F-A♭ with E♭ as an auxiliary tone in the lower fourth, why was it analyzed as being ujo mode on E♭? Perhaps the answer lies in the fact that the tune has an interval of a minor sixth (C to A♭) from its lowest tone upward, and this interval is not found in either of the Korean modes. Neither p'yongjo nor ujo has a major sixth (neither B♭ to C nor E♭ to C) and kyemyonjo does not have a sixth from the lowest tone at all. It may be surmised, then, that the court musicians who, at some time in the past, attempted to classify this melody according to the three pentatonic modes, resolved the problem of the minor sixth by reinterpreting the constituent tones of the melody: the E♭, an auxiliary tone in the lower fourth of the acoustic melodic formula, is reinterpreted as the tonic of the mode; the B♭, which is a lower auxiliary to C in measures 3 and 4, is reinterpreted as the principal note of that passage even though C begins and ends that melisma; and the higher B♭ in measure 7, an auxiliary tone in the scheme of the acoustic melodic formula on C-F-A♭-C,

104 Ibid., p. 102.
is reinterpreted as one of the pentatonic tones of ujo, and is given a melisma which, to judge by its rhythm and intervals (F to B\textsuperscript{b} and A\textsuperscript{b} to E\textsuperscript{b}) must be a product of a refined mensuralist theory.

By looking at "Ch’osudaeyop" for the tonal organization of the ujo mode and the acoustic melodic formula, it may be seen how an acoustic melody in Korea, familiar at court perhaps as early as the fifteenth century, had its constituent tones reinterpreted in order to analyze them in a way that seemed compatible with one of the theoretical modes in use at the Korean court. Further, it may be seen that once this reinterpretation of the tonal hierarchy was done, ornamental tones were added to the melody. Of these two steps, the reinterpretation of the melody does not materially affect the sound of the melody in performance. But the second step, the adding of new tones (embellishments) in artistic styles to tones which, acoustically, are not structural tones (for example, measure 7 of "Ch’osudaeyop"), does result in a material change in the sound of the melody. As some of the analyses in the following chapters will suggest, these two types of change in melody have occurred numerous times in Europe and Asia.
CHAPTER III

SURVEY OF MELODY IN CENTRAL ASIA

This survey of melody in central Asia will discuss music ranging from Mongolia in the East to Turkey in the West, the region generally known as central Asia. In the first part of the survey, three examples of folk melodies will be analyzed. That discussion of folk melody will be followed by a study of Persian art music, with some brief comments about parallel practices in Arabia and Turkey. As in the preceding survey of melody in Japan and Korea, this survey of melody in central Asia will center on the tetra-chord as that part of the acoustic melodic formula which can be most frequently traced in the realm of art music and systematic theory. In addition, the matter of intonation will be addressed here.

Folk Music

The two topics of folk music introduced in the preceding chapters—the analytical model of the acoustic melodic formula and the accretion of ornaments in melody—should now be understood by the reader well enough that they may be discussed together. Therefore, this discussion of central

Asian folk music will look at sample melodies for both items simultaneously.

In the preceding chapter, mention was made that folk melodies from throughout central Asia were introduced to the court of the Chinese T'ang dynasty. It is not possible to say, even in the light of the melody reductions using the methods developed by Picken, what the central Asian melodies of the eighth century were, since we do not know how the original tunes were used at the T'ang court before being sent on to Japan and Korea. However, the analyses to follow will demonstrate that the prevailing characteristics of the presumably medieval tunes in the preceding chapter (those recovered by removing ornaments) and of indigenous Japanese and Korean folk song—the structural tetrachord, the tetrachord in transposition, and ornamentation—are basic to folk music found in Asia today.

Historical Evidence

There is some slight evidence yet extant of the perfect fourth as an important interval in ancient Chinese music. For example, early treatises refer to a scale which may be represented as C-D-F-G-A, which compares to the lower fourth and middle third of the acoustic melodic formula. Also, there is an ocarina excavated from a tomb of the Shang

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2Bell N. Yung, "China, IV. Theory, 3. Scales," p. 261. See also the reference to this fact at footnote 4 of Chapter II.
dynasty (traditionally dated eighteenth to twelfth centuries B.C.). This earthen whistle was still playable at the time of its recovery, but could produce only four of its original five tones. Of these, the only tone with a clear sound was the one a perfect fourth above the open pitch.  

Folk Song Today

Of folk songs collected in the twentieth century in central Asia, a type found in many places with relevance for the present study is the "long song," a generally descending tune with extensive vocalization on each main note. An example of such is shown in Figure 23, a "long song" or "long chant" of Mongolia. In the passage shown here, representing approximately the middle half of the entire field sample, the tonal structure is clear enough: initially it is E-A-C, then it wavers between tetrachords of B to E and A to D. The ornaments are created by repeating notes, alternating notes separated by intervals of the second and the third, and by glissandos. Another characteristic of this melody, a characteristic of wider importance to be referred to again below, is the unstable orientation of the intonation. In particular, the latter part of the passage, in

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Fig. 23—Eastern Mongolian "long song" celebrating the winner of an archery contest.

which the structural tetrachord vacillates between B to E and A to D, illustrates this characteristic. According to Vargyas, the transcriber of this example, "This style of singing is ... general in Eastern Mongolia, which is the region richest in archaic traditions, but it can be found elsewhere as well."^5

The melody in Figure 24^6 is a transcription of a performance of "Ugulbeg," one of the most common folk songs

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^5Ibid., p. 71.

Fig. 24—"Ugulbeg," a Turkmen folk song among the Turkmen people of Afghanistan. The tonal levels of the structural tetrachord are more consistent than in the Mongolian "long song," no doubt because a string instrument, the dutar, accompanies the singer and plays "... instrumental sections [that] are considered by performers to be essential components of a song."

7 Ibid., p. 194.  
8 Ibid., p. 197.
In the passage of "Ugulbeg" in Figure 24, a structural tetrachord of E to A is initially seen. A *dutâr* interlude of B-D-E is followed by a vocal phrase of A-B-D with another *dutâr* strum on E and A. The remainder of the quoted passage is aligned with the acoustic melodic formula on E-A-C#-E. By way of interpretation, it may be said that the first structural tetrachord of the example, E to A, is next transposed up to the position A to D; the fact that the *dutâr* dyads move the same way (B-E to E-A) underscores that this is a transposition and not an extension of the melodic formula. The ornamentation is unsystematic: after the repeat signs at the beginning of the example, there is a florid descending phrase on the tetrachord of A down to E, then the note A is repeated in plain fashion for some time. The final descending phrase is again ornamented, in a free manner apparently the result of the performer's whim.

The melody in Figure 25⁹ is a liturgical speech-melody used by Jews in the Kurdish region of eastern Turkey and northwestern Iran. These Kurdistan Jews still use the Aramaic language in their liturgy, and the present melody is used for reciting the Biblical story of David and Goliath.¹⁰

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Fig. 25—Liturical speech-melody of the Kurdistan Jews
The acoustic melodic formula appears in Figure 25 first as G-C-E, then C-F-A, in descending motion. At the beginning of the example, the note C is decorated by an extended flourish which terminates on G. The remainder of the quoted melody similarly embellishes the tones A, then F, then C. The ornaments sometimes dwell on one tone (for example, the opening C) and at other points descend between the two tones of a structural perfect fourth (for example, C to G in the first part of the melody and F to C in the last phrase).

A collective view of the melodies in Figures 23, 24 and 25 may now be stated in order to summarize their common traits, which may be taken to represent the basic characteristics of folk melody in central Asia. One general trait is formulaic melody based on observable structural intervals. These intervals are those of the acoustic melodic formula. Of the constituent intervals of the acoustic melodic formula, the lower fourth is the most frequently encountered in central Asian melody. These structural intervals shift, sometimes carelessly, to other positions within a performance of a melody, or even a particular phrase. Ornaments are an essential part of central Asian melody, and they appear in diverse manners of application: some decorate a single structural tone while others floridly fill in an interval, typically in descending motion. These traits were also seen in the study of Japanese melody in Chapter II.
Persian Art Music

In the survey of melody in Japan and Korea in the preceding chapter, considerable attention is given to the intermingling of folk-style melodies and the modal scales of systematic theory. The prevailing thesis in that survey is that, while the enforcement of a modal definition results in the reinterpretation and even outright alteration of the tones in an established melody, none the less, the elements of folk melody—structural formulas and their ornamentation—continue to be found even in refined art music. This scenario is of use also in understanding the art music of Persia.

Of the various artistic styles of music in central Asia, that of Persia is chosen for examination here for several reasons. For one, it is regarded as the protosystem for the various traditions of maqām (to be defined below). According to Gerson-Kiwi, "... the Persian variety [of maqām] has obviously preserved an older stratum, discernable in spite of more recent layers. ... it looks like a prototype behind the more sophisticated Arab Maqam."

Another reason for the present choice of Persian art music rests on the geographical situation of Persia, a crossroads setting for the cultures of central Asia and

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and India to the East, and the Arabic and Judeo-Christian cultures to the West. Also, studies of medieval Persian treatises concerned with melody are available.

The Radif System

An overview of Persian art music may begin with the radif ("row" or "series"). The radif is a list of twelve modal scales by which hundreds of melodic formulas are classified. The Persian word for this type of scale is dastgāh (plural: dastgāh-hā). Of the twelve dastgāh-hā, the second, third, fourth, and fifth are said to be derivatives of the first; these are shown in Figure 26.12

a, Shūr

b, Abu atā

c, Dashtī

d, Bayāt-e tork

e, Afshārī

Fig. 26--The dastgāh shūr and its four derivative modes

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Figure 27\textsuperscript{13} shows the remaining seven dastgāh-hā; of these, bayāt-e esfahān is believed to be a derivative of homayun.

\textbf{Fig. 27--The remaining seven Persian dastgāh-hā}

\begin{itemize}
  \item[a] Segāh
  \begin{center}
    \includegraphics[width=0.3\textwidth]{segah.png}
  \end{center}

  \item[b] Chahārgāh
  \begin{center}
    \includegraphics[width=0.3\textwidth]{chahargah.png}
  \end{center}

  \item[c] Homayun
  \begin{center}
    \includegraphics[width=0.3\textwidth]{homayun.png}
  \end{center}

  \item[d] Bayāt-e esfahān
  \begin{center}
    \includegraphics[width=0.3\textwidth]{bayateesfahan.png}
  \end{center}

  \item[e] Navā
  \begin{center}
    \includegraphics[width=0.3\textwidth]{nava.png}
  \end{center}

  \item[f] Mākur
  \begin{center}
    \includegraphics[width=0.3\textwidth]{makur.png}
  \end{center}

  \item[g] Rāst
  \begin{center}
    \includegraphics[width=0.3\textwidth]{rast.png}
  \end{center}
\end{itemize}

\textsuperscript{13}Ibid., Ex. 1f-1. On page 295, Farhat explains that the koron (\textsuperscript{\textsuperscript{\textdegree}}) is the accidental for a half-flat, and the sori (\textsuperscript{\textdegree}) is the accidental for a half-sharp.
Farhat's rendering of the modes in European staff notation is reproduced in Figures 26 and 27 because it clearly shows the tonal hierarchy of each dastgāh. The brackets over the notes in the examples indicate the essential structural tones of each modal scale. In the seven basic dastgāh-hā (excluding the five derivative modes), the tetrachord is an identifiable unit of the mode: in shūr, for example, the tetrachord is D to G. In chahārgāh and navā (and the derivative mode bayāt-e esfahān), the bracket indicates the interval of a sixth with the finalis on the fourth degree from the lowest tone: this scheme is, of course, the arrangement of the structural tones of the acoustic melodic formula.

Since the twelve dastgāh-hā are melodic formulas, it remains to illustrate how the tonal hierarchy of a mode guides the improvisation of melody. The mode is primarily a schedule of generic ideas for the performed melody. In Persian thinking, there are no fixed compositions in the European sense; the two melodic examples to be given next are transcriptions of specific, though only typical, performances. The example in Figure 28 shows how the tetrachord D to G might be used in beginning a performance in

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14 Idem, "The Dastgah Concept in Persian Music," unpublished doctoral dissertation, School of Music, University of California, Los Angeles, California, 1965, p. 280. Transcriptions of performances representing the entire radif are given in this work.
shūr. In Figure 29\textsuperscript{15} is shown the opening passage of chahārgāh in two performances by different musicians. The transcriptions are shown in interlinear placement in order to illustrate the common structural tones as well as the unique individual embellishments.

As can be seen in Figure 29, the tonal hierarchy of chahārgāh indicates an order of appearance of the main notes. In both transcriptions in Figure 29, the lowest main note, G, is heard first, while the highest, E, appears later. Further, the note G is embellished with the note A koron. The prescription of when the notes appear as well as how they are treated is what is suggested by the terms modal scheme or melodic pattern. In the Persian language, the word mayē refers to the melodic aspect of these prescriptions, and the word maqām refers to the mode (in the sense of scale).

The discussion thus far has dealt only with the opening section of a performance of a dastgāh. Such an introductory section is called a darāmad, and there may be more than one darāmad in a performance. If there are, each will be a different improvisation on the same mayē, their differences and similarities being comparable to the comparison in Figure 29. After the darāmad, a performance will proceed to four or five gusheh-ha. Each gusheh has its own name, its own maqām and mayē, and is otherwise an improvisational model working as the darāmad model does. In modern times, some of the gusheh-ha have been assigned to various

\[16\] Farhat, "The Dastgah Concept," p. 31.


\[18\] Ibid., p. 295.
dastgāh-hā as a means of classification. Some of the
dastgāh-hā have as few as four gusheh-hā, while rāst has the
largest collection, sixteen. Further, in popular practice,
several hundred more gusheh-hā are used in performance, and
any particular gusheh might be associated with one dastgāh
by one performer and another, another.

An analysis by Gerson-Kiwi of a performance in shūr
considers eight gusheh-hā. As shown in Figure 30,19 each
gusheh is a structural tetrachord and is in a different
transposition: in this instance, an archform is created.

![Figure 30](image)

Fig. 30--The gusheh-hā in a shūr performance

Intonation.--In the summary of central Asian folk
melody above (p. 85), it was noted that the structural
intervals shift their pitch levels frequently. The auxil-
iary tones which fill in the structural intervals are even
less stable (fixed) in their intonation. As the migrant
tetrachord is found in both central Asian folk melody and
the artistic gusheh, so the inexactitude of intonation is
also part of Persian art music. But there is a discernible

19Gerson-Kiwi, The Persian Doctrine of Dastga-
Composition, p. 21.
context in which this freedom of intonation is carried on. In practical Persian art music, careful intonation is not found. In vocal music, "... Persian singers ... do not rely on any concept of a fixed pitch, and are used to much more flexible and variable scales than the Western tempered scale."²⁰ In instrumental music, "most Persian instruments have moveable frets; each musician usually adjusts a few of the frets up or down a little to arrange the instrument to his liking."²¹ But again, this freedom of intonation has a context by which it is governed. The intonation of a particular pitch may be flexible, but it is not (in practice) changed so much as to result in a change of scale degree. For example, a common string instrument in Iran is the ūtar, which has seventeen frets within the octave. This fretting has led to misconceptions on the part of European writers since Fétes that Persian music has melodic intervals of a quarter or even a third of a tone.²² In actual practice, however, the seventeen frets are needed to provide for the many variant intonations of certain scale degrees; but "the modes have seldom contained more than seven tones to the octave."²³ Furthermore, the octave is not a basic unit in

²⁰ Farhat, "The Dastgah Concept," p. 25.
²³ Ibid.
Persian melody since, as the discussion of the gusheh above showed, the individual melodic sections (gusheh) of a dastgāh performance are limited to a structural tetrachord.

To rephrase the above in more succinct words, it may be said that the modal degrees (maqām) of a dastgāh or gusheh are not all fixed in intonation. For most scale degrees, a number of intonations are acceptable, but once a particular intonation of a degree is sounded, the melody must proceed on to another modal degree (and whichever intonation is chosen for it), because "... there is no chromaticism in Persian music. For example, ... D and Bb ... are never used in succession."24

Persian Theorists

The foregoing discussion of Persian art music has used the modern form of the theory of art music as its basis for a study of the intermingling of the traits of folk music (the acoustic melodic formula) and melody of the dastgāh system. To broaden this line of inquiry, the writings of important Persian theorists may be reviewed. These theorists fall into two groups: those of the Middle Ages, and those of the twentieth century.25 The medieval theorists' writings are of the greater benefit for the present study. In their treatises, the tetrachord is a frequent topic of

24 Ibid., p. 28.
25 Ibid., p. 8.
discussion, and the other aspects of acoustic melody (formulaic melody, ornamentation, and flexible intonation) also are given varying amounts of attention and accuracy of understanding.

Among the medieval theorists, works of al-Fārābī, Ibn Sīnā, and Ṣafī al-Dīn will be discussed here. Al-Fārābī is perhaps the best known medieval theorist in both Arabic and Persian music. His writings, dating from the tenth century, represent a musical art in which the Pythagorean systems of limmas and commas had become the basis of fretting on string instruments and of theory. However, the tetrachord is the recurring framework within which the different intonations are gauged.

Figure 31 illustrates how the tetrachord on a string instrument was analyzed by al-Fārābī (872-950), Ibn Sīnā, also known as Avicenna (980-1037), and Ṣafī al-Dīn (died 1257).

As shown in Figure 31, the three principal frets for the three theorists' tuning systems mark the stops for a tetrachord of whole tone, whole tone, and semitone. These pitches have fixed intonation and their frets are named after the fingers that are placed on them: the first fret, sabbāba or index finger; the second whole-tone fret, binsir

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Fig. 31--Division of the tetrachord according to three medieval Persian theorists, as given by Wright.

<table>
<thead>
<tr>
<th>al-Farabî</th>
<th>Ibn Sīnā</th>
<th>Šafī al-Dīn</th>
</tr>
</thead>
<tbody>
<tr>
<td>(muṣlaq)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>mujannab al-sabba bā</td>
<td>98 145 168</td>
<td>90 ra's al-dasāṭin 112 139 146</td>
</tr>
<tr>
<td>sabbāba</td>
<td>204 204</td>
<td>sabba bā 204</td>
</tr>
<tr>
<td>mujannab al-wustā</td>
<td>204 204</td>
<td>wusta al-furs 204</td>
</tr>
<tr>
<td>wustā al-furs</td>
<td>304 344</td>
<td>wustā zulzal 344</td>
</tr>
<tr>
<td>wustā zulzal</td>
<td>354</td>
<td></td>
</tr>
<tr>
<td>binšir</td>
<td>408 408</td>
<td>binšir 384 408</td>
</tr>
<tr>
<td>khinšir</td>
<td>498 498</td>
<td>khinšir 498</td>
</tr>
</tbody>
</table>

or annular finger; and the semitone completing the tetrachord is played by the khinšir or little finger. The middle finger, wusta, plays a scale degree of variable intonation between the first and third fingers. (The Persian forms of these words are sabbābe, bansar, khansar, and vosta respectively.28) In addition, one other pitch, of varying intonation, was located between the open string and the sabbāba fret. This pitch, called mujannab al-sabba bā by al-Farabî and zaed by Persian musicians, was found in intonations ranging from 90 to 168 (Ellis) cents. In the course of the Middle Ages, as the intonations shown in Figure 31 suggest,

28 Farhat, "Iran, I. Art Music," p. 293.
four aspects of the Persian-Arabic analysis of the tetra-
chord became established.

1. The tetrachord remained the basis of measurement of
musical intervals throughout this period.

2. The intonations of the sabbabe, bansar, and khansar
frets remained at 204, 408, and 498 cents respectively.

3. The number of intonations for the zaed and vostā
was reduced in the writings of Šafī al-Dīn.29

4. The fact that systematic Pythagorean theory did not
completely represent actual practice in melody became recog-
nized more often. Especially in Šafī al-Dīn, the rarity of
the Just Intonation major third in actual practice, and the
musicians' preference for the neutral third, were reckoned
with.30

These four aspects of the medieval Persian analysis of
the tetrachord may be compared with the analyses of the
three central Asian folk melodies at the beginning of this
chapter. The tetrachord is the basis of all these examples.
As for the interior of the tetrachord, the theorists were
most concerned with those aspects of melody which were of
little concern to the singers of the folk song examples:

29 Ibid., p. 294.
30 Wright, The Modal System of Persian and Arabic Music,
p. 32. See also Amnon Shiloah, "The Arabic Concept of
Mode," The Journal of the American Musicological Society
XXXIV (Spring, 1981), 31, where the unstable seconds and
thirds are referred to as "mobile degrees."
intonation of pitches within the tetrachord frame. To put the matter another way, the very flexible tonal substance of the acoustic tetrachord was analyzed and defined by the theorists only with great trouble; as many as five variant intonations of some tones (the zaed and vostā) were recognized by the theorists. Similarly, the bansar, fixed by the theorists at 408 cents, was rarely found in that intonation in performed music, the neutral third being in common usage.

It would seem, then, that the application of the Pythagorean measurement of the tetrachord and the formulation of the dastgah system in Persia developed out of an earlier tradition of melody based on the structural perfect fourth with flexible tones within that interval. These tones were gradually standardized into the tetrachord, but never completely. This type of early perfect fourth is the same type as that represented by the acoustic melodic formula, which was used to describe the folk melodies in Figures 23, 24, and 25 above.

Furthermore, in yet another way, Safī al-Dīn indicates the basic role of the tetrachord in Persian music. In creating scales of disjunct and conjunct tetrachords, he might have been expected to address the presence of the interval of the fifth and the presence of pentachords. But in actuality, Safī al-Dīn scarcely regards the pentachord as a distinct class of scale units. For example, many pentachords are described by Safī al-Dīn as extensions of
tetrachords. Only three out of the eighty-four theoretically possible scales described by Șafī al-Dīn contained an indivisible pentachord. But for each of the three, "... the rules laid down by Șafī al-Dīn preclude the possibility of this unit recurring as the lower segment of the scale, for any such scale would omit the fourth." Not until the fourteenth century do any theorists describe scales with pentachords as their lower units. In Wright's suggestion, such scales might have been derived and explained by considering the upper pentachord of an octave scale to be the lower pentachord of a derived scale, and adding a tetrachord above that to complete the octave. In any event, the Persian pentachord is a late development of contrived origin.

After the Middle Ages, there were no important Persian theorists until the twentieth century. During the interim, the performing practice developed in ways which removed it even farther from the bases of the medieval theorists; most Iranian musicians today think that there is no scientific or theoretical basis to their art. Of the important twentieth-century theorists, Barkechli and Vaziri have attempted to analyze Persian art music in terms of European harmony, with results that have not faithfully portrayed the

31 Ibid., p. 80.  32 Ibid., p. 121.  33 Ibid., p. 121.
nature of Persian melody. Only Farhat's research has been founded on musicological principles, which is why his work has been repeatedly referred to here.

CHAPTER IV
SURVEY OF JEWISH, BYZANTINE, AND LATIN CHANT

It is now widely accepted that the melodic traditions of the Byzantine and Roman churches had their beginnings in the synagogue of the first and second centuries A.D. Accordingly, this survey will begin with Jewish chant, and then proceed to the chant of the Byzantine and Roman churches. At each point of inquiry, a review of the standard research on the topic will be given, followed by a comparison of the standard viewpoints with the model of the acoustic melodic formula. As was the case in Chapters II and III above, the presence in both theory and practice of the tetrachord and the accretion of ornaments in melody are especially demonstrated.

Jewish Music

Before beginning a survey and analysis of Jewish melody, it will be well to set the research of Jewish writers into the perspective of general research into the nature of melody. Koizumi's interest in the theories of Lachmann\(^1\) has already been referred to in Chapter II (p. 22), for example.

Another seminal Jewish writer, Curt Sachs is probably the figure whose works are best known to musicology at large. Although the contributions of Lachmann, Sachs, and other Jewish writers are most important and still the basis of much methodology in ethnomusicology in Europe, Asia, and elsewhere, it must be acknowledged also that some advances away from their approaches have taken place. For example, both Lachmann and Sachs, in a way which today seems too superficial, regularly compared sample melodies from diverse sources. It is not unusual for a short melodic phrase from South America to be directly compared to another from Africa or Southeast Asia by either of these writers or their followers, with no discussion of the cultural network that the diverse cultures are related to. There is also an emphasis on primitive tribal music here, as illustrated by Sachs' description of melody in terms of biological evolution: melodies of two tones evolve into those of three, then into four, and then five tones, and as the intervals get larger, they sprout auxiliary tones to be classified as "infixes, suprafixedes, and infrafixedes in all possible arrangements and sizes . . . ." By contrast, the more

4 Ibid., p. 39.
recent studies drawn on by this dissertation demonstrate that large intervals (the fourth and third as arranged in the acoustic melodic formula) are most naturally understood by folk musicians, and small intervals (seconds and microtones) are not given a careful consideration by folk musicians but rather by theorists using mathematics. But despite these points of progress in research, the contributions of Lachmann, Sachs, and other Jewish writers of their generation, such as Idelsohn (to be reviewed below), are enduring, and no study of the nature of melody can begin without their groundwork.

**Melodic Formulas**

A survey of research into melodic formulas in Jewish music may begin with the field work of Idelsohn. Born in Lithuania and trained in Berlin and Leipzig, Idelsohn eventually settled in Jerusalem (1905) and Cincinnati (1924); during the last four years of his life preceding his death in 1938, Idelsohn was incapacitated by ill health.⁵ During his years in Europe and Palestine, Idelsohn created an extensive collection of cylinder recordings of Jewish singing and other songs which he felt were stylistically related to Jewish melody. Over a period of two decades, the sample melodies from this collection were transcribed into a

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comparative anthology titled *Thesaurus of Hebrew-Oriental Melodies*. Idelsohn's basic method in the Thesaurus was to present a group of Jewish melodies (as many as twelve) or a few Jewish melodies and structurally similar melodies from musical traditions adjacent to Jewish traditions, in comparative scores arranged so that the corresponding notes in the various samples would be vertically aligned. The ten volumes of the Thesaurus covered most of the areas of Jewish settlement in Europe and western Asia. Concurrently with the preparation of the Thesaurus, Idelsohn also wrote a history of Jewish music, in which some of the comparative scores of the Thesaurus were included. One such score is reproduced here as Figure 32, where four forms of the mode (in the sense of melody type) for singing the selicha (an intercession for pardon) from four Jewish communities are given. Although Idelsohn was obviously able to see over a note-to-note appearance of the separate melodies and see the underlying common structure, he did not go so far as to make a broad theory of Jewish chant in general. Thus, for example, of the melodies in Figure 32, he says, "... the melody

8 Ibid., p. 79.
9 Ibid., p. 74.
Fig. 32--Idelsohn's comparative table of selicha modes

dwells upon the third . . . , and modulates to the fourth.
In the Eastern Ashkenazic version . . . the third is fre-
quently elevated to a major . . . ."\textsuperscript{10} It is obvious from
this statement that Idelsohn is looking at the selicha modal

\textsuperscript{10}Ibid., p. 77.
organization as a G-B-D triad in both major and minor forms when, in terms of the present research, the melody is more plausibly based on the acoustic melodic formula on G-C-E\textsuperscript{b}. The Persian example is probably an embellishment of the single tone C, rather than B\textsubscript{b}, in the manner of the Jewish and Hungarian melodies in Figure 1h and 1i above. Despite this, Idelsohn's method of comparative scores was an important achievement, becoming the model for the present Figures 1 and 2.

Idelsohn's larger goal in his research was to demonstrate the underlying unity of Jewish song. Toward this end he stressed the similarities of Jewish melodies from different parts of Europe and Asia and minimized the amount of influence that the music of various Jewish communities may have received from surrounding cultures. For example, in assessing the Arabic influence on Jewish music, Idelsohn said that

\begin{quote}
... no claim to originality can be made in the case of the music of the Jewish Oriental folk-song. The tunes, being of Oriental origin, satisfied the musical taste of the Oriental Jew; and only in the selection of the musical material was Jewish taste manifested. As we glance over the vast number of tunes adopted for the Jewish-Oriental folk-song, we notice a preference for melodies based upon the Makams that were related to the modes of the Synagogue, such as Bayati and Nawa...\end{quote}

This somewhat circuitous argument of Idelsohn's has not always been taken up by Jewish musical scholars since him.

\footnote{Ibid., p. 364.}
Rather, there has been a theme in the writings of many Jewish scholars since Idelsohn that portrays Jewish music as a communicant receiver and contributor in various musical cultures. An important example of such a writer is Eric Werner, who, in a large study of Jewish and Christian liturgical interaction, says, "In view of these [historical] facts we really must abandon the long cherished conception of a 'typically Christian' versus a 'typically Jewish' liturgy."\(^{12}\) Werner continues by saying:

... in many cases it was impossible to answer the basic question of 'who borrowed and who lent' in a definitive fashion. The growth of cultures [is]... in a word: constant borrowing and lending. All kinds of influences, or rather confluences were at work in the development of the liturgies and their adjunct arts.

Thus Werner takes up a line of inquiry begun by Idelsohn (the comparison of Jewish and Christian cantillation) and expands it to a broad survey of those liturgies that draws on history and theology as well as musicology. To illustrate Werner's research, we will present next a text comparison by him, to be followed by a melodic comparison.

In a comparative study of the Latin sequence *Dies irae* and the Jewish and Byzantine antecedents of its text,\(^{14}\)


\(^{13}\)Ibid., pp. xvii-xviii.

\(^{14}\)Ibid., pp. 252-255.
Werner provides quotations from three hymns. First, from a Geniza manuscript now in the British Museum and probably dating from the late eighth century, the following extracts from a Jewish hymn were taken:

The angels shudder, fear and trembling seize them.
Thou dost open the books of record; Thou dost call to mind all things long forgotten.
The angels shudder: they say it is the day of judgement, for in justice, not even they are found faultless before Thee.
The great trumpet is sounded.

The modern form of this hymn, called Unethane toqef, is found in the center of the Jewish Prayerbook service for both the New Year and the Day of Atonement. Werner compares its eighth-century version with the Byzantine "Hymn of Romanus upon Christ's Reappearance":

Everything trembles,
The books are opened
The hidden things are made public.
[Follows a description of the coming of the Antichrist.
Then:]
The angels are dragged before the throne.
They cry: 'Glory to Thee most just judge!'
Upon the sound of the trumpet...

Werner next compares these with lines from the Dies irae:

What a tremble will there be
The book will be opened
All hidden things will appear.
The awesome trumpet will sound over all the graves.
There is an obvious common theme as well as a set of syntactical forms running through these three hymns. Standing on this evidence of liturgical sharing between the church and synagogue, and numerous other comparisons like it, Werner next compares Jewish, Byzantine, and Latin chant melodies in interlinear scores modelled after those in Idelsohn's Thesaurus. To give one example, he compares the phrase *Cum sancto spirito* from the Gloria of Mass XIV with chants from Babylonian and Yemenite synagogues: see Figure 33.15

15Ibid., pp. 442-443.
Like those of Idelsohn, Werner's melodic comparisons consider the individual melodies on a note-to-note basis, with only passing attention given to exactly what the common elements of the compared melodies are supposed to be. At this, then, any attempt at separating common melodic structures from the acquired ornaments of individual tunes is not to be expected. Yet just this analytical eye-skill is necessary in order to understand the interlinear comparisons of Idelsohn and Werner. The model of the acoustic melodic formula aids in this regard, allowing the reader to see, for example, that the three tunes in Figure 33 are built on an E-A-C design: the end of the Gregorian example fills in the lower fourth, while the Yemenite example has most of its activity in the middle third of the formula. Moreover, this type of thinking about melody—structure and embellishment—can be found in other Jewish writers, such as Sachs:

All Jewish melodies are in the proper sense of the word composed out of ready-made melodicles. In two of the most archaic liturgies, the Yemenite and the Persian, the various parts of the Scriptures—Pentateuch, Prophets, Psalms, Esther, Lamentations, and so on—have their own melodic patterns . . . which . . . are flexible enough either to expand or shrink according to the varying number of syllables.

Although Sachs did not make further use of the foregoing observation, and his interesting word "melodicles" has not gained currency, none the less it may be seen here that the basic ideas underlying the analytical model of the

16 Sachs, The Rise of Music, pp. 82-83.
acoustic melodic formula were being formulated by a number of Jewish musicologists in the first half of the twentieth century. The principal deficiency in the melodic comparisons of Idelsohn, Sachs, Werner, and others, as illustrated by the above quotations, is the lack of a defined model for the comparative analysis of melody, even though, as just mentioned, the basic ideas of such a model are to be found in their descriptive assessments. It was mentioned in Chapter I (pp. 2-3) that one of the goals of the present paper is to carry forward the thrust of research into the "gray area" of melody. This survey of research in Jewish music may serve to illustrate one aspect of the attempt to achieve that goal, by the suggestion that the comparative analysis of Jewish and Christian chant may be given more precision in its analytical descriptions by a keener separation of melodic structure and melodic embellishment.

Another example of Jewish writers thinking in terms of melodic formulas may now be offered for further clarification of the foregoing. In the article "Jewish Music" in The New Grove Dictionary, two authors speculate on what melodies might have been used for the singing of the Psalms at the Temples of Jerusalem. The problem stems from directions at the beginning of certain psalms that seem to be incipits of poems. Examples include Psalm XXII ("The Hind of the Dawn") and Psalm LVI ("The Dove on Far-off Terebinths"). In interpreting these incipits, Werner merely
says that "... these seem to be incipits of songs well known at the times of the psalmist, and if so are a feature familiar in hymnology from every age."\textsuperscript{17} In contrast to Werner's short statement, Gerson-Kiwi, whose familiarity with the folk and art music of the Middle East was demonstrated in Chapter III (pp. 83, 86, and 92), begins with an observation of Sachs' and places it against the panorama of Eastern melody as understood today:

Sachs ... surmised that the strange terms apparently given to some unknown instruments of accompaniment are in fact references to certain folktune models (in Persian-Arabic music called \textit{maqamat}) in which the psalms were to be sung. Examples of these headings are 'lamnaseah al yonat ellem hoqim' (Psalm lvi, to be performed on the tune 'mute dove far off'), or 'lamnaseah al-ayelet hashahar' (Psalm xxii, to be performed on the tune or \textit{maqam} 'the hind of the dawn'). This would indeed agree with the practice customary in today's Arab music cultures. It clearly recalls the traditional Arab usage in classifying melodic models (e.g. 'Sabba' for 'the chaste love of the doe') and, in general, the Eastern principles of music theory and improvised composition. These are based on the slow transformation of an existing tune into a general pattern for composition (improvisation) in a similar mood, with its final classification as a musical 'mode'.\textsuperscript{18}


\textsuperscript{18}Edith Gerson-Kiwi, "Jewish Music, II. Secular, 2. Historical Aspects," The New Grove Dictionary of Music and Musicians, Vol. 9, p. 635. It should be noted that Sachs' observation was not original with him. For a description of this topic as it was understood at the turn of the century, see Charles Augustus Briggs and Emilie Grace Briggs, A Critical and Exegetical Commentary on the Book of Psalms (Edinburgh, 1906), I, lxxiv-lxxvii.
Gerson-Kiwi, in comparison to Jewish musical scholars before about 1940, goes much farther in placing Jewish melody in the context of Middle Eastern music than was ever done previously. And there is a more accurate point of focus in recent Jewish musical scholarship such as the paragraph just quoted. Gone are the studies of primitive tribes in rain forests with evolving two-tone melodies. The focus today is on a more subtle level, a stratum between the simplest folk melody and refined art music: a "gray area" combining elements of both acoustic melody and artistic theory. Further, as was demonstrated in the study of gagaku and Korean art music in Chapter II, the practice of adding more tones (ornaments) to a basic melody (what Gerson-Kiwi calls composition by improvisation) was also known in medieval Japan and Korea. In sum, it may be said that the research of recent Jewish scholars has provided an important impetus to our better understanding of the nature of melody in Europe and Asia.

**Cheironomy**

Cheironomy, the use of hand signals to guide the singing of a melody, is a long-standing tradition in Jewish music and has been known in the Coptic, Byzantine, and Latin chant traditions.¹⁹ There has long been some interest in this

technique because it is believed to be one of the foundations of Western musical notation, in that the swinging hand motions were the models for the first stage of neumatic notation. For purposes of substantiating some remarks to be made below about Byzantine and Latin chant, it will be beneficial here to make note of what is the standard interpretation of the meanings of the cheironomic signs. The important point is that the signs do not indicate single notes, but rather, "... to a complete organism of notes, i.e. to an elaborate melodic motif; and that these motifs are never themselves defined sequentially note for note." In terms of the search for distinctions between basic melody and the addition of embellishing tones that this study is engaged in, the statement just quoted indicates that the chieronomist works from generic conceptions of his melody. This conception of the melody is in two parts: "... on the one hand, following the mainstream of constant characters and, on the other, leaving room for variants to fill in the open spaces." It is not difficult to see the parallel between this description of cheironomic technique and the functioning of melody itself as described by the acoustic melodic formula. Of course, it is not possible to identify any specific tunes by this interpretation when applied to neumes, nor would that be appropriate since, as is still the

\[20\text{Ibid., p. 193.} \quad 21\text{Ibid., p. 194.}\]
custom in Persian dastgāh music, it is the improvisation of melody that is important, not the fixing of individual tunes.

Although the wide-spread use of chieronomy in music has long been noted, the use of hand signals in other areas of religious life has apparently not been noticed in musicological literature. It is well known that the growth of Gregorian (Frankish) chant was in large measure centered in the monasteries of Western Europe, but it is not much mentioned in music histories that the growth of chant was parallel with the growth of monastic life based on the Rule of St. Benedict. This new mode of monastic life not only stressed the cultivation of music for praise, but, away from the altar, required almost complete silence. In the musically important monastery at Cluny, for example, the monks were not allowed to talk at all on holy days, and for less than an hour on ordinary weekdays. Communication was made by a language of hand signs; as the church historian Joan Evans reports,

When at other times it was absolutely necessary to communicate with another, a language of signs was used of great fullness and elaboration. For bread (since it is round) the thumbs and first fingers of both hands were bent in a circle; for beans, the tip of the first finger was put on the first joint of the thumb; for eggs, one finger was knocked on another as one knocks an egg-shell to break it; for vegetables, one finger is knocked on another as if cutting them up; for fish, the hand is moved like a fish's tail; for pancakes, the hair was ruffled; for cheese, the two hands were pressed obliquely together. Such signs could be combined to give new meanings; for a cheese-tart the signs for
bread and cheese were given, and then one hand was hollowed tart-fashion; for waffles, the bread sign was given, and then a finger was waved to show their indentations. There were special signs for every kind of fish, fruit, vegetable, and drink; for all the vessels in the kitchen and refectory; for all garments and bed-clothes, for needles, combs, and knives, for all the church services and their parts, for the different kinds of service books, for monks, clerks, laymen, and all the officers of the abbey; . . .

The foregoing has been quoted at length in order to demonstrate, by its completeness as a catalogue, the degree to which hand signs had permeated monastic life. It is also of interest to observe the deftness with which Evans went from the mundane things of the kitchen to the service books of the altar and chapel; she came within a step of mentioning that hand signs were made in the performance of the sung portion of those service books. Perhaps the omission is just as well, since the importance of cheironomy waned in Western Europe as the spread of notation broadened.

Another aspect of Evans' descriptions worth noting is that the hand signs involved motion: they were not static signs—posed symbols like statues, so to speak—but moving gestures comparable to the signs of cheironomy.

**intonation**

In the discussion of melody in central Asia in Chapter III, some attention was given to the matter of intonation in the sense of the tuning of melodic intervals. In the

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present discussion of Jewish music, some final remarks about intonation should be made in order to fully represent research into this topic as it relates to the nature of melody.

The discussion of dastgāh music in Chapter III defined the meaning of intonation as used in this study. To restate the definition here, it may be said that the various tones within a structural interval, whether a tetrachord or an octave scale, should be thought of as scale degrees are: the quality of intonation of each degree may vary, but the intonation chosen at a particular moment in a performance is the definition of that degree for that moment, and the melodic motion must proceed on to another degree: motion from some intonation of a degree to another intonation of the same degree (chromaticism) is not found in folk or semi-art music. This mode of inquiry may now be broadened by the review of two studies of simple liturgical singing.

In a study of the liturgical chant of Christian Arabs in Israel, Dalia Cohen has used the same approach to the analysis of melody used by other recent Jewish scholars, but with a particular emphasis on the sizes of intervals. The music used in the study consists of the hymns of the neo-Byzantine rite of the Orthodox Christians and the Greek

Catholics, who together constitute the largest and most rooted group in Israel. As such, the singing of these Christian Arabs is of interest here for their being a bridge between the tradition of Middle Eastern music as described in Chapter III and the tradition of Western (Byzantine) chant. Cohen's analytical method consisted of the measurement of intervals in various recorded performances of Christian Arab singing. The measurements were done with the melodograph. Based on these measurements, Cohen made the two following conclusions which are of interest for the present discussion:

[1.] In a vocal performance (as also in Western music), an exact repetition of a tone or an interval actually never occurs. Rather, there is a kind of spread of pitches in which each tone appears, that is to say, a distribution of frequencies of each tone of the melody. There is also a spread in the size of the intervals.

[2.] The spread in pitches is often much larger in Oriental (Near Eastern) performance than in European.  

Cohen's phrase "spread of pitches" is very useful for describing a characteristic of melody that has not always been understood by European theorists; the concept has perhaps been confounded by the rich chromaticism of nineteenth-century Romantic music. To put the "spread of pitches" idea into the terminology of conventional theory textbooks, it may be said that the Western octave of twelve tones actually has only seven. Of these seven, five have a

\[24\text{Ibid., p. 70.}\]
spread of intonation which encompasses one other choice of pitch for that degree. Thus, the second, third, fourth, sixth, and seventh scale degrees are known in two forms each. With the passing of time, however, the two pitches of the five "spreaded" degrees came to be thought of as separate, individual tones. (Further comparison of the modern European scale and acoustic melody will be given in the remaining chapters below.)

In a study of Samaritan singing, Menashe Ravina noticed the same imprecision of intonation that Cohen did in the Christian Arab singing, and referred to the "spread of pitches" phenomenon as "casual tones." Ravina also noted that the Samaritan melody tends to be built on structural tetrachords and that the melodies often revolve around a central tone: from this he concludes that the tonal hierarchy of much Middle Eastern melody is based on a central tone rather than a final tone. This conclusion does represent a large amount of Asian and European melody, as a review of the melodies in Figures 1 and 2 will bear out. Nor is Ravina the only scholar to notice the organization of melody around a central tone: the Korean writer Lee Hye-ku has analyzed Korean songs for a "central

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25 Menashe Ravina, Organum and the Samaritans (Tel Aviv, 1963), p. 56.
26 Ibid., pp. 57-58.
27 Ibid., p. 55.
tonic," and the dastgāh scales in Figures 26 and 27 also demonstrate that a Persian melody can be organized around a central tonic (or finalis).

Byzantine Music

The discussion of Byzantine chant to follow will first address three aspects of the chant melodies. The first aspect will be the nature of early Byzantine chant, which was taken from Antioch and Palestine, and so was presumably comparable to the tetrachordal melodic structures that were discussed in the survey of Jewish music above. The second aspect will be a brief look at classical Greek music and music theory and its relation to Byzantine chant, and the third aspect will be concerned with the system of cadences that was added to Byzantine chant in its middle period. Finally, a review of current research into melodic formulas in Byzantine chant will be given, with a comparison of that research with the model of the acoustic melodic formula being included.

Early Byzantine Chant

Egon Wellesz has published a number of comparisons of Byzantine chants with other Byzantine chants and with Latin-rite chants. Several of his studies will now be reviewed

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28 Lee, Essays, p. 179.

in order to compare his findings with the model of the acoustic melodic formula.

In an anthology of early forms of Byzantine chant, Wellesz included a melody known in both the Byzantine rite (with a Greek text) and in the Beneventan rite (with a Latin text), where it was used as an antiphon on Good Friday. That chant melody is reproduced here in Figure 34.

![Fig. 34--Early Byzantine chant](image)

In Figure 34, the notes are grouped according to their placement over syllables of the words in the original two languages; the second, third, fourth, and fifth groups in the second staff were a melisma over one syllable in both languages. In comparing this chant melody with the acoustic melodic formula, it is not difficult to see that it is organized on an E-A-C-E structure, and that it traverses the lower fourth and middle third of the formula in the first staff and the middle and upper thirds in the second staff. It may be said to have a central tonic, the note A.

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Fig. 35--Five versions of a Byzantine troparion, as compared by Wellesz.

The melody in Figure 34 not only represents the outline of the acoustic melodic formula, it further demonstrates that even at an early date melodic ornaments were being added to chant of the Byzantine rite. The ornaments in the melody of Figure 34 are not difficult to describe: all consist of two or three notes, the two-note embellishments being what would in a later age be known as an appoggiatura. This accretion of ornaments, with the passing of time, became an outstanding feature of Byzantine chant. Modern researchers in Byzantine chant have long recognized the florid nature of middle and late Byzantine chant, including the process of accretion. An example of such a recognition by Wellesz is shown in Figure 35\textsuperscript{31} where five versions of a troparion, drawn from manuscripts of different ages, are compared. The sources of the versions are as follows: Va, Codex Vatopedi 1499, page 42, written on Mt. Athos in 1292;
D, Codex theol. gr. 181 of the Nationalbibliothek in Vienna, dating from 1221; V, Codex theol. gr. 136, also in the Vienna Nationalbibliothek, written about the year 1000; G, F., Codex Grottaferrata A, B, X, of about 1138; and L, Codex Laura 252, another Mt. Athos manuscript, this one dating from the end of the ninth century.

In his assessment of the comparison in Figure 35, Wellesz confirms that the five series of neumes "... all represent the same melody, whose melismatic beginning only reaches full expression in Va and D;" \(^{32}\) and he further realizes the problem of the earliest version (L), more than being syllabic, does not even have a neume for the third and fourth syllables. Obviously, the performance of this troparion from the Laura manuscript requires the addition of unspecified notes by the singer. In other words, melodic embellishments were being added to a given and known melody. With time, various elaborated versions of the basic tune were written down, and these survive in the other four manuscripts in Figure 35. It may be further mentioned that this process—the adding of ornaments to established tunes which eventually, through notation, become the substance of those tunes—is the same essential process observed in Japanese and Korean art music in Chapter II.

\(^{32}\) Ibid., p. 7.
In a melodic comparison provided to him by Dom Michel Huglo, Wellesz observes the similarity of the Polychronion in honor of Manuel II (1391-1425), the Acclamation in honor of John VIII (1425-48), and Kyrie XIV. These three melodies are reproduced in Figure 36, where it may be seen that the tetrachord of D to G (lower fourth of the acoustic melodic formula on D-G-B-D) is the structure of the tune, and that the Polychronion is the most elaborated version of the three. In assessment, Wellesz says, "We may assume, therefore, that the melody belongs to that old stratum, common to the Eastern and Western churches, which goes back to Syro-Palestinian worship." Wellesz further remarks that "the process of ornamentation is in keeping with similar melismatic developments both in Eastern and Western Chant."

Polychronion

\[ \begin{align*}
\text{Acclamation} & & \\
\text{Kyrie XIV} & & \\
\end{align*} \]

Fig. 36--Comparison of Byzantine and Latin chants by Huglo


34Ibid., p. 121.

Classical Greek Theory

Because of the geographical location of the Byzantine (Greek Orthodox) church's origins, there has been some presumption in musical thinking that the Byzantine church carried on the art of the classical Greek theorists more than the Roman church did. This is not especially true, and furthermore, some elements of melody as portrayed by the acoustic melodic formula can be traced in classical Greek art music.

A study of six fragments of papyri which have newly-discovered examples of classical Greek melody provides some conclusions which point to the possibility of a concept of structural tones and their ornamentation in ancient Greece. Of particular interest for the present study is the Papyrus Leiden Inv. 510, containing lines 783-93 of Iphigenia in Aulis, a play of Euripides produced posthumously in 405 B.C. After a lengthy analysis of the papyrus to determine the meter and melody of the interlinear musical notation, Mathiesen observes that "... the melody stresses standing tones: in the first line the diatonic lichanos meson (square Sigma) moving to the the mese (A) by way of decorative notes ..." is an example of his interpretation.

37 Ibid., p. 25. 
38 Ibid., p. 31.
While it seems plausible that the "standing tones" observed by Mathiesen are comparable to the structural tones of the acoustic melodic formula, there is as yet so little music known to be extant from antiquity that it cannot be ascertained what the nature of "standing tones" and their ornamentation might have been. Yet there may well have existed a difference between classical Greek music theory and the performance of melody in that age.

The separation of medieval chant in Europe and the revived Greek theory is better documented. Wellesz observed that "... Greek musical theory had no connection whatever with Byzantine ecclesiastical music in the twelfth century."\(^{39}\) For such Byzantine theorists as Mesarites, Wellesz has particular criticism: "Not only did he no longer understand the meaning of the subject he tried to explain to the reader, but we may accept as a fact his view that in his day [Greek] terms... were to most people mere names..."\(^{40}\) Similar problems with Greek theory can be found in Latin chant:

Chant melodies, however, require considerably more flexibility than is provided by such a system [as the Greek]. Thus in the Greater Perfect System—the diatonic system used by Hucbald—the synemmenon tetradchord (d, e, b, a) of the Lesser Perfect System had constantly to be invoked to provide the pitches actually called for by the melodies.


\(^{40}\) Ibid.
Incompatibilities more subtle and profound emerge only after making a sustained attempt to go through the process of superimposing the chant repertory onto the Greater Perfect System. The difficulties are sufficiently great so that, if it were not known that the process had actually occurred, one might doubt that it could occur.\textsuperscript{41}

These observations by Wellesz and Crocker, when taken together, encourage a tempered approach to the analysis of medieval chant in terms of the theoretical modes. Similarly the use of cadences to describe chant must be done judiciously, as will be discussed next.

**Cadences**

In the period between the first and seventh centuries A.D., Byzantine melody went through an important change in style. As was just discussed, this style change was not the result of either preserving the tradition of classical Greek theory or an appropriate application of the Greek system. However, the systematic approach to music was not unknown to the Byzantine musicians, as is indicated by their creation of a system of cadences by which to classify the chant melodies. These cadences were artificial devices which were first added to psalmic chants (a practice borrowed by churches in Toledo, Rome, and Milan),\textsuperscript{42} and eventually used throughout the entire Byzantine repertory. So exact and


consistent were these cadences, which were arbitrarily added to the established chant repertory, that Wellesz went so far as to say that if the cadences of the echoi (modes) are known, one can sing from the vague neumatic notation of early Byzantine manuscripts, largely because the cadence system was kept virtually intact from the time of the earliest manuscripts down to the fifteenth century. If the distinction and integrity of the cadence system thus indicated is actual, it should be possible to approach a sample of later Byzantine chant and distinguish the imposed cadence from the earlier chant; further, it would be of interest to see to what extent the melody without cadence resembles the acoustic melodic formula. Towards this purpose, three examples from Wellesz's anthology will now be analyzed.

The melody quoted in Figure 37 is the fourth ode from the Kanon for the Feast of St. Lazarus, in the first echos (on D). As it appears in Figure 37, this melody clearly outlines the tones D and A, with D appearing as the finalis. But when all of the D's are ignored, and some of the notes approaching them, such as the three notes preceding the very last D, another form of melody emerges. The fact that the first two phrases begin on E now takes on a new significance.

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43 Egon Wellesz, Eastern Elements in Western Chant (Boston, 1947), p. 91.
in that the acoustic melodic formula on E-A-C is outlined. The repeated activity on E and C give the note A the characteristic of a central tonic. It may also be surmised that the three instances of leaps from A up to D in the melody are later alterations to the original chant effected in order to make the tonal organization better represent the echoes. An even more obvious example of an acoustic melody on E-A-C being arbitrarily classed in the D mode is the third ode from the Kanon for Easter Day by John of Damascus, shown here in Figure 38\textsuperscript{46}, which uses the tonic D only once (and then not as a finalis), instead centering itself around A, with E and C as the other structural tones. The tonal situation illustrated in Figures 37 and 38 is not unusual.
in the Byzantine repertory. The recognition of it allows the discernment of original chant (which may be represented by the acoustic melodic formula) and imposed cadence.

Having established the distinction between original chant and the addition of cadential tones in Byzantine melody, a similar attempt at separating the florid melodic ornaments from their ornamented tunes may follow. The fact that ornaments were added to chant melodies over the centuries was demonstrated by Wellesz in his comparison reproduced here in Figure 35. The principal point of interest here is the mode of application of the ornaments and whether the structural formula bearing the ornaments might itself have been a singable melody. This line of inquiry, of course, is modelled on that of Picken and his students as illustrated in Chapter II. Turning then to Figure 39, the first ode of the Kanon for the Feast of St. Lazarus is shown

\[\text{Fig. 38--The third ode from the Kanon for Easter Day}\]
Fig. 39--The first ode from the Kanon for the Feast of St. Lazarus (upper staff) and a reduced version of it achieved by the removal of melodic ornaments (lower staff).

with a reduced version of the melody arrived at by the removal of the melodic ornaments. The process of removal is relatively straight-forward for this melody because the tune tends to dwell on the note A. The first two phrases, for example, are little more than an embellishment of the single tone A. The third phrase may be seen as motion over the lower fourth of the acoustic melodic motion (E to A), with the addition of the imposed cadence tone, A. In the lower staff of Figure 39, only the structural tones are shown
Fig. 40--A reduced version of the first ode of the Kanon for the Theotokos, showing two structural formulas.

plainly; the cadence tones are in parentheses. In comparison with the accretion of ornaments in Japanese gagaku, which was shown in Chapter II (pp. 60-61) to be unsystematic, it may be said in admiration of the Byzantine art that the ornaments of Figure 39 are applied in a smooth and homogeneous way. (The nature of Byzantine ornamentation will be further discussed below.)

In the discussion of Japanese folk music in Chapter II, it was shown that many examples of min-yō melody involve structural tetrachords that change position (pp. 25-26).
In the discussion of central Asian folk music in Chapter III there is a similar demonstration of shifting structural intervals in the melody of that region (pp. 80-85). To carry this mode of analysis into the discussion of medieval chant in Europe, an analysis of the structural design within a Byzantine chant (as shown in Figure 39) may be undertaken in order to see if there are more than one position of the acoustic melodic formula. Such an analysis is done in Figure 40, where the first ode of the Kanon for the Theotokos (in the fourth echos, on G) is shown in the upper staff, and a reduced version of it, realized by the removal of ornaments, is shown in the lower staff. As the form of the melody in the lower staff illustrates, the reduced (and presumably original, or nearly so) tonal substance of the melody begins with the lower fourth of the acoustic melodic formula, on D to G, and later shifts to the full formula on C-F-A-C, but then returns to the D-G-B position at the end. The presence of this shifting melodic structure, and the fact of the Byzantine borrowings from Palestinian melody in the first centuries A.D., are two items of evidence pointing to an early unity of thinking in melody between the Christian rites, the synagogue, and central Asian melody. This is not to say that there are any particular melodies from Asia to be found in the kanones: only a unity of thinking.

Ibid., p. 26, is the source of the ode.
Cento and Formula

The view of Byzantine chant gained by the foregoing discussion and analyses using the model of the acoustic melodic formula may now be compared with the standard interpretations of Byzantine melody.

Centonization.--The traditional view describing the composition of Byzantine chant conceives of "the process of assembling a chant as a selective patchwork (cento) of modally appropriate formulae--often termed 'centonization . . .". Two aspects of this process of centonate assembling may be especially noted here.

1. The melodic patterns are not limited to one mode. Most may be used in several modes.

2. The melodic patterns are associated with particular pitches and melodic positions more than particular modal scales.

By way of interpretation, it may be said that Levy is using the term "cento" to refer to what in the present study are referred to as melodic ornaments and embellishments. The fact that Levy refers to matters of melodic structure to define the cento patterns--"not limited to one mode" and "associated with particular pitches and melodic positions," for example--underscores the role of the patterns. These

50 Ibid.
centonate patterns, often called melodic formulas by scholars in chant studies, are an important component in the science of Byzantine melody. The various formulas were standardized by the medieval practitioners, and were given names and practical descriptions: for example, Koukouzeles, the great fourteenth-century chant master, composed a didactic chant interpreting the names of the various formulas. Modern writers have given considerable attention to them in their research. However, from the perspective of the acoustic melodic formula, it may be seen that the centonization theory does not explain the other aspect of melody, that of over-all structure. In other words, the scheduling process by which these melodic formulas are ordered is not explained by centonization. Of course, some suggestion of the ordering process (structural design within the whole melody) was given by the analyses in Figures 39 and 40, but yet within standard chant theory the omission remains. It is not helpful to fall back on the modal scales in this regard, since, as was shown above in direct quotations, the cadence tones and Greek modes were added to chant after its establishment. What was the over-all organization of Latin and Byzantine chant before the introduction of the cadences and finals? This lacuna in chant theory has been obliquely approached in another, more recent theory of chant formulas,

51 It is partly given in Ibid., Ex. 4.
a theory developed by Leo Treitler and referred to as the study of formulaic chant. A discussion of this theory is next below.

Formulaic chant.—The origin of the centonization theory lies in the writings of Peter Wagner⁵² and Paolo Ferretti.⁵³ The concept was then adopted by Wellesz, Strunk, and Levy in Byzantine chant studies and by Apel and subsequent writers in Latin chant studies. The first major critical study of centonization was presented by Treitler,⁵⁴ who there reviewed the seminal works of the centonate group and then proceeded to describe his own, contrasting view of formulaic chant, in which, basically, the essential unity of the melodic formulas is stressed by virtue of their being taken as formulaic variants of one another. This method of analysis deserves full consideration here; however, since Treitler is primarily concerned with Latin chant, the review of his theory will be given in the next section of this chapter.


⁵³ Paolo Ferretti, Estetica gregoriana, ossia Tratto delle forme musicali del canto gregoriano (Rome, 1934).

Latin Chant

Perhaps the central topic in current studies of Latin chant is the question of the standardization of the repertory: that is, the determination of how a fluid oral tradition became fixed in notation, and how, in the course of that process, the mental conception of melody changed.

The centonization theory and its application to the study of Byzantine chant has been explained above. By contrast, the theory of formulaic chant, developed by Treitler, holds that the melodic figures in chant are variants of models which define only the main ingredients of a performed phrase.

Treitler bases his method of analysis on the psychology of remembering. First, he says, "Perceiving is not passive reception, it is active organizing." This active organizing compares perceived material with patterns and schemata from previous experiences. Then, Treitler continues, ". . . we draw out certain salient features of the matter. . . . These serve as signposts for the process of assimilating and reorganizing."56

The important concept in the basis of Treitler's method of analysis is that a mind attempting to remember something (a melody) attempts to capture only significant or familiar

56 Ibid., p. 345.
features, not every detail. These significant features are most probably features which resemble what is already known. In the case of melody, the listener will remember those parts of a melody which sound like the prominent parts of other melodies previously learned.

In applying this concept of remembering to the oral transmission of chant, Treitler presents the comparative score shown in Figure 41. The top staff in Figure 41 "... shows those features that every phrase for that position incorporates. It is a representation of what I shall call the formulaic system for that phrase position." Below the top staff are the incipits of various Tracts in Mode II.

Treitler's comparison is concerned only with the common substance of similar melodic figures occurring in analogous places in different melodies. In his words, "... the point is simply that 'formulaic system' is a construct, a way of referring to the singer's assimilated sense of the pattern of a melodic phrase ... ." In comparing Treitler's method with centonization, it must first be said that both methods are concerned with what have been referred to in this study as melodic ornaments. The concept of a melodic structure to which the ornaments are added is not an explicit part of either theory: neither

57 Ibid., p. 358.  58 Ibid., p. 357.  59 Ibid., p. 359.
Fig. 41--Comparison of Tract formulas by Treitler
Treitler nor the centonate scholars consider directly how the melodic figures, whether centonate examples or formulaic variants, are organized over the entire chant. Indeed, Treitler perhaps has unwittingly contradicted himself in his "Homer and Gregory" article by saying at one point that a chant singer "... does not have before him a skeleton outline of the melody that he is to elaborate,"\(^{60}\) and at another point makes this telling remark about a hypothetical chant singer:

He learns one melody and he imitates its pattern in inventing another like it. At some point his inventions do not refer back to the models of concrete melodies but are based on his internalized sense of pattern. That is more or less what it would mean to speak of the transmission of a formulaic system.\(^{61}\)

And elsewhere, Treitler says,

When transmission takes place through performance, the controlling condition is to keep the performance going, without notation, without a catalogue of formulas, without a given line on which to improvise. There is not much time to deliberate from phrase to phrase, and there is no opportunity to revise.\(^{62}\)

These three statements by Treitler bring up these questions: Did the medieval chant singer think of a melody as something to be elaborated in order to be performed? Or was singing a process imitating patterns of melodies? How much chant composition actually took place during Mass or Office? By recalling the reductional analyses in Chapters II and III above, and the reductions of Byzantine chants in Figures 39

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\(^{60}\)Ibid., p. 346.  
^{61}\)Ibid., p. 360.  
and 40, in which structural formulas were distinguished from ornamental figures, a certain confusion may be seen in Treitler’s statements. A singer who is elaborating a melody will of necessity be thinking of “a catalogue of formulas,” but a singer imitating the whole of a generic melody will need to think on a much broader time-scale. The width of focus on the time-line of the passing melody is quite different for these two hypothetical chant singers. This difference is the most contradictory aspect of Treitler’s three statements above. In them, the concept of formulaic variation (or composition or improvisation) is indiscriminately applied to short phrases and entire melodies. Actually, as may be understood from the perspective of the acoustic melodic formula, the sort of chant that Treitler must have in mind when making such statements as the above would be a chant that is at a moderate stage of elaboration: more florid than the earliest chant from Palestine, but still at an early enough stage that the embellishments can be distinguished from the sort of “skeleton outline of the melody” that the original chant provided, and which Treitler provides in the top staff of Figure 41. Yet, this stage of chant development does have the ornaments and structure so homogeneously interwoven that they seem indistinguishable: hence Treitler did not divide them apart, but took them to be variable monoliths. The parallels between the mental conception of chant that Treitler’s theory represents and
the conception that the gagaku musicians in Japan have about their repertory (see pp. 43-45 above) are remarkable: in both instances, a melodic repertory in neither its first nor last stage of style development is taken as the definition of the style.

We have seen, then, that the whole length of a melody, and what structures it, is a matter not fully thought out by Treitler (and even less so by the centonate advocates), but, to his credit, he comes closer to realizing the problem than any of the centonate scholars. For example, consider his criticism of centonate analysis as "... a static view of the process of composition. ..." which is marred by "... the failure of the theory to raise any questions about the patterns and orders in the occurrence of formulas within melodies, although centonate analysts have long recognized the fact of such patterns and orders." The key words here are "orders in the occurrence of formulas," but it must also be said that Treitler himself fails to suggest such an ordering procedure. The suggestion of the present study, of course, is that the top staff in Figure 41 presents the ordering process: the acoustic melodic formula, in this case on A-D-F. The Tracts are widely recognized to be the oldest and most formulaic (perhaps "stereotyped" is a

63 Ibid., p. 12.
64 Ibid., p. 13.
better term) of the Latin chants, making it no surprise that the acoustic melodic formula stands out when Tract melodies are analytically compared.

Another description of the possible compositional method of the medieval chant singer as been offered in an article which was read by Treitler, and discussed by him with its author before publication. After a study of Latin Graduals, Hucke says,

The notation of the solo parts of Gregorian chant gives an impression of patterns and rules; it reflects decisions made by the notator, but at the same time suggests that different decisions would have been possible. It gives an idea of how notators may have written down the same piece in different ways, and how one notator would have possibly written down the melody if he had followed another authority, or if his authority had changed his mind.

This statement by Hucke provides a useful description of the process in which the Latin chant was set down in notation by Frankish manuscript writers. It is important to note that, in Hucke's view, the chant repertory was still developing at the time of notation. While he does not say what the process of development was, it may be drawn from the discussion above that it was a two-part development involving the increasing ornamentation of old chant and the imposition of revived Greek modes into the chants. In arriving at his conclusion, quoted above, Hucke does discuss how melismas


66 Ibid., p. 467.

67 Ibid., p. 460.
were used in chant singing, but he bases his conclusion on matters of text setting rather than over-all melodic structure. Consequently, he, too, does not suggest any melodic cause for the use of ornaments or their selection for notated versions of chant.

Treitler has also offered a view of the relation of chant and notation\(^6^8\) which includes a consideration of melodic ornaments. A review of this study may begin with Treitler's summary of the standard theory on the formation, origin, and meaning of neumatic notation.

1. The basic neumes are the Punctum and the Virga, and all other neumes are compounds of these.
2. The referents of the Punctum and the Virga are single high and low notes, respectively. They retain those meanings in compound neumes.
3. The Punctum and the Virga descend from Latin grammatical accents: accentus gravis and accentus acutus, respectively.\(^6^9\)

Of particular interest here is Treitler's report that the two basic neumes indicate single tones. He cites Cousse-maker as the originator of that hypothesis and gives a list of major chant scholars since him who have taken up the interpretation.\(^7^0\) The only exception to the list is Jacques Handschin, who, in a study of the nineteenth chapter of Musica disciplina of Aurelian, noticed that some of the


\(^6^9\) Ibid., p. 249.

\(^7^0\) Ibid., p. 250.
neumes indicated more than one note: a slanted upstroke seemed to indicate two ascending notes, and a semicircle resembling a circumflex seemed to indicate three notes in a rising and falling pattern. Aurelian used the word accentus in this passage, and Treitler concludes that "... in his use of the word 'accent' Aurelian was not really referring to neumes at all, but to melodic figures." Treitler's conclusion accords with the concept of melody that the present study has addressed: that in an early stage of development, a melodic style is thought of as groups of notes organized about a time-frame referred to as the structural formula (part or all of the acoustic melodic formula), and that careful consideration of individual tones (including intonation and chromaticism) comes later, as a product of systematic theory. Treitler's conclusion allows us to see a process in which the neumes first represented groups of notes, and then individual tones, opening the way for the writing of scales, measured rhythm, and the accidentals required by transposed modes and musica ficta. It may also be said that the nature of cheironomy, as explained above (including the daily use of moving hand signs throughout monastic life) also supports Treitler's conclusion, in that the signs indicate groups of notes, not single tones.

72 Ibid., p. 267.
From a broader viewpoint, Werner has previously noticed this same phenomenon of melody-thinking becoming more and more precise with the introduction of notation. After a discussion of the genealogy of Byzantine and Latin neumes in Syrian ecphonetic signs and cheironomy, he says,

And again we realize how the Asian raw material was polished and rearranged by the application of Greek methods. They systematized but also mutilated the originally syntactic function of the Semitic notation, yielding to the ever increasing demands for exactitude and precision. The decisive break with the principle of ecphonetic notation occurred with the introduction of the first horizontal staff, in order to define an exact musical pitch, a note fixée for the early neumes. This happened in Western Europe sometime in the ninth century. Neither the Byzantine nor the Syriac nor the Hebrew systems followed Rome in this adventure: their neumes retained their primitive phrasing character almost to this day.

Werner's references to neumes seem to indicate that he thinks of the signs as meaning a single tone ("an exact musical pitch"), but otherwise his statement is a useful summary of the relation of chant melody and its notation, particularly when it is remembered that his term "phrasing character" must refer to groups of notes. But again, we are left to wonder how the scheduling of these groups of notes was accomplished. The present study offers the model of the acoustic melodic formula as an answer to that problem.

The acoustic melodic formula, particularly the lower fourth of it, was seen to be the structural design in the Jewish, Byzantine, and Latin chants in Figures 32 through

73 Werner, The Sacred Bridge, p. 359.
Fig. 42—Beginning of *Omnis currret homo*, a *versus* in discant style of the School of St. Martial.

41. In each case, the melodic structure was elaborated with melodic figures. As the chant repertory developed in France and elsewhere in Western Europe, the melodic structures gradually changed. Whereas the acoustic melodic formula, or at least the lower fourth of it, can be used to describe most early chant, later chants tend to outline thirds and even octaves. For example, the *versus* in Figure 42 has melodic passages of consecutive thirds, leaps of the fifth, and a concept of scales degrees, as illustrated by the triplet figures at the end of the excerpt: the first notes of each triplet, taken together, spell out the dominant-to-tonic pentachord of D-C-B-A-G. An examination of other

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sequences, hymns, and newly-composed voices in early polyphony will bear out the same situation: a radical change in the structural design was taking place in the melody of Western music. Yet the change was a gradual one: in the \textit{versus} in Figure 42, the concept of elaboration of melodic structures is still at work in the situation of the final pentachord being embellished with triplet figures. Also, the second measure of the \textit{versus} (as notated in Figure 42) may be seen as an embellishment of the same pentachord, and the third measure of the upper voice may be seen as another embellishment of the G-E-C-D pattern which is the structure of measure 1. The cause of this gradual change from the tetrachord to the thirds and fifths which would become the basis of major-minor tonality is not hard to recognize: it is the conscious application of the church modes in the composition of new melodies. This alignment of new melodies according to the octave scale and the pentachord was concurrent with other theoretical developments in medieval music, such as notation and measured rhythm, which served to create a musical art of fixed, notated melodies and a note-to-note conception of melody (rather than one of embellishing figures applied to broad structures). When these changes had taken their composite effect, the nature of European music, changing toward what it would become in the Common Practice Era and away from its origins in the embellished formulas of Asia, was confirmed and launched on its
course of style development. Some consideration of the early stages of that style development, related to the present line of inquiry, is offered in the next chapter.
CHAPTER V

THE CHANGING NATURE OF EUROPEAN MELODY

AFTER THE MIDDLE AGES

In the survey of the various melodic styles and traditions in the preceding chapters, the analytical model of the acoustic melodic formula was used as a tool for the description of melody and as a design representing certain characteristics of melody to be found in a broad range of melodic practice spanning Europe, central Asia, and Japan and Korea. In Chapter IV, the slow demise of the type of acoustic melody represented by the acoustic melodic formula was related. From that point in history, the story of European melody should be described in the terminology (already developed by modern musicology) of harmony and counterpoint. However, since the typical reader of this dissertation will be trained in the theory of European harmony and counterpoint since 1500, it may be of use here to give briefly an overview of some aspects of European music in the late Middle Ages and the Renaissance and compare those aspects with the type of melody represented by the acoustic melodic formula. The purpose of the remarks to follow is neither to fully portray the emergence of Renaissance music nor to develop additional attributes of the acoustic melodic
formula; it is only intended for the reader to better understand the difference between melody of the Common Practice Era and melody in Europe until the Middle Ages, and to have some understanding of the process in which the change from the one to the other took place.

We have seen that, in medieval chant, modes and cadential formulas were imposed onto already established chant melodies. The expectable result of this process of classification was that some melodies only minimally reflected the mode to which they were assigned, or a melody's tonal inventory was changed as new cadence tones and tonic tones were inserted and added in suffix to it. With the emergence of newly-written melody composed by musicians working with notation, however, European melody slowly began to reflect the church modes, as was illustrated by the versus in Figure 42. The next step in that line of development, the complete conceptualization of a melody in terms of a modal scale, did not come until the early sixteenth century, when, in 1525, the Trattato della natura et cognizione di tutti gli tuoni di canto figurato of Pietro Aaron, "... the first work both to claim modality as a universal for polyphony and to exemplify the claim by citing a large number of actual polyphonic pieces ..."¹ was published at Venice.

From the time of Aaron's treatise through the second third of the sixteenth century, European music "... begins to provide hard evidence of a systematic interest on the part of composers and editors in the question of 'modality,'" and this interest led to a reversal of the place of melody and mode in the composers' thinking; as Powers says, "... 'modes' were originally thought of more as a posteriori categories for grouping items in a repertory than a priori pre-compositional choices or assumptions." From here, the development of European melody in terms of modes, and later, major and minor scales, may be conveniently seen.

Parallel with the development of the concept that a melody should reflect its mode, Howard Mayer Brown has reported that treatises on the art of composing, that is, "... books that tell the budding composer precisely how to go about his craft," were not written until after 1550. Prior to this (and after), Brown says, "Composers as well as poets and painters learned their craft by imitating older masters. Composers modeled new pieces directly on old ones." Brown has gone on to illustrate how composers derived their imitative techniques from rhetoric, and

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2Ibid., p. 435.  
3Ibid., p. 435.  
5Ibid., p. 8.  
6Ibid., pp. 35 and 38-47.
perhaps there is some lineage between early European melody (as various embellishments of standard formulas) and this concept of imitation in polyphony about 1550; but whether or not, the important point is that the mental scenario in which composers developed their melodies and kept them flowing onward in performance had changed enormously since the early Middle Ages and the proto-Asian conception of melody which was prevalent then. By 1550, to judge by the information provided by Powers and Brown, there was a new kind of artistic practitioner, the composer, who was writing melodies that were increasingly thought of as "his," and, to a certain degree that would enlarge with passing time, "original." By 1550, the composer thought of the modal scale first, and then the melody was fashioned to reflect it. The melodic figures in the melodies were modelled on those of notated prototypes by masters, with careful attention given to individual tones. This thinking was also a great change from the conception of melody prevalent in the early Middle Ages, when neumes and cheironomic hand signs indicated groups of relatively unspecified tones.

Of course, in Renaissance music, polyphony (and increasingly, harmony) is as important as melody alone. There is some evidence that harmonic thinking is to be found in polyphonic music as early as the thirteenth century; it may be enlightening to examine some of this evidence in order to compare it to the model of the acoustic melodic
A study of the famous canon *Sumer is icumen in*, for example, takes note of that piece's "... constant harmonic shift of tonic and supertonic." That interpretation is, of course, one that may have seemed anachronistic at one time. But having been made, the interpretation may be taken as a view of *Sumer is icumen in* from the modern perspective. Interestingly for purposes of comparison, the same author also describes the makeup of that piece's music in a way closely aligned with a perspective taken from proto-Asian antiquity:

Given the basic octave framework and a melodic style proceeding largely in diatonic steps and avoiding skips larger than a fourth, the number of melodic contours that can be derived within this stylistic framework is fairly limited. The mental assimilation of these stylistic determinants could have led to a gradual stabilization and crystallization of melodic formulas which, once established, are capable of being instantly and intuitively retrieved from the musical memory of the performer and placed in the appropriate context.

Of course, much of the terminology in the foregoing description is inappropriate for describing melody related to the acoustic melodic formula (octave, for example). Yet, the basic idea, one of improvising from generic models, is familiar. Like so much writing on early melody, the above passage does not distinguish between melodic structure and melodic embellishment and it reflects the ideas of

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7Shai Burstyn, "Gerald of Wales and the Sumer Canon," *The Journal of Musicology*, II (Spring, 1983), 141.

8Ibid., p. 145.
centonization with such phrases as "melodic formulas ... placed in the appropriate context." But the observation of formulaic improvisation in a chordal idiom is a helpful insight to the stylistic growth of European music in the late Middle Ages and early Renaissance. And again, as with most writing on early music, this author has viewed Sumer is icumen in from a twentieth-century perspective, basically, rather than a pre-Medieval one, or else the full implication of such statements as "there is every reason to assume that this process of melodic composition by formulas goes back to the 13th century and before" would have been realized, explored, and substantiated. It has been the goal of the present study to attempt such an exploration: to examine melody in a number of early Asian and European traditions, as well as folk music, and work backwards, so to speak, approaching the era of Renaissance music from the past rather than the present.

One final observation about melody that may be represented by the acoustic melodic formula has to do with its continuing presence in European music of the past few hundred years. It has been demonstrated in Chapters II, III, and IV that a number of high art traditions of melody in Europe and Asia were based on repertories which were describable by the fourth and thirds of the acoustic melodic

\[\text{Ibid.}\]
formula, and that these basic repertories were stylistically changed into art forms by the development of systems of theory that called greater attention to the substance of ornaments added to simpler melodies. If this concept is a description of a universal essence of melody, then it may be supposed that that essence is enduring even under the weight of imposed factors of theory such as cadence tones and scale hierarchy. A test of this supposition may be done by examining the melodic repertory of some European cultural group that, since the sixteenth century, has become separated from the tradition of European art music. The effect in such a situation would be that of removing the artistically developed characteristics of major-minor tonality. Such a test situation is available in the repertories of Protestant sacred music on the east coast of North America in the seventeenth and eighteenth centuries. The fact that the technical refinements of music by such composers as William Billings seem to be a deterioration of the art of Bach and Handel has been noticed in much literature on American music and needs no review here. The present line of inquiry is in fact different from that assessment: the question here has to do with the degree to which the melody of the colonial settlers began to resemble the acoustic melodic formula rather than the degree to which it failed to measure up to art music in eighteenth-century Europe.
There in fact was a tendency for colonial hymn tunes to return to the structural shape represented by the acoustic melodic formula. Typical religious folk melodies illustrating this tendency are "Manna" tune and the more famous tune of "Amazing Grace," both still found in most American hymnals today. This type of tune is normally described as being built on a pentatonic scale, but more broadly, the pattern is the acoustic melodic formula with one auxiliary tone in the lower fourth and one in the middle third. As a result of his extensive research in Southern spirituals, George Pullen Jackson eventually came to the realization that the vast majority of the folk hymn-tunes began by leap of a perfect fourth up to the tonic, a descent of a third to the tonic, or a repeated tonic: either the ascending fourth or the descending third may have one unaccented tone within that interval.\(^1\) Jackson is obviously describing the acoustic melodic formula with auxiliary tones in the lower fourth and the middle third, exactly as the opening phrase of "Amazing Grace" is constructed, both form and content.

To observe the return of the type of melody represented by the acoustic melodic formula in a social group separated from its European origins is not a complete confirmation of the returning functioning of the formula, however. The

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second general characteristic of acoustic melody, in which such melodies are gradually embellished with ornaments which become thought of, with passing time, as monolithic parts of "the melody," should also be observable if the acoustic melodic formula as a functioning scheme describing a concept of how melody works, is part of colonial American melody.

Recent research by Nicholas Temperley in American hymnody of archaic origins seems to confirm that this second characteristic of acoustic melody—the accretion of ornaments—does in fact continue to function. One of Temperley's samples in this regard is an Amish hymn transcribed in Pennsylvania about 1905. The first four of the seven phrases of that hymn are reproduced here in the upper staff of Figure 43, where each measure of the notation represents one syllable of the text; in other words, each measure is a slow, sustained melisma. That being the case, Temperley proceeded to create an extracted melody composed only of the first notes in each measure. This extracted melody is shown in the lower staff of Figure 43. This extracted melody is a viable tune in the style of early German Protestant hymnody, suggesting that it was in fact a tune in its own right at one time. After a search of tune

12 Ibid., p. 540.
13 Ibid., p. 542.
Fig. 43--Transcription of Amish singing (Pennsylvania, circa 1905; upper staff) and a melody extracted from it by Temperley by the removal of ornaments (lower staff).
indices by Zahn, Temperley found two sixteenth-century hymn-
tunes that closely resemble his extracted tune. The first
four phrases of these two tunes are shown above in Figures
44 and 45, and should be compared to the extracted tune in
the lower staff of Figure 43. A particularly close resem-
blance may be seen between the last eleven notes of Tempe-
raly's extracted tune and the last eleven notes of Figure 44.
Temperley concludes that ". . . the correspondence is close
enough to place the relationship beyond any doubt."15

Temperley makes one further investigation of interest
to the present study. The first phrase of the tune of 1569,
shown in Figure 45, begins and ends on the mediant, and the
second phrase moves from mediant to tonic. The remaining
three phrases (not shown here) are similar: phrase five
moves from dominant to mediant (D to B), phrase six moves

14 Johannes Zahn, Die Melodien der deutschen evangel-
ischen Kirchenlieder, 6 vols (Gutersloh, 1889-93), tunes
4482b and 4483.

from supertonic to dominant (A to D), and phrase seven begins and ends on the mediant, B. This ambitus gives the 1569 tune the appearance of being an inner voice in a harmonization. Temperley makes some inconclusive speculation that the 1569 tune may have actually been created as an inner voice, and subsequently used by itself as a tune, but if such a tune history should be proven, the fact would provide an interesting demonstration of the use of a melody changing from being a part of a style based in theory to a style describable by the acoustic melodic formula. Even in the two tunes in Figures 44 and 45, the reader of this dissertation may easily see that the first two phrases of 1596 tune outline the acoustic melodic formula on D-G-B-D, while the 1569 tune outlines a major triad. This observation allows another assessment of the 1596 and 1569 tunes, that the 1596 tune was derived from a folk song by a songbook editor, as was commonly done in early Protestant hymnody, while the 1569 tune was composed, as Temperley suggests. In other words, the tunes are of quite different origins, and their tonal structures point to this. But in any event, Temperley's very plausible demonstration that a folk-like hymn is composed of a structural melody slowed and laden with ornaments, and that that structural tune had some kind of origin in sixteenth-century chorale harmonization,

\[16\text{ Ibid., p. 543.}\]
is a suggestion of far-reaching implication, putting the folk hymnody of eastern North America into the category of melody studies in Chapters II, III, and IV above, represented by the spontaneously reoccurring acoustic melodic formula. As Temperley says about the archaic style of Protestant singing shown in Figure 43, "... this style of singing is to some extent a 'natural' development, ... rather than the product of specifically Anglo-Saxon cultural determinants." But the unique aspect here is that these hymn-tunes are not developing into a refined art form, but growing away from one.

17 Ibid., p. 544.
CHAPTER VI

CONCLUSION

The gravest pitfall for an analytical study of music such as the present one is the tendency, all too easy to slip into, for the analyst to expect his evidence to be what he wants it to be. This is a fault which may be found to be a weak point of a large amount of literature on the topic of melody. The most common safeguard against this pitfall is the limitation of the scope of an analytical model or systematic theory. As was mentioned at the beginning of Chapter I, most studies of melody limit themselves to a particular style, which avoids the problem of dealing with incongruent examples but also limits each mode of analysis to one general style.

In presenting the analytical model of the acoustic melodic formula, this study has attempted to avoid repeating the error of contrived interpretation in two general ways. The first way stems from the consideration of the acoustic melodic formula only as a model for the tonal organization of melody. It is, as such, a tool by which the analytical description of a melody or melodic style may be developed, but it is not meant to be, in itself, a universal description of all European and Asian melody. The most useful
The application of the formula is not in demonstrating how many melodies between Spain and Japan match it (though many do), but in demonstrating in what ways various sample melodies are different from it: some types of melody depart from the model by, for example, having structural intervals derived from a theoretical scale, while other types of melody add to the model, so to speak, by having numerous auxiliary tones or transposing the structural intervals.

The model of the acoustic melodic formula provides a common standard by which the many diverse musical styles of Europe and Asia may be compared, but again, it provides only a basic reference and common terminology for the comparative discussion of melody. It would be an abuse of the formula to use it to minimize the unique characteristics of the many traditions of folk song, art music, and religious chant in Europe and Asia.

The second way by which this study has avoided making forced interpretations is the constant reference to the analytical studies of melody by the major scholars in the various fields of Asian and early European melody. The fact these scholars, representing a large number of nationalities and specializations, have repeatedly cited the tetrachord as a basis of melody serves to demonstrate that the model of the acoustic melodic formula is a consensus of opinion rather than a forced interpretation.
If the acoustic melodic formula is a worthwhile tool for the analysis of melody, it presents certain implications about the nature of melody which may require the revision of commonly held concepts of melody. For example, the analyses in this dissertation invite the reader to rethink the definition of melody: is melody a succession of single tones? Or should there be more consideration of tonal hierarchy in the description of melody? And what of the pentatonic scale? Is it to be defined as tonal degrees 5-6-1-2-3 or 1-2-4-5-6? Why should it be compared to the major scale at all?

The acoustic melodic formula also invites the reassessment of certain traditional ways of analyzing melody. For one, interval counting deserves rethinking. It is a common analytical procedure to describe melody with the number of ascending and descending seconds, thirds, fourths, and other intervals. But this mode of analysis is only justified in an idiom where melody is a succession of equal tones. In melody composed of a tonal hierarchy, the intervals between the structural tones should be stated first, and the intervals of any embellishments stated secondly and in terms of the structural intervals. Similarly, the analysis of ranges in a melodic style should be done more exactly: a melody with a range of a sixth may have structural tones a sixth apart, or it may have a structural fourth with auxiliary tones above and below it.
The acoustic melodic formula invites even a reexamination of the origin of melody. As was discussed in the first part of Chapter IV, it has been widely thought that melody began in primitive culture as simple two and three note singing. But the studies of recent scholars have shown that florid melodies of extended range are known in the most archaic of cultures: consider the Mongolian "long song" and the Jewish chant at the beginning of Chapter III, for example. Indeed, much research in Asian melody now works from a basis of showing the shared elements in primitive and art music, not their differences.

The foregoing questions show that the model of the acoustic melodic formula may be used in searching for meaningful statements on the nature of melody. As a tool, it invites use in a wide variety of applications to determine the extent of its effectiveness. It is hoped that its use will guide scholarship to a more exact understanding of the nature of melody.
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