

# SOUND REASONING

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# Sound Reasoning

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**C O N N E X I O N S**

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## Table of Contents

<b>Sound Reasoning: A New Way to Listen</b>	1
<b>How Music Makes Sense</b>	3
<b>Listening Gallery: How Music Makes Sense</b>	15
<b>Musical Emphasis</b>	19
<b>Listening Gallery: Musical Emphasis</b>	29
<b>Musical Form</b>	33
<b>Listening Gallery: Musical Form</b>	37
<b>Expository and Developmental</b>	39
<b>Listening Gallery: Expository and Developmental</b>	47
<b>Overall Destiny</b>	51
<b>Listening Gallery: Overall Destiny</b>	55
<b>Time's Effect on the Material</b>	59
<b>Listening Gallery: Time's Effect</b>	71
<b>Summary: A Quick Guide for Listening</b>	75
<b>Making Music Modern</b>	79
<b>Listening Gallery: Making Music Modern</b>	95
<b>Conclusion: What is Music Trying to Express?</b>	97
<b>1 Part II: Hearing Harmony</b>	
1.1 Hearing Harmony: What is Harmony?	99
1.2 Harmony in Western Music	100
1.3 Expressing Harmony	101
1.4 Listening Gallery: Expressing Harmony	104
1.5 Harmonic Rhythm	105
1.6 Listening Gallery: Harmonic Rhythm	106
1.7 Cadences	108
1.8 Listening Gallery: Cadences	109
1.9 The Tonic	110
1.10 Circular and Linear Progressions	111
1.11 Listening Gallery: Circular and Linear Progressions	112
1.12 The Major-minor Contrast	114
1.13 Modes and Scales	115
1.14 Hearing the Mode	117
1.15 Listening Gallery: Hearing the Mode	118
1.16 Tonic, Mode and Key	121
1.17 Listening Gallery: Tonic, Mode and Key	122
1.18 Music Within a Key	123
1.19 Listening Gallery: Music Within a Key	125
1.20 Postponed Closure	127
1.21 Listening Gallery: Postponing Closure	129
1.22 Chromaticism	130
1.23 Listening Gallery: Chromaticism	132
1.24 Dissonance	134
1.25 Leaving the Key	137

1.26	Harmonic Distance .....	139
1.27	Modulation .....	140
1.28	Harmonic Goals .....	142
1.29	The Return to the Tonic .....	144
1.30	Final Closure .....	146
1.31	Listening Gallery: Final Closure .....	148
1.32	Reharmonizing a Melody .....	149
1.33	Listening Gallery: Reharmonizing a Melody .....	150
1.34	Conclusion .....	151
	Solutions .....	153
<b>2</b>	<b>Part III: The Language of Transformation</b>	
2.1	Part II: The Language of Transformation .....	157
2.2	Musical Identity .....	158
2.3	Maintaining Identity .....	167
2.4	Building on Identity .....	168
2.5	Building on Identity through Fragmentary Repetition .....	179
2.6	Listening Gallery: Building on Identity .....	186
2.7	Speaking the Language of Transformation .....	190
2.8	How Identity Shapes Form .....	191
	Solutions .....	197
	<b>Glossary</b> .....	199
	<b>Index</b> .....	200
	<b>Attributions</b> .....	203

# Sound Reasoning: A New Way to Listen<sup>1</sup>

IMPORTANT: You must have the latest version of Macromedia's free Flash plugin<sup>2</sup> to play the musical examples. The course works best using Internet Explorer 6<sup>3</sup> on Microsoft Windows, Apple's Safari<sup>4</sup> on Macintosh OS X, or Mozilla<sup>5</sup> on any platform. If you experience difficulties, please contact our technical support<sup>6</sup>.

Music is designed to express itself completely in sound. At its greatest, it creates a particularly concentrated, gripping and all-enveloping experience. It is able, with its transient presence, to create a sense of loss, longing or renewal, and to involve us emotionally in its destiny.

**Sound Reasoning** is designed to help you listen. This course encourages you to be self-reliant—to get up close to the music, without mediation or interference. Too often, listeners may feel that they need pre-concert lectures, program notes and other verbal explanations to fully appreciate a musical work. These certainly may enhance and supplement one's enjoyment. But, ideally, a musical performance is a direct conversation between performers and listeners. No matter what your knowledge or training, you should be able to enjoy music with the fullness of your thoughts, should be able to explore and interpret it with confidence. The fundamental premise of this course is that, if you listen attentively and think constructively about what you are hearing, your awareness will prosper and your direct connection to the music will thrive. The course assumes little or no prior musical background. The ability to read music is not required. A minimum of musical terminology will be invoked. When it is necessary, all terms are defined in a glossary easily accessible by hyper-link. Most importantly, musical examples are interpolated directly into the text, making it easy to evaluate all the concepts that are introduced.

Music's sounds lack literal or fixed meanings: as such, the experience of a musical work is a very subjective one. This course will not teach what to think. It will show how to think, to arrive at your own balanced and carefully considered opinions. A subjective perspective is strongest when it is built upon objectively verifiable observations. You will learn to develop a concrete understanding of the music's progress. The poetry and conviction of your interpretation will grow out of this concentrated hearing. You will also have the confidence to test others' views against your own perceptions.

Our musical awareness now stretches further back historically and wider geographically than ever before. It is important to be prepared for music both familiar and unfamiliar. Conventional musical training usually begins with a strong grounding in the elements, conventions and terminology of the classical repertoire. The risk of that approach is that it often leaves listeners at a loss in the face of music where these terms and conventions no longer apply. **Sound Reasoning** addresses this problem by focusing on style-transcendent principles. The concepts explored in this course apply to any piece of music, no matter when it was written. Composers of different historical periods and traditions have dealt with these concepts in different ways. But the concepts themselves are timeless: They are the issues with which any piece of music is engaged.

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<sup>1</sup>This content is available online at <<http://cnx.org/content/m11466/1.23/>>.

<sup>2</sup>[http://www.macromedia.com/shockwave/download/download.cgi?P1\\_Prod\\_Version=ShockwaveFlash&application/x-shockwave-flash](http://www.macromedia.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash&application/x-shockwave-flash)

<sup>3</sup><http://www.microsoft.com/windows/ie/downloads/ie6/default.asp>

<sup>4</sup><http://www.apple.com/safari/download/>

<sup>5</sup><http://www.mozilla.org>

<sup>6</sup>[techsupport@cnx.rice.edu](mailto:techsupport@cnx.rice.edu)



Each concept is illustrated with examples both from the classical and modern repertoires of the Western tradition. These repertoires are often segregated from one another. Presenting them side-by-side will help illustrate the continuity of musical thought. It will demonstrate how music of any time and any place may explore music's basic resources of resonance, motion and design. It will also help to prepare and encourage listeners to be active and curious explorers, prepared to greet both the known and the unfamiliar with engagement and insight.

One of the defining features of a musical performance is that, once it begins, it is unstoppable: Unlike a book, it is not possible for the listener to pause, review passages, or change the pace of unfolding. For these reasons, listening to music requires a very special kind of focus.

Conventional musical attempts to develop this focus by beginning with the smallest elements of music—chords, scales, melodies and phrases—and eventually building into questions of the larger musical form. The risk of this approach is that it conditions listeners to focus primarily on the moment-to-moment progress of the music: if the sounds are surprising or unconventional, listeners may easily get easily get thrown into confusion and lose track of what is happening. **Sound Reasoning** takes a "top down" approach to listening: It will show you how to stretch your awareness so that it takes in the full expanse of a composition. Details will then be contemplated with respect to how they contribute to the developing form. The advantage of this approach is that you will no longer be thrown off or disengaged by puzzling or unexpected sounds. No matter how unusual or unusual the music, you will be able to maintain your concentration and actually experience the entire work.

Intuition and analysis are often regarded as opposing and incompatible. Analysis is felt to fight spontaneity and deplete one's enjoyment. This is an unfortunate and misleading dichotomy. Intuition is speeded up thought: It is reasoning that occurs too rapidly for us to be able to articulate it to ourselves consciously. The purpose of analysis is to train our intuition, so that our visceral responses arise from the most comprehensive possible perceptions and understanding. At first, you may have to study musical concepts very deliberately; over time, however, these concepts will become part of your intuitive framework. Done properly, analysis strengthens our intuition and deepens our enjoyment.

Part of the purpose of the Connexions project is to invite scholars to provide additional examples, both from within the classical and modern repertoires, but also from jazz, folk music, music of other traditions, and popular music. Ideally, a large sampling of repertoires and styles will help demonstrate the reach and relevance of the concepts we will discuss.

Each module presents a particular topic, illustrated with musical examples. A "listening gallery" follows, in which the student is asked put the concepts into practice by interactively analyzing musical examples. Please feel encouraged to listen to the examples as many times as you need.

Listeners sometimes shy away from highly unfamiliar music. **Sound Reasoning** will show how much can be gained even at a first hearing. If we are attracted to the music, we will return to it for further, ever-deepening listenings. When we meet someone new at a party, a whole life is concealed from us. An initial conversation may inform us about the person's history, outlook, and character but there are many discoveries to be made. Many years later, we may look back at that first encounter and realize how little we yet knew, how many revelations would occur later. So it is with listening to music. It is impossible to develop a relationship with a piece of music without a first hearing; it is impossible to come to love something if we are not first prepared for it to be new. **Sound Reasoning** is designed to help you cultivate a lifelong intelligent and passionate connection to music.

# How Music Makes Sense<sup>7</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

In order to more fully appreciate music—any music, familiar or unfamiliar—let us begin by considering music from the “ground up,” free from the constraints of a particular era or style. What is music and how does it make sense to us?

**Music is a time-art:** It needs time to unfold. Whereas it is possible to have an instantaneous view of a painting, it is not possible to have an instantaneous hearing of a piece of music. We can all remember those electrifying moments when we round a museum corner and, suddenly, a favorite Rembrandt or Picasso bursts into view: We can take in the entire canvas in a single glance. Music does not offer such short cuts: There is no way to hear a favorite musical work other than to listen all the way through.

**Music is ephemeral.** A painting or sculpture exists in concrete physical form. When the lights are turned off in the museum, the painting is still there. But music is a performance art: Each moment is temporary, washed away by the next. A sound exists in its precise “now,” and then vanishes. Once the performance is over, the music is gone.

**Music is unstoppable in time.** Like music, fiction is a time-art. But the reader is in control of the pacing: He or she may read the book in a single sitting or over the span of several months. In contrast, a musical performance is not meant to be interrupted; the pacing is out of the listener's control. Furthermore, the pages of a novel are all accessible at any time: The reader may review passages at will—meditating on the meaning of an ambiguous paragraph or looking back to confirm an important clue. The reader may even give into the temptation to skip ahead to the ending. No such luxury exists at a concert. You can't raise your hand and say, “Forgive me, Maestro, I didn't understand that last passage” and have the maestro reply, “Yes, you in the tenth row, no problem, I'll take it over again from measure nineteen!” Music rushes by, unimpeded by the listener's questions, distractions or desire to linger.

Finally, **music is abstract and non-verbal.** The meaning of a word may be colored by context; but there is has an enduring, stable meaning, which any of us can look up in the dictionary. If I use the word “egg” as a metaphor for birth or renewal, the metaphor only succeeds because you and I share a common definition. On the other hand, musical sounds do not have literal or fixed meanings. Musical sounds may evoke moods or images, may suggest yearnings, loss, or surprise: But these interpretations are far more subjective and open-ended. You can never say “Please get me a soda from the 7-11” in abstract musical sound. Music is not designed to be that literal. Although music is often referred to as a “language,” its sounds are never anchored to any specific meaning.

Thus, music is abstract and non-verbal art-form, unstoppable in time. Under those conditions, how is it possible for music to be intelligible? When you think about it, it's quite a challenge! Music places tremendous pressure on the listener: It asks him or her to follow an argument that is racing by, made up of impermanent sounds with no fixed meaning.

The answer to this question is extraordinarily important, because it transcends all questions of era or style. We believe with all of our hearts that music speaks to us. But how? It is invisible and insubstantial; it is not referring to anything “real.” Theater and ballet are also time-arts: But theater uses words and ballet

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<sup>7</sup>This content is available online at <<http://cnx.org/content/m12953/1.22/>>.

has the human body as a frame of reference. What does music have to direct our attention and guide us through its narrative?

The answer is that **repetition** is the key to musical intelligibility. **Repetition** creates the enduring presence at the heart of a work's fleet, impermanent existence.

## The Power Of Consistency

Imagine that you are standing at a craps table in a casino. You don't know the rules, and are trying to learn the game through observation alone. You would notice certain consistencies: One player at a time throws two die, which must always fall on the craps table. Certain actions provoke certain reactions: If the shooter throws a two, the "house" always calls out "Snake eyes" and the shooter is replaced. Through careful observation, you could rapidly apprehend the rules. Not only that, you would soon become caught up in the game. You would never know what would happen next: Every roll would be unexpected; bets would be waged in surprising, shifting patterns. Yet everything that did happen would fall within comprehensible parameters.

Similarly, a music listener relies on consistency to understand what is happening. Many times, we do not consciously recognize these consistencies. A key part of appreciating music is to learn to become conscious of and articulate the most essential consistencies of a musical work.

What were to happen if the consistencies were suddenly broken? Suppose you are standing at the craps table, elbow to elbow with the other gamblers, calmly stacking your chips. A shooter steps forward and throws only one die, then two, then three. When he throws twelve die, everyone at the table throws their die all at the same time. You would pull your chips off the table: Its consistencies broken, the game would have become incomprehensible.

Similarly, if you were to change the basic premises of a piece of music in the middle, how would the listener be able to make sense of what happened? In craps, you would withdraw your bets; in music, you might withdraw your attention.

Consistency does not imply predictability or monotony. In any game, the consistencies must be flexible enough to allow for an endless variety of play. Consider the following example from baseball. Perhaps the strangest no-hitter of all time occurred in the 1920's: The opposing pitcher, the worst hitter on the team, hit a line drive to the gap and legged out a double. But, in rounding first base, he missed the bag and was called out on an appeal play; that erased his hit, turning it into an out. He and his teammates never mustered another hit. This no-hitter was so rare, it has only happened once in the history of baseball. Yet no rules were broken: Instead, the consistencies of baseball were stretched to allow something exceptional.

Similarly, the consistencies in a piece of music still leave plenty of room for the unexpected and the unusual. Composers often strive to see how far they can stretch their consistencies without breaking them. As an illustration, consider a classical theme and variations. The composer begins by presenting a theme. He or she then repeats the theme over and over, preserving certain aspects of the theme while varying others. Although each variation is unique, they share an underlying identity. In general, the variations tend to get farther and farther removed from the original. The later variations may be so disguised that the connection to the original is barely recognizable. Yet, like the rare no-hitter, no "rules" are broken: The marvel of these late variations is that the composer has managed to stretch the consistencies so far without actually violating them.

For instance, listen to the first half of the theme from Beethoven's *Piano Sonata in c-minor, Opus 111*.

### Example

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From this austere first statement, listen to how far Beethoven stretches his theme in this variation.

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Though the theme is still recognizable, its consistencies have been **stretched**: It is in a higher register. The texture is more complex, with a very rapid accompaniment. The melody is more flowing, with new material filling in the theme's original resting points. While staying true to the theme's identity, this variation pulls the theme unexpectedly far from its original starkness. Baseball manager Bill Veeck once said: "I try not to break the rules, but merely to test their elasticity." The same may be said of music's greatest composers.

Each listener's reaction to the Beethoven variation will be personal, the words and metaphors to describe it subjective. But, as subjective as these emotional responses may be, it is the stretching of the material that has called them forth. The transformations are readily accessible to the ear and can be objectively described: The variation is not lower than the theme, it is higher; it is not more restful, it is more active and continuous. Appreciating music begins with recognizing how much we are already hearing, and learning the ability to make conscious and articulate what we already perceive.

Repetition and pattern recognition underlies how we understand almost everything that happens to us. Physics might be described as an effort to discover the repetition and consistencies that underlie the universe. One of the powerful modern theories proposes that the basic element of the universe is a "string." The vibrations of these infinitesimally small strings produces all the known particles and forces. To string theory, the universe is a composition on an enormous scale, performed by strings. Continuity and coherence are created through the repetition of basic laws. Miraculously, out of a few fundamental elements and laws, enormous complexity, constant variety and an unpredictable future are created.

We ourselves are pieces of music, our personal identities created through an intricate maze of repetition. Every time we eat and breathe, new molecules are absorbed by our bodies, replenishing our cells and changing our molecular structure. Yet, though countless millions of molecules are changing inside us every minute, we feel the continuity of our existence. This sense of self that we all feel so tangibly is really a dazzling performance: The new molecules maintain our identity by constantly repeating our basic structures.

Thus, repetition lies at the heart of how we understand music, ourselves and our world. We have a great faith in the richness and significance of repetition. In listening to music, we rely on repetition as the bearer of meaning.

## Repetition of Different Sizes

Repetitions come in different sizes, from small gestures to entire sections.

The repeating element may be as brief as a single sound. For instance, Arnold Schoenberg's *Piano Piece, opus 19, no. 2*, opens with an "atomic" sound that repeats over and over.

### Example

Listen to the entire one-minute work. You will notice that, as everything changes around it, this repeating sound remains like a "beacon" of stability.

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More commonly, the repeating element is a short figure, often called a **motive**.

**Example**

Here is the famous motive of Beethoven's *Symphony No. 5*.

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In the opening phrase, this short figure is repeated eleven times, with greater and greater intensity:

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**Example**

In the "Anvil Chorus" of Wagner's *Das Rheingold*, the short figure is a rhythmic pattern. In this brief excerpt, the rhythmic motive is repeated six times as the orchestra builds in intensity on top of it.

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But repetition of longer units can occur. A **phrase** is a complete musical thought; it is often compared to a sentence. The opening phrase of Mozart's *Symphony in g-minor* has a lot of internal repetition. But it also creates a longer musical statement that is repeated, sinking slightly in pitch the second time.

**Example**

Here is the phrase by itself:

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Here is the phrase with its repetition:

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Notice that, in the approximately the same amount of time that Beethoven (Example ) is able to repeat his motive eleven times and Wagner (Example ) six, Mozart (Example ) is only able to repeat his longer **phrase** twice.

**Example**

Here is a similar example from Igor Stravinsky's ballet *Pétrouchka*. Similar to the Mozart (Example ), notice that the phrase is repeated in a slightly new form.

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### Example

Even longer units of repetition can occur. A group of phrases can be joined together to create a theme; this might be compared to a paragraph. In the following example from Beethoven's *Piano Sonata, Opus 53, "Waldstein,"* the theme again contains a lot of internal repetition. But the theme itself is repeated in its entirety, with a more animated accompaniment.

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### Example

In this excerpt from Bela Bartok's *Concerto for Orchestra*, the theme is repeated with a more elaborate instrumental accompaniment.

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### Example

Finally, even a complete section of music can be repeated—a scale that might be likened to a chapter. This is what happens in Luciano Berio's brief folk song, *Ballo*.

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Thus, repetition can occur in a variety of sizes, from "atomic" elements to longer time-spans.

## Local and Large-scale Repetition

Repetition is often local and immediate. But repetition, especially of larger units, can occur after intervening music has taken place.

### Example

For instance, in Beethoven's *Bagatelle, Opus 126, no. 4*, the following section occurs:

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After intervening music, the entire section is repeated exactly and in its entirety. The excerpt picks up at the transition to the return:

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When a repetition occurs after intervening music, we will call it a **recurrence**. The module "Time's Effect on the Material" (Section ) is devoted to the study of recurrence.

Thus far, we have seen that musical repetition can occur in different sizes and over different time-spans, from local to large-scale. We have also seen that smaller repetitions can be "nested" inside of larger ones: Notice, for instance, how the section from Beethoven's Bagatelle (Example ) has internal repetition of short patterns and longer phrases, and also eventually recurs in its entirety.

## Maximizing the Minimum

In popular music—as well as children's songs—repetition is often literal and direct. This makes the music more readily accessible and immediately intelligible.

### Example

For instance, in this folk song sung by Pete Seeger, a short musical idea is repeated over and over exactly the same—sixteen times in a mere thirty seconds. On top of the quickly cycling music, Seeger presents a rapid fire list of animal names...

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What distinguishes classical music from most pop music is that, in classical music, the repetition is more frequently **varied** and **transformed**. This makes the repetition flexible, capable of assuming of many forms and moods. When Elizabeth Barrett Browning writes "*How do I love thee—let me count the ways/I love thee to the depth and breadth and height my soul can reach...I love thee to the level of every day's most quiet need....I love thee freely, I love thee purely,*" she is using varied repetition to make her point. Similarly, one of the guiding principles of art-music is **repetition without redundancy**. The music will repeat its main ideas, but constantly in new ways.

In the popular "South Beach Diet," dieters are at first restricted to a very limited regimen of foods: no bread, fruit, alcohol or sugar. The challenge of the diet is to create a varied menu from such a circumscribed list of ingredients. Otherwise, the dieter will begin to stray. So, a lot of effort and inventiveness goes into designing recipes that makes the daily staples lively and tasty.

In classical music, the goal is similarly to **maximize the minimum**. That is, the goal is to take a limited number of ingredients and create the greatest possible variety. A composer such as Beethoven or Bartok can take just a few basic elements and create the musical equivalent of a complete meal of soup, main course, salad and dessert—all with distinctive flavors, so that you sometimes can't even recognize the presence of the same ingredients in every recipe.

Let us study the concept of **varied repetition** in several works.

### Example

The basic pattern of Bach's *C-Major Invention* is the following:

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This basic pattern is repeated over and over again throughout the piece, but in constantly new forms.

For instance, Bach plays the basic pattern in different **registers**:

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---

Bach begins the basic pattern on different pitches:

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Bach turns the pattern upside down:

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---

Bach **fragments** the theme, dwelling on different segments of it.

In the next sample, he takes the first four notes and plays them at half-speed

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Here, he takes the **last** four notes, and extends them into an exciting rising figure

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---

He changes the groupings of the basic pattern, sometimes having several versions of the entire pattern in succession:

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Finally, he changes how the pattern is echoed between the hands. Sometimes, the left hand leads:



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Sometimes, the right hand leads. Notice, in this example, that Bach flips the basic pattern upside down and right side up in alternation.

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Now, please listen to the Bach: Invention in C-Major in its entirety.

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[http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Bach\\_Invention1\\_complete.mp3](http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Bach_Invention1_complete.mp3)

---

All of these flexible repetitions are beautifully coordinated, so that the piece creates a clear opening, middle, climax and ending. The fact that the basic pattern occurs in every measure creates **consistency**. The fact that it rarely occurs the same way twice contributes to the music's momentum and dynamism. The *C-Major Invention* is thus a case study in repetition without redundancy.

### Example

In Frederic Chopin's *Prelude in A-Major*, the basic pattern is a rhythm:

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That rhythm occurs identically eight times. Here is the first time it is played.

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The stability of its rhythmic pattern gives the work consistency. At the same time, the music moves and progresses thanks to the **variety** of melody and harmony. Listen to how the pattern underlies the following examples:

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Now, listen to the Chopin *Prelude* in its entirety.

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[http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Chopin\\_Etude\\_complete.mp3](http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Chopin_Etude_complete.mp3)

Out of the eight times the rhythmic pattern is played, it only occurs the same way twice. As in the Bach (Example ), **varied repetition** helps to make the music both intelligible and dynamic.

### Example

The following pattern accompanies the voice in Stravinsky's *Akahito* from his "*Three Haiku Settings*":

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[http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Stravinsky\\_Akahito\\_1.mp3](http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Stravinsky_Akahito_1.mp3)

In the Chopin (Example ), the rhythm was repeated exactly, but the pitches changed. In the Stravinsky (p. 11), **both** the rhythm and the pitches are repeated: thirteen times in all in this short piece!

So how is variety created? In this case, as the pattern is repeated over and over, an ever changing layer is **superimposed** upon it. It is as if the basic pattern is "bombarded" in different ways, disguising its reappearance.

The first four times the pattern is played, it alone accompanies the voice.

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But the fifth time, the new layer is added:

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From then on, the added layer is constantly evolving. You will be able to recognize the presence of the underlying constant pattern, but its reappearance is camouflaged by the changing layer on top of it.

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Now, listen to *Akahito* in its entirety:

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[http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Stravinsky\\_Akahito\\_complete.mp3](http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Stravinsky_Akahito_complete.mp3)

In Bach (Example ) and Chopin (Example ) examples, the basic pattern is treated **dynamically**: Almost every reappearance is new in some way. In the Stravinsky (Example ) example, the basic pattern itself is much more static. Yet the music never sounds the same because of the music superimposed on top of it is always changing. Thus, the goal of "repetition without redundancy" is accomplished in a new way.

### Example

In his work *Piano Phase*, Steve Reich takes Stravinsky's procedure (Example ) and goes one step further: Just like Stravinsky, he holds his basic pattern completely static. Just like Stravinsky, he superimposes an added layer: But, this time, the added layer is the basic pattern itself!

The musical material of Steve Reich's *Piano Phase* for two pianos consists of the following pattern.

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In *Piano Phase*, the first player remains absolutely fixed, repeating the basic pattern over and over again. The second player plays exactly the same pattern, but gradually shifts its alignment so that it falls more and more out-of-phase with the first player. As the second player shifts alignment, new resultant patterns are created.

As an analogy, imagine that you had two identical panels, each made of strips of colored glass. At first, you line up the panels perfectly and shine a light through them. The sequence of colors in the panels would be projected on the wall: Let us say it is blue, yellow, red, yellow, blue. Then, you keep one panel fixed and slide the panel slightly over: In the new alignment, the red in the first panel is aligned with the blue of the second, the blue with the yellow, etc. When you shine a light through the panels, you get a new sequence of colors on the wall: purple, green, etc. Colors you've never seen before suddenly appear! As you can imagine, every time you shift one strip over, the resultant colors change. With startling efficiency, you can create constantly new patterns on the wall just by changing how the panels are aligned.

Here is how the music sounds when the two pianos begin in alignment.

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A little while later, the second pianist shifts the basic pattern slightly out of alignment.

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Later still, the second pianist shifts the pattern further and further out of alignment.

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The farther out of alignment the two pianos get, the harder it is to recognize the underlying pattern. But ask yourself the following: Did the pianos change speed? Did the length of the pattern cycle change? Did the pianos play in a new register or at a different volume? When you think about it, you will be able to sense the steadfastness of the basic pattern.

Here is one more example of the pianos out of alignment.

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Now, listen to this extended excerpt from *Piano Phase*. When you listen to the excerpt, you will notice that, when the second pianist shifts alignment, there is a brief "blurry" transition passage; then, the new alignment is established. The 3-minute excerpt will take you through the first three changes of alignment.

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Reich's method uses very minimal means to achieve the goal of varied repetition. He manages to create gradual variety without changing the register, loudness or density of the pattern. Furthermore, unlike the other examples, Reich is very patient in his presentation: He allows each stage of the process to persist, repeating over and over again, before shifting to the next. As a result, Reich's piece is more meditative and hypnotic than the other works; it has more in common with the stable repetition of pop music. However, Reich is still stretching his material by maximizing the minimum: Eventually, the work explores every possible superposition of the basic pattern with itself.

Composers are often divided up by era and style: Bach (Example ), Chopin (Example ), Stravinsky (Example ) and Reich (Example ) would rarely be grouped together. However, beneath their unique personalities and styles, these composers are all striving to create musical intelligibility through **varied repetition**. In the examples above, each has found a different way to achieve this underlying goal.

Varied repetition is not only a guiding principle in Western art-music. In a jazz work, a pattern such as the famous "twelve-bar blues," will provide an underlying consistency on top of which the band will create ever-changing, spontaneous improvisations. In an Indian raga, an underlying rhythmic pattern, called a **tala**, creates the framework for elaborate improvisations. Music sustains itself, evolves and spans the globe because of the richness of possibilities created by **varied repetition**.

## Repetition and Recognition

Listening to explicit, literal repetition is like eating a simple carbohydrate: It is easily digested and quickly absorbed. That is why popular music has so much literal repetition: Its success depends on making an immediate impact. On the other hand, listening to transformed repetition is like eating a complex carbohydrate: It takes longer to digest. More of our attention is engaged: What changed? By how much? How fast did it happen? How long will it persist in the new form? Observations lead to interpretation: Why did it change? What are the consequences of what happened?

More and more, nutritionists are emphasizing that complex carbohydrates are healthier for our bodies. Similarly, transformed repetition may be healthier for our musical minds: It demands greater concentration, more astute observations and more careful reasoning—in short, more active listening. Learning to recognize and evaluate transformed repetition is a crucial aspect of music appreciation.

## Conclusion

Because music is an abstract, non-verbal time-art, repetition lies at the heart of how music makes sense. In pop music, the repetition tends to be more literal, while in classical music, it is often varied and transformed. As much as composers are often searching for new sounds and instrumental combinations, they are also inventing new means of building repetition.

Musical repetition offers powerful and suggestive models for how we understand the world and ourselves. The composer Mario Davidovsky, one of America's great living composers, has said that he listens to music not **with** knowledge but rather **for** knowledge, for guidance in understanding and grappling with life. Through its imaginative and ever-changing use of repetition, music constantly presents us with new ways to recognize the unities and consistencies underlying our experience.

# Listening Gallery: How Music Makes Sense<sup>8</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

The following short works or excerpts are each based on a single pattern that is repeated throughout the work.

These terms will help you answer the questions about how the basic patterns are varied.

**Definition 1: Accompaniment**

The support underlying a melody. For instance, in a typical show tune, the singer performs the melody, while the band provides the accompaniment.

**Definition 2: Contour**

Whether the basic pattern is played right side up or upside down

**Definition 3: Density**

How many notes are played at the same time. For instance, if a pianist plays a chord with all ten fingers, that sound is of higher density than if she or he were to just play with a single finger.

**Definition 4: Dynamics**

The loudness of the music

**Definition 5: Fragmentation**

Smaller segments of the basic pattern are repeated, rather than the whole

**Definition 6: Orchestration**

The instruments that are playing the pattern.

**Definition 7: Register**

How "high" or "low" the pattern is played. Men sing in the low register, women in the upper. The pianist's left hand generally plays in the low register, the right hand in the upper.

**Definition 8: Speed**

How fast the pattern is played

**Definition 9: Grouping**

The number of notes in a pattern. For instance, the pattern "da-da-dum, da-da-dum, da-da-dum" consists of a series of three note groupings, whereas "da-da-da-dum, da-da-da-dum, da-da-da-dum" is made up of four note groupings. "Da-dum, da-da-da-dum, da-da-dum" consists of mixed groupings.

**Exercise 1**

Listen to Bach's *Invention no. 14 in B-flat Major*. This media object is an audio file. Please view or download it at

<[http://music.cnx.rice.edu/Brandt/sense/Bach\\_Invention14.mp3](http://music.cnx.rice.edu/Brandt/sense/Bach_Invention14.mp3)>

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<sup>8</sup>This content is available online at <<http://cnx.org/content/m12954/1.9/>>.

In the following list, mark **all** of the ways that Bach uses to vary the repetition of his basic pattern:

(select all that apply)

- a) Register
- b) Contour
- c) Density
- d) Speed
- e) Fragmentation

### Exercise 2

From the following list, what **most** contributes to varying the repetition in Chopin's *Prelude No. 23 in F-Major*? This media object is an audio file. Please view or download it at

<[http://music.cnx.rice.edu/Brandt/sense/Chopin\\_Prelude23.mp3](http://music.cnx.rice.edu/Brandt/sense/Chopin_Prelude23.mp3)>

(select one)

- a) Speed
- b) Dynamics
- c) Register

### Exercise 3

In the following excerpt from Gustav Holst's *The Planets*, the short melody is repeated fifteen times. How many times is the melody repeated **exactly** the same way? This media object is an audio file. Please view or download it at

<[http://music.cnx.rice.edu/Brandt/sense/Holst\\_Mercury.mp3](http://music.cnx.rice.edu/Brandt/sense/Holst_Mercury.mp3)>

(select one)

- a) 0
- b) 1
- c) 2
- d) 3
- e) 4
- f) 5
- g) 6
- h) 7

### Exercise 4

From the following list, mark **all** of the ways that Holst uses to vary the repetitions of the melody.

(select all that apply)

- a) Accompaniment
- b) Contour
- c) Dynamics
- d) Orchestration
- e) Speed
- f) Register

### Exercise 5

In Charles Ives' song *The Cage*, the piano accompaniment is extremely unified. Except for the unexpected chord at the word "Wonder," the accompaniment consists only of varied repetitions a single, complex chord-as a way of showing a leopard confined in its cage. This media object is an audio file. Please view or download it at

<[http://music.cnx.rice.edu/Brandt/sense/Ives\\_Cage.mp3](http://music.cnx.rice.edu/Brandt/sense/Ives_Cage.mp3)>

In the following list, mark **all** of the ways that Ives uses to vary the repetition of the chord:

(select all that apply)

- a) Speed

- b) Register
- c) Dynamics

### Exercise 6

Ligeti's *Musica ricercata* No. 1 is based on just a single note: Only the very last note is different! In the following list, mark **all** of the ways that Ligeti uses to vary the repetition of the single note.

This media object is an audio file. Please view or download it at

<[http://music.cnx.rice.edu/Brandt/sense/Ligeti\\_MusicaRicerca1.mp3](http://music.cnx.rice.edu/Brandt/sense/Ligeti_MusicaRicerca1.mp3)>

(select all that apply)

- a) Speed
- b) Density
- c) Dynamics
- d) Groupings
- e) Register

**FURTHER LISTENING:** Bernard Rand's "Le Tambourin" is a suite of orchestral pieces drawn from his opera about Vincent Van Gogh. In the movement "Sorrow," Rands creates repetition without redundancy by modeling his compositional method on a technique used by Van Gogh. In sketching his model, Van Gogh placed three sheets of paper on top of one another. His first, rather spare sketch left imprints on the pages beneath. He then removed the top sheet and repeated the process, adding more detail. He then performed the same operation with the third sheet, making it the most elaborate. Rands treats his music in an analogous manner: He presents an initial passage of music. He then repeats this music identically, but adds new details. A third layer of music is then added to the first two. Thus, the music gradually accumulates in the same way as Van Gogh's imprints.





# Musical Emphasis<sup>9</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

Emphasis is very important in communication: It helps to establish what is of primary importance, versus what may be supporting or of secondary relevance.

Verbal communication contains a variety of strategies for creating emphasis. For instance, you're instructing your children on pool safety: Don't run next to the pool, no splashing in other people's faces, etc. But most important of all: No children allowed in the water without a grown-up. How would you emphasize this statement's import? You might repeat it several times; you might raise your voice; you might grab your child's hand and look him or her in the eye; you might sit the child, down, pause, and then speak.

How is emphasis created in a piece of music? Being able to recognize and interpret such emphases is essential to active listening. When a composer is communicating with you through music, it is very helpful to know what he or she considers to be of primary importance.

Musical emphasis may be created by duration, change and extremes. When emphases are coordinated to help illuminate musical structure, **rhetorical reinforcement** is created.

## Duration

Music is a time-art: Therefore, if you want to emphasize something in a piece of music, **make it last**. The longer something is before the listeners' ears, the greater the importance it assumes.

### Example

The ends of phrases in this Bach Chorale are emphasized through duration.

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### Example

**Duration** is used to emphasize the words "Rote für Rubine" in this movement from Arnold Schoenberg's *Pierrot Lunaire*.

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<sup>9</sup>This content is available online at <<http://cnx.org/content/m13861/1.7/>>.

**Example**

Repetition creates a **durational emphasis**. As in the Bach Chorale above, the ends of phrases are emphasized in Chopin's *Prelude in A-Major*, only this time the chords are repeated rather than held.

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**Example**

Repetition is used to create two powerful **durational emphases** in this excerpt from Igor Stravinsky's *The Rite of Spring*.

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Through repetition and other means of prolongation, durational emphasis can span a whole section of even an entire composition. Marriage is a form of durational emphasis: A favored relationship **outlasts** passing acquaintances. Similarly, in a piece of music, that which **endures** has a priority over that which is fleeting. A melodic idea, a rhythmic pattern, a particular texture all may be sustained throughout an entire work.

**Example**

A rhythmic pattern is prolonged throughout Frederic Chopin's *Piano Prelude in c-minor*.

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**Example**

In the third of Elliott Carter's *Eight Etudes and a Fantasy*, a single chord is held throughout the entire piece. The instruments constantly shift so that the chord is never voiced the same way twice. Nevertheless, throughout the subtle surface motions, one sound is clearly emphasized by duration.

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When listening to music, concentrate on what is most **persistent**. That which lasts longest is most essential; everything else is supporting. In a non-verbal, time-dependent art form, **duration** is the composer's primary means of emphasis.

## Change

Change is a second way of creating emphasis. We change into our pajamas to indicate we're ready to go to sleep. We all notice when the weather changes. If the lights go out, it will catch your attention. If the crowd noise suddenly rises at a sporting match, you will want to know what happened. Likewise, in music, a change—of register, texture, density, speed, dynamic, etc.—will create an emphasis.

**Example**

In the Berlioz: *Requiem*, the text “Hosanna in excelsis” is first sung by high voices and instruments. When low voices and instruments enter, the **change in register** creates an emphasis.

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**Example**

Similarly, in Kristof Penderecki’s *Threnody for the Victims of Hiroshima*, each string entrance is emphasized by a change in register.

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**Example**

**The greater the change, the greater the emphasis.** In the Finale of Tchaikovsky’s *Symphony No. 2*, the change in density is sudden and dramatic.

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**Example**

In “Danse de la fureur” from Olivier Messaien’s *Quartet for the End of Time*, a sudden change in dynamics creates a strong emphasis.

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The longer a particular state has been maintained, the greater the emphasis of the change.

**Example**

The opening of Alfred Schnittke’s *Concerto Grosso No. 1* begins with spare sounds played on the prepared piano (a piano with objects inserted inside the instrument to make its pitch more undefined). The solo violins enter quietly. But after such a long introduction, a well-marked emphasis is created by the change of instrumentation.

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## Extremes

*Extremes* are another powerful means of emphasis: A moment of silence stresses the solemnity of a memorial service; blaring sirens alert us to the dangers of a fire. A solitary figure on the street highlights the late hour; a standing-room only crowd draws attention to a show's success.

Musical extremes include fastest and slowest, longest and shortest, highest and lowest, loudest and softest, densest and most spare.

### Example

Beethoven's *Violin Concerto* begins with the following melody.

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Later, the soloist emphasizes the melody by playing it in an extremely high register.

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### Example

Gyorgy Ligeti's *Desordre* presents a melody in the upper register, echoed in the low.

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The melody is particularly emphasized when both of the pianist's hands play in a very high register.

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The **longer** an extreme is maintained, the more emphatic it is.

## Rhetorical Reinforcement

An emphasis on its own may catch our attention. When several emphases join together to mark an important structural moment, it creates a stronger accentuation that we will term **rhetorical reinforcement**.

### Example

Consider the relation between the film and score in a conventional Hollywood film: The role of score is to support the action. The score helps to **underline** significant moments in the film by being synchronized with them. If you're familiar with 007 films, you know who appears on screen at the end of this sound-clip:

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When James Bond has appeared, there was a change of texture, a steady pulse was established and new instruments entered. The film and music joined together to create a **united** emphasis. By virtue of its compounding of emphases, rhetorical reinforcement promotes **clarity**.

Opera and ballet often have a similar relationship between narrative and music.

### Example

The overture of Wolfgang Amadeus Mozart's **Don Giovanni** opens with stark chords.

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As the stage action begins, Don Giovanni murders the Commendatore, the father of one of his lovers. Many scenes later, Don Giovanni and his servant are scheming in a churchyard when the dead man's statue issues a warning. Don Giovanni blithely invites the statue to dinner.

The Don is celebrating later at the banquet when the statue of the Commendatore suddenly appears before him. The return of the stark chords—not heard since the overture—heralds the Commendatore's reappearance: Silence, and abrupt changes in texture and speed contribute to the emphasis. Music and narrative are aligned, creating a powerful dramatic arrival point.

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### Example

In Francis Poulenc's *Dialogue of the Carmelites*, a group of nuns are sentenced to death during the Reign of Terror. As the nuns are marched to the guillotine, they sing a chorale over a march-like rhythmic accompaniment. As each nun is executed, one singer drops out, finally leaving a single voice alone. The march-like rhythm and final female voice drop out with the fall of the blade: Once again, music and narrative are in perfect alignment.

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### Exercise 7

Just as music and story can be coordinated, so too can the various musical dimensions within an abstract musical work: Emphases created by duration, change and extremes can join together to mark significant landmarks. For instance, listen to the following excerpt from Beethoven's *Symphony No. 5*. The excerpt will stop on a particular note. In your opinion, is that note emphasized or not?

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(select one)

- a) The note is important relative to what has preceded it.
- b) The note is not important relative to what has preceded it.

**Example**

Rhetorical reinforcement is frequently used to highlight the beginning of a new section or the return of an important passage. Listen to the main theme of the first movement of Beethoven's *Symphony No. 2*.

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We will now fast forward to later in the movement. Do you recognize the return of the opening?  
 What rhetorically reinforces it?

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After an intense flurry of activity, the rhythm suddenly stopped. The texture and dynamics changed. The musical dimensions shifting in coordination signaled that an important formal arrival was taking place.

**Example**

The Finale of Bartok's *Concerto No. 1* begins with the following explosive theme.

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Once again, we will fast forward to later in the movement. Once again, do you recognize the return of the opening? What rhetorically reinforces it?

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Once again, a compounding of emphases marked the return: The rhythm stopped; there was a loud cymbal crash, followed by a dramatic change in volume and texture. *Rhetorical reinforcement* has created an unmistakable formal landmark.

## The Reinforcement of Extremes

When extremes reinforce each other, they create a particularly strong emphasis.

**Example**

In his *Symphony in D*, Cesar Franck uses extremes of volume and density to emphasize two appearances of his main theme. The theme is initially played softly and sparsely.

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It returns later, this time played loudly by the full orchestra.

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[http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/franck\\_symD\\_III.mp3](http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/franck_symD_III.mp3)

### Example

Similarly, in *Rituel*, Pierre Boulez introduces his primary theme in the solo oboe, with a sparse accompaniment.

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Later, the theme echoes between different instrumental groups, in a prolonged statement made powerful by its massive density and loud volume.

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## Musical Climax

When the greatest number of extremes coincides, a climax is created. A climax is the “most of the mosts.” It represents a work’s **maximum emphasis**.

### Example

The Finale of Igor Stravinsky’s *The Firebird* begins with the following theme:

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Stravinsky brings the work to a close by using maximum repetition, volume, density and speed—both fast and slow—to create a majestic emphasis.

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A climax typically highlights that which is **most essential**: It gives you the most direct, powerful statement of a work’s main idea.

### Example

In Alban Berg’s opera *Wozzeck*, the beleaguered soldier Wozzeck becomes convinced of his wife’s infidelity. He lures his wife to a deserted lake and stabs her. Throughout the scene, as Wozzeck is contemplating his wife’s murder, a fixed pitch hovers perpetually in the background. After Wozzeck



has slain his wife, Berg creates one of the most spectacular and climactic rhetorical reinforcements in music history: The fixed pitch swells in intensity until it consumes the entire orchestra. Emphases of duration, volume, register and density are all joined together. That which is most essential is given its strongest emphasis.

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## The Absence of Rhetorical Reinforcement

When a player for the home team hits a home run, the crowd rises to its feet cheering, music plays, the scoreboard flashes a replay: Strong rhetorical reinforcement occurs. But if a player for the visiting team hits a home run, the stadium is quiet: No one cheers, no sirens go off, no replays are shown. The fans refuse to acknowledge that an important event has occurred. There is an **absence** of rhetorical reinforcement.

Such equanimity is crucial when you play cards: If you are dealt four aces, it is important to maintain a “poker face,” betraying no hint of your good fortune.

Similarly, in music, it is possible for the rhetorical reinforcement to be weak or absent.

### Example

Listen to the opening of Schubert’s *Quintet in C for two violins, viola and two cellos*.

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Once again, we will fast forward to later in the movement. Do you recognize the return?

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You may have hesitated this time. Why? This time, the rhetorical reinforcement is much less emphatic.

At the opening, the strings move together in very slow values.

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At the return, the instruments **should** change speed, texture and dynamic together. But the first violin does not cooperate! Instead, it continues with its pattern from the **previous** section. Thus, a united emphasis does not take place: The first violin is **out-of-phase** with the other instruments, creating a weaker acknowledgment of the form.

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Whereas strong rhetorical reinforcement promotes **clarity**, weak or absent rhetorical reinforcement creates **ambiguity**. The degree of rhetorical reinforcement is one of the strongest measures of compositional intent. Schubert **could have** created a strongly articulated return. However, he chose to maintain a “poker face,” making the return less obvious. Why? This question can become a point-of-entry into a more in-depth study of the piece.

### Example

Climaxes depend on coordination between the musical dimensions. As a result, highly **unrhetorical** music will tend **not** to have a climax: The different dimensions are too out-of-phase from one another to create a clear structural alignment. In Morton Feldman’s *Why Patterns?*, the three players—flute, glockenspiel and piano—are instructed to proceed independently through the score. The synchronization of the players varies from one performance to the next; each time, the combination of the parts is unique. Under such conditions, rhetorical reinforcement and a reliable climax are impossible to produce. Feldman related this to the absence of perspective in Abstract Expressionist art: He wrote of “flattening the aural canvas” so that it lacked rhetorical peaks.

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## Conclusion

Duration, change and extremes are primary ways of creating emphasis in a musical composition. Being alert to such emphases—how they are created and what they are signaling—helps you to recognize significant musical events. When emphases are aligned to signal a formal landmark, **rhetorical reinforcement** is created. Strong rhetorical reinforcement promotes clarity; weak or absent rhetorical reinforcement promotes ambiguity.



# Listening Gallery: Musical Emphasis<sup>10</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

## Exercise 8

How is the phrase "Remember me" rhetorically reinforced in Dido's aria from Henry Purcell's *Dido and Aeneas*?

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(select all that apply)

- a) Duration: The words are repeated.
- b) Change: New instruments enter.
- c) Extremes: The singer reaches her highest note.
- d) Extremes: There are the longest pauses in the vocal line.

## Exercise 9

How is the following line of text rhetorically reinforced in Charles Ives' *Charlie Rutledge*? Check all that apply.

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"While Charlie Rutledge makes the third to be sent to his grave caused..."

(select all that apply)

- a) Duration: The singer's words are drawn out more gradually.
- b) Duration: The singer's words are repeated.
- c) Change: The singer changes from speech-like to full-voiced singing.
- d) Change: The singer is briefly left alone for the first time.
- e) Extremes: The voice reaches a high register, while the piano sinks to its lowest register.

## Exercise 10

How is the following line of text rhetorically reinforced in Charles Ives' *Charlie Rutledge*? Check all that apply.

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<sup>10</sup>This content is available online at <<http://cnx.org/content/m13862/1.4/>>.

Available for free at Connexions <<http://cnx.org/content/col10214/1.21>>

“Beneath poor Charlie died”

(select all that apply)

- a) Duration: The singer’s words are drawn out more gradually.
- b) Change: There is an extreme change of density.
- c) Change: There are changes of speed both before and after the text.
- d) Change: There is a change of texture. Instead of every syllable of the singer being synchronized with the piano, she singer is left alone to sing a portion of the text.
- e) Extremes: “died” is the longest sustained word in the song.

### Exercise 11

In John Harbison’s *Simple Daylight*, which phrase is treated as the climax of the song?

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(select one)

- a) “All but inarticulate cry”
- b) “Spoken over and over”
- c) “Wakes me”

### Exercise 12

In Exercise , how is the climax created?

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[http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/harbison\\_simple.mp3](http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/harbison_simple.mp3)

(select all that apply)

- a) Duration: The words are sung as longer values.
- b) Change: The rhythmic flow is interrupted.
- c) Change: Leading into this passage, the piano’s accompaniment becomes gradually more thicker, eventually reaching an extreme..
- d) Extremes: The voice reaches her highest note.
- e) Extremes: The piano plays in its highest register.
- f) Extremes: It is the loudest passage in the song.

### Exercise 13

In the following excerpt from Gustav Mahler’s *Symphony No. 4*, the intricate, boisterous opening section gives away, after a brief pause, to a contrasting section initiated by a lyrical cello melody.

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Later in the movement, both sections return. Which return is more strongly rhetorically reinforced—that of the opening section or the contrasting one?

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(select one)

- a) The opening section
- b) The contrasting section

#### Exercise 14

In Exercise , how is this return is more strongly rhetorically reinforced?

(select all that apply)

- a) The weaker return overlaps with the preceding section; the stronger return has a clear beginning, preceded by silence.
- b) The stronger return is emphasized by being played higher and louder.
- c) The weaker return is played in a much lower register.
- d) The weaker return presents only fragments of the original theme; the stronger return is more literal and complete.
- e) The weaker return is played at a much slower speed.

#### Exercise 15

After a slow introduction, Bela Bartok's *Concerto for Orchestra* introduces an agitated string melody. This leads to a contrasting theme, played by the oboe with a delicate string and harp accompaniment.

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In the second excerpt, the contrasting theme will return. How is its return rhetorically reinforced?

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(select all that apply)

- a) Duration: In preparation for the return of the contrasting theme, the music becomes very repetitive.
- b) Duration: The rhythm holds dramatically just before the contrasting theme enters.
- c) Change: There is a huge build-up in volume, followed by a dramatic drop-off.
- d) Change: There is a huge build-up in density, then a huge drop-off.
- e) Change: There is a change of primary instruments, from brass to solo wind and strings.
- f) Change: There is a change from multiple ideas simultaneously to a single idea.
- g) Change: The pulse is relaxed when the contrasting theme returns.

#### Exercise 16

Listen to "Orpheus Weeps" from Igor Stravinsky's ballet *Orpheus*.

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[http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/stravinsky\\_orpheus\\_1.mp3](http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/stravinsky_orpheus_1.mp3)

Which of the following sound clips do you consider to be most strongly emphasized throughout the movement?

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*(select one)*

- a) Sound Clip A
- b) Sound Clip B
- c) Sound Clip C

**Exercise 17**

In the most emphasized sound clip from Exercise , what is the principle means of emphasis?

*(select one)*

- a) Duration
- b) Change
- c) Extremes
- d) Strong Rhetorical Reinforcement

# Musical Form<sup>11</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

## Grasping the Whole Composition

Driving through a city for the first time can be very disorienting. Building after building catches your eye. You circle past a monument, then a fountain. Restaurants, hotels and shops fly past. Trying to absorb and remember all of these landmarks quickly becomes tiring. Was the town square before or after the park? Did you pass a museum? If you don't speak the language, an extra anxiety sets in. You try to decipher the street signs, negotiate the traffic. By the time you arrive at the hotel, you fall on your bed, exhausted.

Similarly, it is easy to get lost in the moment-to-moment progress of a piece of music: There are often too many details to remember, too many implications to contemplate. If the work is particularly dynamic, you may become overwhelmed with its rapid progress. If the musical language is unfamiliar, even one poorly understood sound may throw you into confusion.

In your visit to a new city, it is wiser to begin with an overview of the neighborhoods. First, you notice that you are traversing the old town, where the buildings are closely packed together and the streets narrow and winding. Then, you pass into the modern section, with sleek high-rises, set apart along straight thoroughfares. You don't need to speak the language; nor is there the pressure to remember facades or street-names. Later, you may revisit the old town on foot, discovering quiet alleys and ancient monuments. But, for now, you content yourself with a general sense of the city's layout: How large is the old town compared to the new? How much variety of architecture characterizes each neighborhood? This more patient, disciplined approach helps to orient your future explorations. It will be harder to get lost or overwhelmed when you have a commanding sense of the city's geography.

Similarly, the path to informed listening begins with a grasp of the whole composition. There are tremendous advantages to beginning with a commanding perspective: While details tend to pass by very quickly; the overall trajectory of the music unfolds more gradually, giving you more time to consider it. The significance of an individual gesture is often clearer when related to the work's overall destiny. And, while the immediate sounds are bristling with personality and may be difficult to grasp, the larger structure is often easier to hear accurately.

Thus, we will approach listening to a piece of music by moving from the whole into the details: We will begin by developing an awareness of the composition's form and destiny, then gradually sink into the details with a stronger sense of their relevance.

Musical form is the wider perspective of a piece of music. It describes the layout of a composition as divided into sections, akin to the layout of a city divided into neighborhoods.

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<sup>11</sup>This content is available online at <<http://cnx.org/content/m11629/1.13/>>.



Musical works may be classified into two formal types: A and A/B. Compositions exist in a boundless variety of styles, instrumentation, length and content—all the factors that make them singular and personal. Yet, underlying this individuality, any musical work can be interpreted as either an A or A/B-form.

An **A-form** emphasizes **continuity** and **prolongation**. It flows, unbroken, from beginning to end. In a unified neighborhood, wander down any street and it will look very similar to any other. Similarly, in an A-form, the music has a recognizable consistency.

The other basic type is the **A/B-form**. Whereas A-forms emphasize continuity, A/B-forms emphasize **contrast** and **diversity**. A/B-forms are clearly broken up into sections, which differ in aurally immediate ways. The sections are often punctuated by silences or resonant pauses, making them more clearly set off from one another. Here, you travel among neighborhoods that are noticeably different from one another: The first might be a residential neighborhood, with tree-lined streets and quiet cul-de-sacs. The next is an industrial neighborhood, with warehouses and smoke-stacks.

The prime articulators of form are **rhythm** and **texture**. If the rhythm and texture remain constant, you will tend to perceive an A-form. If there is a marked change in rhythm or texture, you will tend to perceive a point of contrast—a boundary, from which you pass into a new neighborhood. This will indicate an A/B-form.

Listen to the following examples. What is the form of each?

#### Exercise 18

What is the form?

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[http://cnx.org/content/m11629/latest/http://music.cnx.rice.edu/Brandt/musical\\_form/Schumann\\_\\_Piano\\_Quartet\\_in\\_F\\_major\\_\\_I.mp3](http://cnx.org/content/m11629/latest/http://music.cnx.rice.edu/Brandt/musical_form/Schumann__Piano_Quartet_in_F_major__I.mp3)

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*(select one)*

- a) A-form
- b) A/B-form

#### Exercise 19

What is the form?

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[http://cnx.org/content/m11629/latest/http://music.cnx.rice.edu/Brandt/musical\\_form/Bach\\_\\_Prelude\\_in\\_G\\_major\\_\\_WGBM.ogg](http://cnx.org/content/m11629/latest/http://music.cnx.rice.edu/Brandt/musical_form/Bach__Prelude_in_G_major__WGBM.ogg)

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*(select one)*

- a) A-form
- b) A/B-form

#### Exercise 20

Now consider a work in a less familiar style. What is its form?

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[http://cnx.org/content/m11629/latest/http://music.cnx.rice.edu/Brandt/musical\\_form/Boulez\\_\\_Notations\\_4th\\_Movement.ogg](http://cnx.org/content/m11629/latest/http://music.cnx.rice.edu/Brandt/musical_form/Boulez__Notations_4th_Movement.ogg)

---

*(select one)*

- a) A-form
- b) A/B-form

## Labeling the Forms

It is conventional to give alphabetic labels to the sections of a composition: A, B, C, *etc.* If a section returns, its letter is repeated: for instance, "A-B-A" is a familiar layout in classical music.

As the unbroken form, A-forms come only in a single variety. They may be long or short, but they are always "A".

As the contrast form, A/B-forms come in a boundless array of possibilities. There may be recurring sections, unique ones, or any combination of both. For instance, a **Rondo**—a popular form in Classical music—consists of an alternation of a recurring section and others that occur once each. It would be labelled A-B-A-C-A-D-A, *etc.* Many twentieth-century composers became fascinated with arch-forms: A-B-C-B-A.

An on-going form, with no recurrence whatsoever, is also possible: A-B-C-D-E... Any sequence of recurring and unique sections may occur.

### Example

How would you describe the following form? First, click when you hear a new section. Then, use the pull-down menu to label each section.

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[http://cnx.org/content/m11629/latest/http://music.cnx.rice.edu/Brandt/musical\\_form/Beethoven\\_\\_Sonata\\_no\\_13\\_opus](http://cnx.org/content/m11629/latest/http://music.cnx.rice.edu/Brandt/musical_form/Beethoven__Sonata_no_13_opus)

This movement is labeled as an A-B-A form. It opens with frantic, somber, rhythmically persistent music. The contrasting section has a lighter, more carefree feeling and a new prevailing rhythm. Finally, the opening section returns exactly.

## Conclusion

Understanding the layout of the city is crucial for exploring it: once you understand its topography, you know how to find its landmarks, where the places for recreation or business may lie. Similarly, determining the form of a piece will tell you a lot about it. If it is an A-form, your next focus will be on the work's main ideas, and how they are extended across the entire composition. If it is an A/B-form, your next investigations will be into the specific layout of sections and the nature of the contrasts.



# Listening Gallery: Musical Form<sup>12</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

For each exercise, click when you hear a change of section. Then, use the pull-down menus to label each section. An A-form requires no input. After you have listened to the example, "click for solution" to check your analysis.

## Exercise 21

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## Exercise 22

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[http://cnx.org/content/m11630/latest/http://music.cnx.rice.edu/Brandt/musical\\_form/Chopin\\_\\_Prelude\\_in\\_C\\_major.mp3](http://cnx.org/content/m11630/latest/http://music.cnx.rice.edu/Brandt/musical_form/Chopin__Prelude_in_C_major.mp3)

## Exercise 23

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## Exercise 24

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## Exercise 25

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<sup>12</sup>This content is available online at <<http://cnx.org/content/m11630/1.7/>>.

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[http://cnx.org/content/m11630/latest/http://music.cnx.rice.edu/Brandt/musical\\_form/Schumann\\_Piano\\_Quartet\\_in\\_D](http://cnx.org/content/m11630/latest/http://music.cnx.rice.edu/Brandt/musical_form/Schumann_Piano_Quartet_in_D)

# Expository and Developmental<sup>13</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

In order to listen with a larger perspective of a musical work, it is important to distinguish between **expository** and **developmental** passages.

The function of an expository section is to establish **identity**. Its goal is to make a musical material **memorable** and **recognizable**. "My name is Bond—James Bond" is an expository statement.

The following are examples of expository statements:

## Example

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## Example

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## Example

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Whereas an expository section shows what a musical material **is**, a developmental section shows what the material **can do**. Development sections are characterized by instability and rapid change; they **postpone rest**. 007 jumps from a plane and speeds down a mountainside on one ski, pursued by villains from every direction. This is an example of **development**.

The terms **exposition** and **development** are commonly used in classical music, to denote large sections where material is either introduced or rapidly transformed. However, the concept of **expository** or **developmental** may be generalized to any kind of music.

## Exercise 26

In the following excerpt from Beethoven: Violin Sonata No. 7, "Kreutzer," which comes first—an expository passage or a developmental one?

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<sup>13</sup>This content is available online at <<http://cnx.org/content/m13842/1.7/>>.

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Which comes first?

(select one)

a) Expository

b) Developmental

### Exercise 27

In this excerpt from Arnold Schoenberg's Fantasy for violin and piano, which comes first—the expository section of the developmental one?

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Which comes first?

(select one)

a) Expository

b) Developmental

## Distinguishing between the Expository and the Developmental

Stability facilitates recognition: That is why suspects in a police line-up are asked to stand still. In music, **expository statements** are usually “grounded” in some way: They are often repetitive; and they are often supported by a fixed, reliable accompaniment.

On the other hand, if a suspect is trying to escape, it is better to **keep moving**. In **developmental passages**, stability is undercut: Repetitions become more cursory and incomplete; fixed accompaniments are absent.

### Example

The opening of the fourth movement of Robert Schumann's Piano Quintet in E-flat Major is grounded by both extensive repetition and a steady accompaniment.

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In the following developmental passage, Schumann's theme is no longer anchored: The instruments enter in imitation, pushing the music towards new destinations. Notice that the original steady accompaniment is replaced by faster moving figures.

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### Example

As in the Schumann example, the opening of the second movement of Bela Bartok's String Quartet No. 2 is grounded by repetition and a steady accompaniment.

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Once again, in the following developmental passage, the music becomes more mobile and unrooted.

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As the above examples indicate, the pace of events speeds up in developmental passages. Thus, whereas **expository passages** allow the time for **complete statements**, **development passages** are characterized by **fragmentation**. **Fragmentation** enables the music's progress to accelerate. When you travel, you can't bring all of your belongings with you; instead, you bring just an overnight bag with a change of clothes. Similarly, you can't afford to carry a whole theme with you during a developmental passage: Taking the time to play the theme in its entirety would slow you down. Instead, you must travel "light," with just a fragment of the theme.

#### Example

The Finale of Mozart's Symphony no. 40 in g-minor begins with the following expository statement. Note how each half of the theme is repeated, increasing its stability.

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Later in the movement, Mozart creates a developmental passage based entirely on the upward motion with which the theme begins. Only fragments occur; the complete theme is never stated.

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#### Example

The fourth movement of Dmitri Shostakovich's String Quartet No. 2 introduces a long, lyrical theme, played several times in its entirety.

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In a subsequent developmental section, the theme is broken into fragments that get shorter and shorter: at one point, the theme is reduced to just two notes. As in the Mozart developmental passage, the complete theme is never stated.

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Other musical features help to differentiate expository and developmental sections. In expository passages, the primary activity is often concentrated in one instrument or register. In development passages, multiple instruments and registers may trade the musical ideas back and forth, in dialogue or competition.

**Example**

In the first movement of Mozart's Symphony No. 40 in g-minor, the violins introduce the primary theme.

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In a subsequent developmental section, the violins repeatedly play a fragment of the theme, gradually sinking in register. Suddenly, the music becomes far more turbulent as the fragment is traded between the violins and celli.

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**Example**

In the brief Intermède from Olivier Messiaen's Quartet for the End of Time, the main theme is initially presented fixed in register.

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As the theme is developed, fragments of the theme shift in register:

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Expository sections tend to be more predictable. On the other hand, development sections are often unpredictable and irregular, with abrupt changes of texture, dynamics, rhythm, etc.

**Example**

For instance, the Finale of Beethoven's Symphony No. 8 opens with a vivacious expository section, interrupted only by a few brief hesitations.

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In a later developmental section, the hesitations are exaggerated and disrupt the flow of the music.

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**Example**

In the fourth movement of Bela Bartok's String Quartet No. 4, each player takes a turn playing the plucked theme. Occasional chords underlie the theme's presentation.

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In a subsequent developmental passage, the chords are brought to the fore, becoming more forceful and abrupt. These and silences irregularly disrupt the music's flow. Only fragments of the theme are played, and the instruments alternate more rapidly.

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In expository sections, there is usually only one theme or musical idea presented at a time. In developmental sections, multiple themes may be presented simultaneously.

**Example**

Paul Dukas' The Sorcerer's Apprentice tells the story of a wizard's assistant (played by Mickey Mouse in Disney's "Fantasia") who, rather than clean his master's lair himself, furtively casts a spell that rouses the mops, pails and brooms.

As each tool is awakened, Dukas introduces a new theme:

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Unfortunately, the apprentice isn't able to command the tools. As chaos ensues, Dukas combines the two themes, creating a developmental pandemonium:

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**Example**

In Alban Berg's annotated score of the "Lyric Suite," the composer describes the second movement as a domestic scene in which his married love interest, Hanna Fuchs-Robettin, is playing with her two children. Each family member is given a theme:

Hanna's theme:

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Her son, Munzo:

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Her daughter, Dorothea, was known by her nickname, Dodo. Since “Do” is a singing syllable for the note “C” (as in “do a deer, a female deer” from The Sound of Music), Dodo is represented by repeated c’s in the viola.

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The peak of the movement is an argument between Munzo and Dodo that gets out of control. To depict this, Berg wrote a developmental passage that combines aspects of all three themes: Hanna’s lyrical melody is in the upper violin; Munzo’s dance-like theme and Dodo’s repeated notes are below. By the end of the excerpt, Hanna has finally quieted the children down:

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In conclusion, expository sections tend to be more straightforward and direct: one musical idea is usually presented at a time; the idea is presented in its entirety; it is usually played in a single instrument or register; the music’s progression is more predictable. In contrast, development sections are more mercurial and complex: multiple ideas may be presented simultaneously; ideas may be broken into fragments and shift rapidly between instruments and registers; changes and interruptions may be more abrupt and extreme.

## The Balance Between Expository and Developmental

### Example

Some music may be almost exclusively **expository**. Bartok’s brief Romanian Folk Dance no. 1 consists of an expository statement in two halves, each of which is repeated.

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### Example

In contrast, some music may be almost exclusively developmental: The music undergoes constant motion and transformation.

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The balance between the expository and the developmental is a crucial expressive feature. If you want a restful vacation, you'll plan to stay put as much as possible and minimize the time spent on the road. On the other hand, if you're up for an adrenaline rush, you'll plan some high-flying travel. Similarly, the greater the time spent in **exposition**, the greater the music's stability. The greater the time spent in **development**, the greater the music's unrest.

What if an exposition is highly charged? Will its development be calmer? The answer is "No:" Developmental passages always "up the ante." Someone fleeing from peril typically faces even greater dangers to escape. Similarly, the **development** of a highly charged material will tend to be even more intense.

#### Example

For example, the fifth movement of Alfred Schnittke's Concerto Grosso No. 1 introduces a frantic interplay between the two violin soloists, accompanied by the harpsichord. The string orchestra responds with a developmental passage that is even more animated and fervent. Soloists and ensemble alternate twice, dramatizing the contrast between the expository and the developmental.

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Thus, no matter what the particular mood or character of a work, the balance of the **expository** and the **developmental** is a revealing expressive feature.

#### Example

The balance between expository and developmental helps to create strong contrasts in Beethoven's Bagatelle, opus 126, no. 4. [See also: Musical Form (Section )] The A-section begins with a brief expository statement; but development soon predominates: The A-section is constantly roving, with abrupt silences and sudden changes in texture.

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In contrast, the B-section is almost exclusively **expository**: It is grounded throughout and very repetitive.

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In the end, Beethoven establishes a relative equilibrium between the expository and developmental by playing each section twice.

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**Example**

Expository and developmental passages are similarly contrasted in the second movement of John Harbison's Four Songs of Solitude. In the end, does Harbison tip the balance in favor of exposition or development? How does this contribute to your emotional reaction to the movement?

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When you are studying the itinerary for a trip, you want to know how long you will spend at your destinations compared to how long you will spend en route. Similarly, in the first few hearings of a work, try to identify **expository** versus **developmental** passages. How long does each type of passage last? The greater the amount of exposition, the more stable, simple and direct the music. The greater the amount of development, the more the music is restless, complex and ambiguous. Directing your attention to these structural features, rather than to fleeting details, will help you build a more comprehensive understanding of the music.

# Listening Gallery: Expository and Developmental<sup>14</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

## Exercise 28

Please listen to each pair of excerpts, and indicate which is expository and which developmental.

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[http://cnx.org/content/m13843/latest/http://music.cnx.rice.edu/Brandt/expository/rachmaninoff\\_piano3\\_1.mp3](http://cnx.org/content/m13843/latest/http://music.cnx.rice.edu/Brandt/expository/rachmaninoff_piano3_1.mp3)

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*(select one)*

- a) Excerpt 1 is expository; excerpt 2 is developmental.
- b) Excerpt 1 is developmental; excerpt 2 is expository.

## Exercise 29

Please listen to each pair of excerpts, and indicate which is expository and which developmental.

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<http://cnx.org/content/m13843/latest/http://music.cnx.rice.edu/Brandt/expository/>

*(select one)*

- a) excerpt 1 is expository; excerpt 2 is developmental.
- b) excerpt 1 is developmental; excerpt 2 is expository.

## Exercise 30

Please listen to the following short work. Which predominates—the expository or the developmental?

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<sup>14</sup>This content is available online at <<http://cnx.org/content/m13843/1.5/>>.

Available for free at Connexions <<http://cnx.org/content/col10214/1.21>>

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*(select one)*

- a) Exposition predominates.
- b) Development predominates.

**Exercise 31**

Please listen to the following short work. Which predominates—the expository or the developmental?

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[http://cnx.org/content/m13843/latest/http://music.cnx.rice.edu/Brandt/expository/copland\\_countrylane.mp3](http://cnx.org/content/m13843/latest/http://music.cnx.rice.edu/Brandt/expository/copland_countrylane.mp3)

*(select one)*

- a) Exposition predominates.
- b) Development predominates.

**Exercise 32**

Please listen to the following short work. Which predominates—the expository or the developmental?

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[http://cnx.org/content/m13843/latest/http://music.cnx.rice.edu/Brandt/expository/bolcom\\_fast.mp3](http://cnx.org/content/m13843/latest/http://music.cnx.rice.edu/Brandt/expository/bolcom_fast.mp3)

*(select one)*

- a) Exposition predominates.
- b) Development predominates.

**Exercise 33**

Please listen to the following short work. Which predominates—the expository or the developmental?

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*(select one)*

- a) Exposition predominates.
- b) Development predominates.

**Exercise 34**

Please listen to the following short work. Which predominates—the expository or the developmental?

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*(select one)*

- a) Exposition predominates.
- b) Development predominates.





# Overall Destiny<sup>15</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

In Musical Form (Section ), we compared the layout of a composition to the topography of a city. This metaphor was helpful for illustrating such concepts as unity and contrast and the boundary between sections. However, it has an important limitation: You are free to enter a city from any direction and explore it at will, exiting wherever and whenever you choose. However, there is only one way to enter a composition—the beginning—and one way to exit—the end. It is music's time-dependent nature that enables it to be dramatic. Now we will refine our conception of form to highlight this time-dependent quality: We will do so by focusing on the work's overall destiny. Just as in a narrative, such a novel or film, the overall destiny of a composition—its progress from beginning to end—is crucial to the music's dramatic and expressive intent. In a narrative, we follow the twists and turns of the plot as the story progresses to its ultimate outcome. Similarly, all of the myriads of details in a composition are in the service of a larger trajectory.

Both narratives and musical forms can be grouped according to three basic destinies. The first is a **strong round-trip**. In Dr. Seuss' famous children's story "The Cat in the Hat," a mother leaves her children alone at home for the day. When she departs, the house is clean and orderly. The Cat in the Hat shows up, and proceeds to create an extravagant mess. Belongings and a particularly vocal fish are strewn madly all over the place. Then, just as the mother's feet are visible walking down the path, the Cat in the Hat uses a magic cleaner-up machine to restore the house to order. By the time the mother walks in the door, the Cat-in-the-Hat has disappeared and the house is exactly as it was, with nothing out of place. No matter what has happened in the interim, the house has returned to its original state.

In musical terms, a **strong round-trip** describes a piece that returns to its starting point with security and confidence.

## Example

Aaron Copland's setting of the hymn tune *At the River* is an example of a strong round-trip. It returns with unshakeable conviction to its starting point.

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John Cheever's story *The Swimmer* tells of a suburban man decides to return home from work by swimming through all of his neighbors' pools along the way. He walks from pool to pool, visiting a former mistress and other emblems of a bitter, frustrated life. At each pool, he glides through the water, has a brief encounter, and continues on his way. He is a suburban Ulysses, completing his epic day's journey. However, when he arrives home, there is a note pinned to the door from his wife: She has taken the kids and furniture and left him. The swimmer has made it home; but too much has changed. His return is ambivalent and insecure. This is a **weak round-trip**.

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<sup>15</sup>This content is available online at <<http://cnx.org/content/m11607/1.22/>>.

In musical terms, a **weak round-trip** returns to its starting point, but in a way that is ambivalent, insecure or incomplete.

### Example

Charles Ives also composed a setting of the hymn tune *At the River*. However, unlike Copland, Ives adds a questioning after-image, which is more open-ended and suspensive. The music has undeniably returned to its starting point; however, it is not completely stable, making it a **weak round-trip**. Whereas Copland ended with an affirmation, Ives ends with a question.

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The "Sound of Music" is a third type of destiny. At the start of the story, the widowed Colonel Von Trapp is a lonely and demanding father; subjecting his children to a strict and joyless regimen. The threat of Nazi Germany hovers over his village. Little by little, the Colonel falls under the spell of the nanny, Maria, who brings joy back to the household. Meanwhile, the Nazis move in. Finally, the Colonel and Maria are married and the Von Trapp family makes a daring escape into the Austrian Alps, never to return. This is a **one-way progression**, in which the outcome of the plot is far different from its starting point.

In musical terms, a **one-way progression** describes a piece that ends in a significantly different place than it began. A one-way progression may be achieved when the ending seems to "forget" or contradict the opening. For instance, consider the third movement of Webern's *Drei Kleine Stucke* for cello and piano.

### Example

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Most of this brief work is concentrated in the low register, with the piano and cello alternating short gestures. At the end, the piano stops playing, leaving the cello alone to play three harmonics in a row—which it has never done before. For the first time, the work ascends into a high register. The ending is an unexpected apotheosis.

### Example

Gyorgy Ligeti created a particularly extreme one-way progression out of a mechanical process in his *Poème Symphonique*. The piece is scored for 100 metronomes, all wound up identically but set to different speeds. Once all the metronomes are in motion, listeners are invited into the hall.

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Gradually, the metronomes wind down, the fastest ones first. The texture gets thinner and thinner until finally only one metronome is left. The piece ends when the last metronome finally ceases beating.

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## Suspense about the Outcome

Both narratives and musical forms often create suspense about the outcome. Even when the outcome is not in doubt, suspense may be created by delaying the destiny's fulfillment until the last possible moment.

*City on the Edge of the Forever*, an episode of the original *Star Trek* series, suspensefully dramatizes the contrast between a round-trip and a one-way progression. Because of an accident, the future is altered, and the Starship Enterprise ceases to exist. Marooned, the Enterprise's Captain Kirk and First Officer Spock travel through time to try to return the future to its original form. Drawn to 1930's Chicago, Kirk meets and falls in love with Edith Keeler, a humanitarian leader. He and Spock ascertain that the future hinges on Keeler's fate: If she were to die in a car accident, everything would follow its intended course. However, if she were to live, she would organize a pacifist movement that will keep the United States out of World War II, irrevocably changing history. The future would no longer lead to intergalactic travel and the Enterprise would vanish. At the story's climax, Keeler is crossing a street with Kirk at her side when an on-rushing car swerves towards her. Kirk must choose whether to save her—thereby altering history—or to let her die. It is a potently dramatic moment: Kirk is faced with the romantically devastating consequences of a strong round-trip. He watches helplessly as the car strikes her. At the story's end, the Enterprise is restored intact.

Musically, composers may also withhold the ultimate arrival until the last possible moment, making it more dramatic.

### Example

After a slow introduction, the main portion of the first movement of Beethoven's *Harp Quartet* begins:

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Later, the movement appears to draw to a peaceful close. However, rather than ending as expected, Beethoven builds to a passage of unparalleled intensity, featuring frenzied passage-work by the first violin. It places the work's outcome in doubt. Finally, at the crucial moment, the work's main theme returns beneath the violin figuration, and the work completes its strong round-trip.

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## Local Details and Overall Destiny

### Example

Beginning with an awareness of the overall destiny has several advantages: First, it encourages you to take in the entire "story" of the composition; second, you will begin to evaluate how local events contribute to the overall destiny. For instance, the suspensive ending of the Ives is foreshadowed earlier in the song:

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**Example**

At the opening of the Webern cello piece, there is a single cello harmonic woven into the texture: This helps to prepare the ending, in which the cello is left alone, playing a group of harmonics.

## Conclusion

In the narrative examples, the meaning and significance of the story hinges greatly on the ultimate outcome. If the Cat-in-the-Hat were to leave the house in total disarray, Dr. Seuss' tale would have a different import. If the Van Trapp family were to be captured by the Nazis, the "Sound of Music" would take on a totally different emotional cast.

Similarly, the ultimate outcome of a composition is decisive to its meaning and interpretation. If the work returns to its starting point with strength and conviction, then the overall outcome speaks to the music's underlying unity, continuity and stability. If the work's return is more unsettled, then ambiguity and instability have clouded the ending. If the piece ends in a significantly different place than it began, then impermanence and flux have had a decisive impact. When you listen to a work, try to analyze its overall destiny by comparing the similarities and differences between beginning and end. This will reveal the basic "story-line" of the composition. Next, study how local details contribute to the work's overall destiny.

# Listening Gallery: Overall Destiny<sup>16</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

Listen to the following examples. How would you describe the overall destiny? Choose "strong round-trip" if the work ends with an unequivocal return to its starting point. Choose "weak round-trip" if the end is an incomplete, insecure or more tenuous return. Choose "one-way progression" if the music ends in a significantly different way than it began.

Among the examples are several ambiguous ones. The distinction between a strong round-trip and a one-way progression is an emphatic one. However, the "weak round-trip" is a greyer category, midway between the two extremes: ambivalent about its return, but not decisive enough to have moved completely away. The distinction between this middle category and the extreme ones is not always clear-cut. Consider each example carefully and be sure to come to your own conclusions: Wrestling with ambiguity is an important feature of analysis and interpretation. When it is appropriate, the answer key carefully explores competing points-of-views. One of the telling features of the ambiguous examples is that, in order to argue a position, a deeper knowledge and more thoughtful hearing of the **whole** score is required. Thus, using the overall destiny as a starting point gradually draws you into the content of the music.

## Exercise 35

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[http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall\\_destiny/Britten\\_-\\_This\\_Little\\_Babe.mp3](http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/Britten_-_This_Little_Babe.mp3)

How would you describe the overall destiny?

*(select one)*

- a) Strong Round-trip
- b) Weak Round-trip
- c) One-Way Progression

## Exercise 36

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[http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall\\_destiny/Messiaen\\_-\\_Intermede\\_Quartet.mp3](http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/Messiaen_-_Intermede_Quartet.mp3)

How would you describe the overall destiny?

*(select one)*

- a) Strong Round-trip

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<sup>16</sup>This content is available online at <<http://cnx.org/content/m11631/1.9/>>.

- b) Weak Round-trip
- c) One-Way Progression

**Exercise 37**


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[http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall\\_destiny/Schoenberg\\_\\_Opus\\_19\\_II.mp3](http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/Schoenberg__Opus_19_II.mp3)

How would you describe the overall destiny?

*(select one)*

- a) Strong Round-trip
- b) Weak Round-trip
- c) One-Way Progression

**Exercise 38**


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[http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall\\_destiny/Chopin\\_\\_Ballade\\_no\\_2\\_in\\_F\\_\\_Opus\\_9\\_No\\_3.mp3](http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/Chopin__Ballade_no_2_in_F__Opus_9_No_3.mp3)

How would you describe the overall destiny?

*(select one)*

- a) Strong Round-trip
- b) Weak Round-trip
- c) One-Way Progression

**Exercise 39**


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[http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall\\_destiny/Varese\\_\\_Octandre\\_I.mp3](http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/Varese__Octandre_I.mp3)

How would you describe the overall destiny?

*(select one)*

- a) Strong Round-trip
- b) Weak Round-trip
- c) One-Way Progression

**Exercise 40**

How would you describe the overall destiny?

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[http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall\\_destiny/Hindemith\\_\\_Argwohn\\_Josephs\\_\\_Opus\\_42\\_No\\_1.mp3](http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/Hindemith__Argwohn_Josephs__Opus_42_No_1.mp3)

(select one)

- a) Strong roundtrip
- b) Weak roundtrip
- c) One-way progression

#### Exercise 41

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[http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall\\_destiny/Schoenberg\\_\\_Nacht\\_from\\_Pier](http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/Schoenberg__Nacht_from_Pier)

How would you describe the overall destiny?

(select one)

- a) Strong Round-trip
- b) Weak Round-trip
- c) One-Way Progression

#### Exercise 42

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[http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall\\_destiny/Berg\\_\\_4\\_Pieces\\_for\\_Clarinet\\_\\_](http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/Berg__4_Pieces_for_Clarinet__)

How would you describe the overall destiny?

(select one)

- a) Strong Round-trip
- b) Weak Round-trip
- c) One-Way Progression

#### Exercise 43

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[http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall\\_destiny/Ligeti\\_\\_Desordre.mp3](http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/Ligeti__Desordre.mp3)

How would you describe the overall destiny?

(select one)

- a) Strong Round-trip
- b) Weak Round-trip
- c) One-Way Progression

FURTHER LISTENING: Schubert's song "Der Doppelganger" and Hugo Wolf's song "Verlasse Magdlein" are 19th-century examples of weak roundtrips. In each case, the music's overall destiny potentially reflects the text. Mel Powell's "String Quartet" is a modern example of a one-way progression. The composer described the piece as a "ball of yarn gradually unfurling." The single movement quartet begins with dense, turbulent activity in which the four players play independently. It gradually works itself towards a single line melody—which the composer playfully called "Jewish boogie-woogie"—played in unison by the quartet.





# Time's Effect on the Material<sup>17</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

## Time's Effect on the Material

In the classic cartoon, Road Runner and his nemesis, Wile E. Coyote, are marvels of endurance. No matter how violent their confrontations, both are impervious to harm. "Beep, beep"—and the two adversaries are ready to renew their struggle afresh. Time has no lasting effect on either of them.

Similarly, we rely on computer memory being absolute: no matter how we alter a document, unsaved it returns to its original form; our applications are intended to boot up intact. Movies and recordings create permanent records of otherwise perishable performances. Symbols and monuments such as the bald eagle and the Lincoln Memorial stand as enduring emblems of liberty. We turn to timeless spiritual ideas for consolation and inspiration.

But for so much else in our experience, time's force is perpetual and relentless: It is constantly chiseling away, creating new forms. Transformation may be sudden or slow, obvious or hidden, but it is inexorable. Cloud watching is a testimony to nature's restless inventiveness. "Planned obsolescence" is built into many consumer items. Living things are particularly vulnerable: Our bodies are in a continual state of transformation. Even human memory is not absolute, but a recreation that conjures up the past for us with inevitable distortions, evasions, substitutions and changing emphases. Try as we might to hold on to the past, it flees — that is a fundamental condition of living.

Whether time has an effect on the material is a crucial issue explored in a piece of music. Is the musical material able to recuperate itself exactly? Does it ever return in its original form? Or is it destined to be continually impermanent and volatile?

Oscar Wilde's *The Picture of Dorian Gray* is a powerful allegory about time's effect. The title character is able to hold off the ravages of time, outliving lovers, rivals and friends without the slightest hint of aging. His secret is a portrait, painted by a diabolical artist and kept hidden in a locked room. The portrait grows old in his stead, enabling Dorian Gray to survive unchanged. When the painting is finally discovered, its image has become horrifically decrepit and menacing. Once the painting has been destroyed, time's effect catches up with Dorian Gray: He is reduced to a pile of ash.

When musical material returns with little or no change, it speaks to the material's persistence and durability. The material is not vulnerable to time: No matter what has happened in the interim, the music is able to reconstitute itself exactly. It is stable enough to endure. The longer the passage that is restored unchanged, the greater the effect of stability.

### Example

Bach's *Brandenburg Concerto No. 5* opens with a confident thematic statement by the orchestra.

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<sup>17</sup>This content is available online at <<http://cnx.org/content/m11434/1.38/>>.

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[http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times\\_effect/01\\_Bach\\_Brandenburg\\_No\\_5\\_opera.mp3](http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/01_Bach_Brandenburg_No_5_opera.mp3)

The movement gradually builds in intensity, culminating in a wild, flamboyant harpsichord solo.

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The harpsichord seems to bring the music to a precarious cliff, ready to fall off. But it rescues itself and leads back to a return of the main theme.

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In spite of the tension of the harpsichord solo, the music has managed to regain its equilibrium. Time has not caused lasting damage: in a moment of great affirmation, the opening music is reclaimed in its original form.

### Example

Stravinsky's *Elegy for JFK*, with text by W.H. Auden, offers a more unexpected and subtle example. The piece opens with the line of text, "When a just man dies,/Lamentation and praise/Sorrow and joy, are one."

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The music then continues with little exact repetition, in brief, haiku-like statements.

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At the work's close, Stravinsky reprises the opening line exactly.

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The musical return is striking; it adds an undeniable emphasis and a timeless quality to Stravinsky's eulogy. Framing the piece with the text repetition was the composer's decision; in Auden's manuscript, this line of text occurs only at the end.

Because music is a performance art, even an "exact" return is an idealization. On paper, the music's content may be identical. But even the most expert musician cannot precisely duplicate his or her performance identically; inevitably, there will be subtle variations.

Furthermore, you, the listener have changed. You have experienced the intervening music; just the fact that the return is already familiar, rather than something fresh, gives it a different quality. Viewing the

fateful Game 6 of the 1986 World Series on videotape is not the same as seeing it the night it happened. The events may be identical, but they have a different significance when viewed in retrospect. Nevertheless, these nuances of performance and perception are subsumed within the identity of content and design. When a musical passage returns exactly, the emphasis is on the material's endurance and transcendence.

On the other hand, if the musical material returns with significant changes, then time has had an effect. The music is not stable enough to reconstitute itself exactly: It is evanescent, transitory, and elusive. It **participates** in time: the intervening action "weathers" the material, propelling it in new directions. It is a music of **becoming**, of irreversible change and progress.

### Example

Please listen to the opening of Ludwig van Beethoven's *Symphony No. 9*. The excerpt fades out at the arrival of a contrasting, more lyrical section.

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About five minutes later, this opening passage is reprised. The excerpt once again fades out at the arrival of the contrasting section.

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This time, time has had an effect: Instead of a gradual buildup, the return begins at once with the full orchestra at a very loud dynamic. The harmonic tension is intensified. Most interestingly, the return is **compressed**: It takes exactly half the amount of time as the original. This is an inescapable fact, verifiable by the clock. Yet many listeners, even professional musicians, do not recognize this consciously at first. This is the benefit of analysis: It helps make us more aware of what we are **all** hearing.

### Example

Morton Feldman's *Coptic Light* for orchestra begins with a static, very repetitive passage. Its sounds and musical rhetoric are far removed from Beethoven's.

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Nearly twenty minutes later, the opening is revisited.

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Once again, time has had an effect. At the reprise, the upper strings revive the two-note pattern that they played at the opening: This is what creates the impression of return. However, the winds originally played similar patterns to the strings. At the return, their music consists only of isolated single attacks. There is also a murmuring underlying rhythm that was not present at the opening. The overall result is of an incomplete reminiscence, because there are more disconnected attacks and "bubbling" activity underlying the upper strings.

## Measuring Time's Effect

### Short-Term and Long-Term Returns

The distance between original and return is measured in the amount of intervening music. If hardly any music separates the related passages, the wait is parenthetical; if a great deal happens, the wait is more significant. Clock-time can be a helpful guide, but only in the context of the piece's specific proportions: a minute is negligible in an opera, but nearly a lifetime in a bagatelle.

If the wait is long and the changes are subtle, progress is occurring very gradually.

If, on the other hand, the wait is brief and the changes are dramatic, the material is particularly volatile. The more volatile the material, the less likely that it will ever be recuperated in its original form.

#### Example

For instance, consider the opening of Beethoven's *Bagatelle*, opus 126, no. 1. The main theme is presented. It is then immediately repeated in its entirety. The repetition is embellished: it is more rhythmically active and reaches higher in register. Change is immediate, making the repetition more dynamic and progressive.

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Compare the Beethoven to the following passage from Igor Stravinsky's *Rite of Spring*. In the excerpt, a ruminative melody is presented. Then, after a short wait, the melody returns.

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Once again, the transformed version follows closely on the heels of the original. In this case, the changes are almost cataclysmic! The theme is presented more boldly and in a higher register. The texture is ferocious and agitated, with rapid rhythmic figuration and more complex, strident harmony.

In both the Beethoven and the Stravinsky, the volatility of the material is a signal that it will never be recovered in its original form. Local impermanence makes large-scale stability less plausible. If a musical idea is so restless that it can barely "hold onto itself" when it is immediately repeated, it makes it less likely that the music will ever be able to recuperate itself exactly.

When the original passage and its return are further apart, time's effect may be a reflection of the original's inherent stability or volatility. But it also reflects the power of the intervening music to leave its mark. In *The Odyssey*, Ulysses' tribulations and love affairs do not mar his triumphant reunion with his family: He is able to reclaim his wife and son. On the other hand, experience is not so kind to King Lear. During the play's first scene, he banishes his most faithful daughter, Cordelia. They are eventually reunited. But the catastrophic events that have occurred in the interim cannot be undone: His beloved daughter dies in his arms.

#### Example

The second movement of Schubert's *Double Cello Quintet* opens with a spare, nearly motionless texture. Melody and harmony move patiently and deliberately.

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This section is followed by a strongly contrasting B-section, which is far more agitated and turbulent. The rhythmic motion is dramatically intensified.

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Then, the opening section returns. The harmonic progression is identical to the original; the inner voices replay the original melody. However, the cello and upper violin add a more active commentary. The troubled rhythmic intensity introduced during the B-section "bleeds" into the A-section's return, preventing the music from recovering its original stillness. Time has had an effect: the A-section has "absorbed" the influence of the B-section.

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### Example

As another example, listen to the opening of Bartok's *Music for Strings, Percussion and Celeste*. The violas, alone, present the movements main theme.

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The movement builds to a powerful climax that reaches its peak with the powerful repetition of a single note. The main theme is then broken into fragments and flipped upside down. These reflections have the quality of mysterious reminiscences.

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Near the work's close, the music returns to its starting point, and the violas present the theme in its original form.

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However, time has had an effect! The theme is not presented in isolation: This time, it is combined with its own mirror image, played in the high violins. Because of the high register, the "upside down" version nearly masks the violas; you have to listen very carefully to hear the original theme. The return is also accompanied by rapid figuration in the celeste, which is playing for the first time. Finally, there is sustained harmony, played in **tremolo**. As in the Schubert, the transformations

recollect and summarize the intervening music: For instance, as was illustrated above, the inverted version of the theme was introduced at the climax. Significant events have left their mark; the music's history is reflected in the changes that have occurred.

In the Brandenburg example (Example ), the harpsichord solo is immensely exciting when it is happening; but the later music is able to "set aside" this fiery solo. It is part of the history of the piece; but it does not have a lasting effect. In contrast, in the Schubert and Bartok examples above, the intervening passages leave an audible legacy; they are not so easily dispelled.

To dramatize the fact that the opening has returned with significant new features, it is conventional to label the return as **A'** (A-prime). Thus, the form of the Schubert would be described as A-B-A'. In a movement with multiple transformed returns, they may be labeled as **A'**, **A''** (double-prime) , *etc.* When appropriate, the return of any section (**B'**, **C'**, *etc.*) may be marked in this way.

## Detailing What Has Changed

With carefully directed listening, it is often possible to quantify and describe the changes that have occurred just by ear. A comparison of related passages may be broken down into detailed and carefully directed questions: Are the registers similar or different? What about the texture? The rhythmic surface? Have the melody or harmony been altered? Are the same instruments playing?

### Exercise 44

For instance, compare the opening of the second movement of Beethoven's *Piano Concerto No. 5, Emperor*, with its restatement later in the movement. Then, mark which of the indicated features have changed. Listen to the examples as many times as you need to in order be confident of your answers.

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(select all that apply)

- a) The melody is being played by a different instrument
- b) The melody is embellished and elaborated upon.
- c) The melody is in a higher register.
- d) The rhythmic accompaniment is new.

### Exercise 45

Next, compare these related passages from Pierre Boulez's orchestral work, *Rituel: In Memoriam Bruno Maderna*. Mark which of the indicated features have changed.

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(select all that apply)

- a) The texture is thicker, with a greater variety of instruments and new percussion sounds.
- b) The oboe's line is more discontinuous; it is now broken into segments that are spaced farther apart.
- c) Sporadic rapid rhythmic figurations have been added.

### Example

One crucial issue to examine is whether the return is abbreviated or expanded. When the return is abbreviated, it can contribute to making the music more dynamic, more active. The return is more efficient, it has been reduced to an essence.

For instance, Brahms' *Intermezzo in A-Major* opens with the following lyrical section:

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After a contrasting section, the A-section recurs in abbreviated fashion.

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### Example

The third movement of Francis Poulenc's *Flute Sonata* dramatically compresses its return. The opening of the piece unfolds with a luxurious panorama of ideas, beginning with energetic figuration played by the flute and piano and culminating in a more languorous theme introduced by the piano alone.

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At the return, Poulenc presents a dizzying synopsis that rushes quickly through the contrasting ideas: The energetic figuration and languorous theme now occur much closer together.

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From a structural point-of-view, the result is very dynamic and lively.

### Example

Compare these examples with Wagner's *Siegfried's Death and Funeral March*, in which the theme is expanded when it returns. If the reprise is both expanded and presented with great stability, it creates a particularly emphatic and conclusive sense of arrival.

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## Interpreting Time's Effect

If transformations have occurred, one way to interpret them is to consider whether time has strengthened or weakened the material.

### Example

The opening of Franz Schubert's *Symphony No. 9, "The Great,"* begins with a French horn playing alone.

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At the end of the work, the entire orchestra plays the theme, powerfully strengthening the return.

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### Example

In Arnold Schoenberg's *A Survivor from Warsaw*, the narrator recalls witnessing Jewish prisoners being led away to their deaths. As he describes how the condemned started to sing, a disjunct melody is played quietly by a muted horn.

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Later in the work, the narrator's retelling becomes more immediate and detailed. As he describes the prisoners' final march, the muted horn's melody returns—this time sung forcefully by men's chorus and prolonged into a complete prayer. Time has strengthened the material, giving it an overwhelming emotional impact.

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In Samuel Beckett's play *Krapp's Last Tape*, a bumbling, mysterious old man revisits scenes from his life by replaying autobiographical tapes he made when he was younger. His idealistic, assured younger self is juxtaposed against the hopeless, hapless relic that he has become. The play is an analog to the type of analysis we have been describing: Past Krapp and present Krapp are presented side-by-side, so that time's effect becomes palpable. In the case of poor Krapp, time has weakened him.

**Example**

Time can also weaken musical material. The Scherzo of Ludwig van Beethoven's *Symphony No. 5* begins with a forceful French horn melody.

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Later, this passage returns. But instead of strengthening it, time has weakened the material. Now it is played delicately by the winds, supported by plucked strings:

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**Example**

In Arnold Schoenberg's *Verklarte Nacht* is an instrumental work inspired by a poem by Richard Dehmel. The poem tells the story of a woman who confesses to her lover that she is carrying another man's child. The man's shock and distress is represented by the following theme.

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At the poem's close, the man tells the woman he will love the child as his own. In the music, this is represented by the return of the impassioned theme. But time has had an effect: Only fragments are played, softly in the high register.

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**Exercise 46**

As the above examples indicate, time's effect on the material is central to music's dramatic thrust. Near the beginning of the musical Camelot, King Arthur sings of his idyllic kingdom.

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During the course of the story, Arthur's reign is undone: His bride, Guinevere, abandons him for Lancelot, his most trusted Knight. The Round Table collapses; Arthur's vision of peace and prosperity is ruined. Near the musical's close, Arthur visits a monastery where Guinevere lies dying. At her bedside, he sings a refrain of his earlier song. Sit for a moment at the desk of composer Alan Jay Lerner: Would you strengthen or weaken the material?

(select one)

- a) Strengthen the material at Guinevere's bedside.
- b) After everything that has happened, weaken the material.

## Recognizing Time's Effect

In Alexander Dumas' classic tale *The Count of Monte Cristo*, the hero Edmund Dantes is an unsophisticated commoner, unjustly imprisoned. During his brutal incarceration, he befriends a fellow inmate, who secretly teaches him the skills of the nobility, and eventually shares with him the location of a secret treasure. Dantes escapes, finds the treasure, and transforms himself into a Count with extraordinary wealth. When he returns home, neither his beloved nor his enemies recognize him—the effects of time have been too pronounced.

A musical return may be similarly disguised. If most of the qualities of the original are preserved, recognition of a reprise is within the reach of an alert listener. But if the transformations are extreme—if only a shadow of the original is preserved—then time's effect may be so overpowering as to make recognition very difficult.

### Example

Listen to Beethoven's *Bagatelle*, opus 126, no.1 in its entirety. As you will recall, the movement opens with a lyrical theme, which is immediately repeated with more embellishments. Does the main theme ever return at all? If so where and how?

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The melody does return: it is played in the bass.

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However, many of the opening's original features have been modified: the melody is in a much lower register; faster rhythmic values predominate in the accompaniment; the harmony is different. Rather than being strongly articulated, the reprise is obscured by the radical transformations that have taken place.

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### Example

Similarly, in Schoenberg's *Piano Piece*, opus 33a, the refrain of the opening may be hard to grasp:

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The pitch patterns at the opening and in the piano's right hand at the return are exactly the same. But many of the opening's defining features have changed: the opening is made up strictly of chords; at the reprise, there are still chords, but are broken, creating a more rhythmically fluid surface. The texture is also thickened: the left hand is playing an independent part. The register is expanded. Though the opening is being recuperated, the novelties make the recognition challenging.

Disguising the return makes the music inherently more open-ended and dynamic. The music does not acknowledge its return, but rather maintains its uninterrupted development. Instead of a sense of circling back to a familiar place, the music offers a particularly forceful sense of progress.

## Conclusion

When you go to a class reunion, you are not there just to recognize old classmates. You are there to see whether time "has been good to them." Who has aged, who remains youthful? Who has fulfilled the ambitions of their youth, who has faced greater disappointment or veered off in unexpected directions? One classmate remains as straight-laced as ever. Another has gone from being a businessman to being an organic farmer. You mill about the crowd, analyzing time's effect in all its dazzling variety and potency.

Similarly, when listening to music, identifying the return of a familiar passage is not enough. Evaluating whether the passage is restored intact or has changed is crucial to understanding the significance and poetry of the return. The possibilities range from time having no effect whatsoever—the music is restored intact, exactly in its original form—to time's effect being so powerful and the transformations so extreme that the original passage is barely recognizable.

Time's effect may be sudden or gradual. It may render the music more secure or more unsettled, more refined or more elaborate, more delicate or more forceful, compressed or expanded. Through careful hearing and comparison of related passages, it is possible to carry an aural analysis quite far. The progression from analysis to interpretation may work both ways. You may begin with a more immediate, intuitive reaction, and then examine the music carefully to understand its cause. Or, you may begin with a collection of observations, which then yield a more comprehensive conclusion. Across styles, eras and cultures, time's effect on the material may be the single most crucial feature of music.



# Listening Gallery: Time's Effect<sup>18</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

## Exercise 47

Listen to this movement from Bach's *Cantata No. 52*. Does time have an effect on the material?

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(select one)

- a) Time does not have an effect.
- b) Time does have an effect.

## Exercise 48

Listen to the second, third and fourth movements of Earl Kim's *Now and Then*. The second movement, *Thither*, is reprised. Does time have an effect?

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(select one)

- a) Time does not have an effect.
- b) Time does have an effect.

## Exercise 49

Click when you hear a new section. Use the pull-down menus to label the section. Use the prime notation if a refrain is transformed in some way.

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<sup>18</sup>This content is available online at <<http://cnx.org/content/m11625/1.12/>>.

Available for free at Connexions <<http://cnx.org/content/col10214/1.21>>

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**Exercise 50**

Click whenever you hear a return to the opening passage. Has time had an effect?

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**Exercise 51**

Click whenever you hear a return to the opening passage. Has time had an effect?

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[http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times\\_effect/Rochberg\\_\\_String\\_Quartet\\_no\\_6](http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/Rochberg__String_Quartet_no_6)

**Exercise 52**

Listen to the opening of Schubert's *String Quartet no. 15 in G-Major* and compare it with its refrain later in the movement. Has time had an effect on the material?

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(select one)

- a) Yes, time has an effect.
- b) No, time does not have effect.

**Exercise 53**

Listen to the following excerpt from Dmitri Shostakovich's *String Quartet No. 7*. When the reprise of the opening occurs, does time have an effect on the material?

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(select one)

- a) Yes, time has an effect.
- b) No, time does not have effect.

**FURTHER LISTENING:** Maurice Ravel's "Bolero" is a seminal example of time strengthening the material. The piece consists of the same melody repeated over and over, each time with heavier orchestration. Alvin

Lucier's "I Am Sitting In A Room" is an experimental example of time weakening the material. The composer recorded himself reading a brief text. He then broadcast the recording into a room and recorded it. He took that recording, broadcast it and recorded it. As he repeated this circular process, the fidelity of the recording gradually degraded, until all that was left was the resonance frequency of the room vibrating with the rhythm of his voice.





# Summary: A Quick Guide for Listening<sup>19</sup>

Music is a time-art. It is abstract and non-verbal: its sounds do not have literal or fixed meanings. A musical performance generally flows unstoppably and cannot be interrupted. In general, composers intend for a musical work to express itself fully through its own sounds, without the need for supplementary explanations. Under these conditions, **repetition** is the basis of musical intelligibility. Pop music tends to rely on literal repetition, because intelligibility is most immediate, whereas art music focuses on varied and transformed repetition.[How Music Makes Sense (Section )]

Musical emphasis may be created in four main ways:

- The primary means of emphasis is **duration**: Because music is a time art, if you want to emphasize something, **make it last**.
- **Change**—such as change of speed, register, texture, etc.—is another means of emphasis. The greater the change, the stronger the emphasis.
- **Extremes**—such as loudest and softest, highest and lowest, densest and sparsest, fastest and slowest—are a third means of emphasis.
- **Rhetorical reinforcement** occurs when emphases of duration, change and extremes are aligned to create a well-marked structural landmark. Strong rhetorical reinforcement promotes **clarity**. Weak rhetorical reinforcement—when the structure is not supported by coordinated emphases—promotes **ambiguity**.

A climax is a work's **maximum emphasis**, created by the reinforcement of extremes. Highly unrhetoical works tend not to have a climax, because their emphases are out-of-phase from each other. [Musical Emphasis (Section )]

Form describes the layout of a composition as divided into sections. There are two main types of form. An A-type form consists of a single section; it focuses on **continuity**. An A/B-type form consists of multiple sections; it focuses on **contrast**. [Musical Form (Section )]

Expository statements establish the **identity** of musical material. Developmental passages put musical material into **action**. The balance between the expository and the developmental is a crucial expressive feature: The greater the amount of exposition, the greater a work's repose; the greater the amount of development, the greater a work's flux.[Expository and Developmental (Section )]

The overall destiny of a piece of music is a comparison of how the end relates to the beginning. There are three possible destinies: a strong roundtrip, in which the music returns with confidence and security to its origin; a weak roundtrip, in which the music's return is insecure or incomplete; or a one-way progression, in which the music ends in a far different place than it began. Grasping the overall destiny helps you to understand details within the context of the work's larger trajectory. [Overall Destiny (Section )]

When a musical idea or section returns in a composition, it may return identically, in which case time has **not** had an effect: A literal return speaks to the material's stability and endurance. On the other hand, if the idea or section is varied or transformed, time **has** had an effect: The return speaks to the material's evolution and progress. When transformations occur, you may evaluate whether they strengthened or weakened the material. [Time's Effect On the Material (Section )]

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<sup>19</sup>This content is available online at <<http://cnx.org/content/m13848/1.12/>>.

## Advice for Listening

### First Hearings

#### Be Self-Reliant

The purity and integrity of your personal responses to a piece of music are impossible to recover once you have read or heard someone else's thoughts about it. If possible, avoid reading the program or liner notes for a work you're hearing for the first time. Allow yourself to experience the music directly, without an intermediary. After you know the piece well, you will find reading about it even more enjoyable, because you will be able to measure other perspectives against your own. Writings and talk about music can be revelatory; but, ultimately, art is meant to be experienced as directly and personally as possible.

#### Begin with large-scale questions

When you drive, you shouldn't stare at the road immediately ahead of you. Doing so causes your steering to be very erratic. Instead, you are taught to focus on a more distant horizon and also check your mirrors constantly for what is behind. You never lose sight of the road just ahead; but you subsume it within a larger perspective. This is a good metaphor for listening to music. Details are hard to remember and keep track of, especially when they begin to accumulate; it is also easy to lose sight of their overall relevance. Drawing your attention to large-scale issues of form, recurrence and destiny will help you keep your attention throughout an entire work; it will also keep you from becoming quickly disoriented when sounds are shocking or unfamiliar.

#### Be An Adventurous Listener

We live in the richest time for music ever: Thanks to recorded and broadcast media, it is almost impossible to have a day **without** music. As long as people care to listen, new music will always be written. Just as in every other profession, people reach beyond previous generations, challenging limitations and pre-conceptions and speculating about new possibilities, so too do living composers. People often ask about a new work, "But how do I know if it will be any good?" It's fun to watch the replays of a ballgame already played. But there is a special excitement when the action is unfolding live, and the outcome is uncertain. Bring that same spirit to the concert hall.

### Closer Study

#### Ask One Question at a Time

Deciphering music "holistically" can be a daunting task: There is a great deal of information—rhythmic harmonic, melodic, instrumental, formal, both short-term and large-scale—to consider. However, if you patiently ask one question of the piece at a time, you will be surprised at how much you can apprehend—even by ear. Begin with large-scale issues and gradually sink down into the details. In this way, you will build a comprehensive and confident aural analysis. Be patient with the process. When you learn to drive, it takes time and conscious effort to master each skill. Eventually, though, you internalize the skills into fluid actions. Similarly, "one-dimensional analysis" may seem laborious at first; but with practice, you will be able to consider multiple issues simultaneously and gradually develop "fuller" listening habits.

#### Do not limit yourself to a chronological analysis

If you have the opportunity to study a work in depth using an audio recording, do not limit yourself to chronological hearings. Listen carefully to expository and climactic statements, because these most clearly establish the identity of musical material. If you identify recurrent sections, play them side-by-side for closer comparison.

### Build Your Subjective Opinions from Objective Facts about the Music

The more an interpretation is grounded in objective, verifiable observations, the stronger it is. Otherwise, it risks telling us more about the analyst than the music. In the module “Time’s Effect Upon the Material,” we discussed how the opening of the first movement of Beethoven’s Ninth Symphony is compressed to **half** its length when it returns. This is an objective fact; anyone can measure it. By listening carefully and consciously articulating what you hear, you will be able to bring many crucial facts to light. Build your subjective point-of-view from these.

When writing about music, support your interpretive statements with concrete observations. “The music sounded like flowing water” is too vague. “The music sounded like flowing water because the rhythms were rapid and continuous, were in a middle register so as not to sound too anchored and flowed in long phrases” provides support for the subjective image with statements about the music that anyone can verify. None of these observations requires a musical background, just careful attention.

### Conclusion

Equipped with these principles, you will be better prepared for the biographical, historical and theoretical contexts with which music is often described. The specifics of a style or era will resonate with the generalities that encompass all music. A Baroque “Da Capo” aria, in which the singer embellishes the return, is an example of repetition without redundancy. A Classical Sonata form is divided between expository and developmental sections. Leitmotifs enable Wagner to rhetorically reinforce the action in his operas.

Our environments are often so saturated with noises and activity, we spend a great deal of time trying **not to hear**. To get a measure of peace and autonomy, we learn to block out the voices and sounds around us. We tend to favor familiar stimuli, because repetition is easier to sublimate. Music is an invitation to listen with our full attention. Listening actively to music changes the way we hear our lives: At its most meaningful, music shows us how to recognize the rhythms, patterns and recurrences of our experience.



# Making Music Modern<sup>20</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

## Introduction

A tension exists between the enduring aspects of the human condition, rooted in our biological make-up, and those aspects of our experience that are impermanent, transitory and rapidly progressing. Physically, we have evolved very gradually. Our maturation process, our inner urges, our life cycle have endured for thousands of years, deeply connecting us to our ancestors from the distant past. Over time, we have “stretched” ourselves biologically—we are taller and live longer— but our essential nature and basic physiognomy have remained the same. On the other hand, in almost every other respect—socially, scientifically, technologically, etc. —the transformations have been far-reaching and dramatic. A caveman from ten thousand years might recognize our bodies; but he would not recognize our world.

One of the purposes of art is to explore this tension between the enduring and the progressing.

Thus, each era of art makes a unique and irreplaceable contribution, illuminating for us a particular moment in humanity's on-going development.

Whether in ballet, theater, fiction, poetry, architecture or film, the educated public acknowledges and celebrates the continuity of artistic creation and its perpetual innovations and discoveries. Mavericks such as William Faulkner, T.S. Eliot and e.e. cummings in literature, Martha Graham and Merce Cunningham in dance, Pablo Picasso and Mark Rothko in art, Frank Lloyd Wright and Frank Gehry in architecture, Harold Pinter and Edward Albee in theater—to name just a few—all have found an enduring and devoted public: We wait for Godot, we are dazzled by Gehry's forms, are awed by Picasso's fractured portraits.

In contrast, progressive modern music of the past one hundred years has struggled to find an audience. Many major musicians consider it possible to live a full professional life without performing the music of their own time. Orchestral programming routinely favors the traditional repertoire. A large community of prominent performers, theorists and historians avoid the creative work of the last century, treating it as an aberration. To many listeners, Western concert music as they know and love it ended, for all practical purposes, at the turn of the 20th-century.

As a result, something deeply meaningful is lost. No one speaks with greater passion and eloquence than Beethoven about the tension between the enduring and transient parts of our selves. But he does so for his own time. Our own era is more heterogeneous than Beethoven's, more unstable, and more imbued with ambiguities. Beethoven's world did not have a conception of the unconscious; now psychologists describe most of our mental activities as being beyond our direct awareness. In Beethoven's world, science depicted the natural world as a giant, predictable machine; in our time, we understand that unpredictability is built into the fabric of the cosmos. In Beethoven's world, news traveled slowly; in ours, the stock market is updated by the minute on home computers. The New York Times once ran a headline, “Did Music End With Mozart?” As long as our world is developing, as long as our vision of life is evolving, no composer will ever have the last word.

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<sup>20</sup>This content is available online at <<http://cnx.org/content/m13845/1.15/>>.

In this module, we will study the ways in which progressive modern music differs from classical music. We will then use the conceptual and listening tools that we have developed in earlier modules as an entryway into the modern repertoire.

## The Shock of the New

A little over three hundred years ago, Sir Isaac Newton created the first mathematically coherent explanation of the universe. To Sir Isaac Newton, nature behaved like a well-regulated, predictable machine. Give Newton comprehensive information about the universe and he could have predicted the future. Famously inspired by a falling apple, Newton's laws are confirmed by our direct perceptions and agree with our common sense. We still launch satellites into orbit using his method of calculation. But Newton's view of a predictable universe turned out to be deeply flawed. Perhaps the most fundamental scientific discovery of the 20th-century was the recognition that ambiguity is irrevocably built into nature.

## The Theory of Relativity

Einstein's Theory of Relativity stipulates that the speed of light is constant for all observers. One startling consequence of this is that **simultaneity** and **cause and effect** are not absolute, but relative to one's perspective. It is possible for one observer to report two events as happening at the same time that another observer sees as happening in sequence. Thus, according to the Theory of Relativity, there is no definitive "reality," no commanding perspective that overrides all others. Instead, nature allows for multiple, and even contradictory, points-of-view. Decades of experiments have confirmed Einstein's theory.

## Quantum Mechanics

Ambiguity also intruded into quantum mechanics, the study of sub-atomic particles. To give a speeding ticket, a police officer must know both a car's location—in order to identify it—and its speed—in order to determine whether it is breaking the law. The Heisenberg Uncertainty Principle stipulates that an observer cannot measure both the **position** and **speed** of a sub-atomic particle with exact certainty. Thus, it would be impossible to give a speeding ticket in the quantum world. Why? If the police officer were to accurately measure the location of a sub-atomic particle, he would have to sacrifice knowledge of its speed. On the other hand, if he were to measure how fast the particle were traveling, he could not know its position. Nature would continually confound him; his information is doomed to be incomplete.

## Psychology

It is not just the outer world that is saturated with ambiguity. Sigmund Freud was the first scientist to deeply explore the concept of the **unconscious**—mental processes that lie beyond our direct awareness. These range from metabolic processes like breathing to the complex motivations that underlie every day decisions. A century of research has established that most of human thinking is **unconscious**. Various experimental methods have been devised to explore the unconscious, from dream analysis to word association, Rorschach tests, brain scans, and more. Yet deciphering our unconscious thoughts remains elusive. Thus, not only must we accept the ambiguities of the natural world, we must acknowledge it within ourselves.

## Nature's Ambiguities and Daily Life

Nature's ambiguities generally lie outside our direct perception. Relativistic effects only become pronounced at near the speed of light. The contradictory, unresolved behaviors of sub-atomic particles dissipates as objects get larger. Unconscious thoughts, by definition, lie outside our immediate awareness. Thus, it is

possible to be largely oblivious to the ambiguities inherent in nature. However, one hundred years of scientific research has established that ambiguity imbues the world around and within us.

## Ambiguity in Art

As ambiguity became heightened in science, so too did ambiguity become heightened in art.

All great works of art leave questions open: Is Hamlet mad or just pretending to be? Is the Mona Lisa smiling? 20th century artists didn't need to make their art ambiguous—it already was. Instead, they strove to **amplify art's ambiguity**. Painters created abstract images that did not refer explicitly to observable reality. Writers created non-linear narratives that shifted around in time or were told from multiple perspectives. How did composers heighten the ambiguity in music?

## Heightening Musical Ambiguity

Because it is non-verbal and often non-representational, music is particularly ambiguous.

During a pre-concert radio interview, a radio announcer commented to the conductor that a section of a Bruckner Symphony was one of the composer's most "optimistic" passages. To which the maestro replied soberly, "Actually, I find it quite pessimistic." Abstract music will always resist easy interpretation.

And yet, as the following discussion will make clear, classical composers put a high value on clarity and resolution. Progressive 20th-composers shifted the balance much more strongly towards the uncertain and the unresolved.

## Individualized Musical Languages

"U tita enska aka ca vik i totar i tari"

Speaking in a personal language—no matter how thoroughly imagined and consistent—automatically heightens ambiguity. The sentence above—an example of Skerre, a language invented by linguist Doug Ball—would take a long time and a great deal of analysis to decipher. Language functions most conveniently in a community where everyone shares a similar vocabulary and syntax. Because music does not have fixed definitions, linguistic parallels are often misleading. Nevertheless, the shared materials, methods and formal methods of the "common practice era" helped to make the music more accessible. Listening to one common practice era work **helped you understand how to listen to others**.

### Example

The following excerpts by Franz Schubert and Johannes Brahms were written seventy years apart.

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If Schubert had been alive to hear Brahms' work, the music would no doubt have been intelligible to him.

During the 20th-century, the common practice era came to an end. Composers intensified the individuality of their musical voices. The following works for speaker and ensemble were written within several years of each other:



**Example**


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A few decades later, the following string quartets were written very close together.

**Example**


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Finally, the following works for two pianos were written at nearly the same time.

**Example**


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Listening to the Carter **does not** help teach you how to listen to the Cage. Listening to the Reich does not help you with the Boulez. Each work much be considered on its own terms.

The personality of individual musical languages were established in a myriad of ways. Some composers, such as Harry Partch, invented their own instruments. (Partch gave his instruments such fanciful names such as Cloud-Chamber Bowls, Diamond Marimba and Chromolodeon.)

**Example**


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Some, like Mario Davidovsky, pioneered the use of electronic sounds. In Davidovsky's Synchronism No.9, live and recorded, electronically transformed violin sounds are intertwined.

**Example**

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Some, such as Charles Ives, blended familiar music in unusual ways. In this excerpt from his String Quartet No. 2, Ives creates a musical “discussion” in which American folk tunes from North and South are quoted in opposition to each other.

**Example**

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Some, such as Lou Harrison, incorporated influences from other cultures. This excerpt from Harrison's Song of Quetzalcoatl uses many exotic percussion instruments.

**Example**

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Others, such as Elliott Carter and Milton Babbitt, developed sophisticated, very carefully constructed musical methods. In this excerpt from Carter's Variations for Orchestra, ensembles within the orchestra are characterized uniquely—the winds, for instance, are soft and slow-paced—and then layered on top of each other in a complex counterpoint.

**Example**

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Now, over a hundred years after the end of the "common practice" period, there is an enormous proliferation of musical styles. The break-up of the musical community in favor of much more personal musical languages greatly heightened ambiguity.

## Absence of Pulse

A steady pulse or “backbeat,” so crucial to pop music, jazz and much world music, provides continuity and predictability: You tap your feet to the beat.

**Example**

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A steady meter divides musical time into a fixed cycle of beats. Classical ballet and ballroom dancing depend on a steady meter.

**Example**

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Removing the steady pulse or meter disrupts the musical continuity and makes events much harder to predict. There are two main ways to accomplish this: One is to make the pulse or meter erratic.

**Example**

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The second is to remove the sense of pulse and meter altogether, creating what Pierre Boulez has termed “unstriated time.” In the following example from Boulez’s *Eclat*, the solitary, sporadic events seem to float freely, unanchored by meter or pulse.

**Example**

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Weakening the sense of pulse or meter heightens ambiguity by removing an important frame of reference.

## Unpredictable Continuity

### Exercise 54

It is frequently remarked that classical music is constantly creating **expectations** that encourage us to guess what will happen next. In expository sections, when the music is striving for maximum clarity, many of those expectations will be met. For instance, listen to the opening of J.S. Bach’s Prelude in E-flat from the Well-Tempered Clavier, Book I. Can you predict what happens next?

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*(select all that apply)*

- a) The upper register continues with fast motion
- b) The lower register answers the upper with fast motion
- c) Both registers move in slow values.

### Example

A surprise occurs when one outcome is strongly anticipated but another one occurs. Ambiguity arises when multiple outcomes are all **equally** expected or no good forecast can be made. Listen to the opening of the second movement of Igor Stravinsky's Three Pieces for String Quartet. Can you predict what happens next?

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Which of the various gestures that Stravinsky has introduced follows next? How sure are you? Here is how the music actually continues:

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This time, you were likely to have much less confidence of your answer. In the Bach example, a pattern was established: the upper register was repeatedly answered by the lower. Stravinsky does not establish a consistent pattern, making any predictions much more uncertain. When we cannot confidently forecast what will happen in the future, ambiguity is heightened.

## Minimal Exposition

In football, the quarterback announces the play in the huddle; then the offense steps up to the line of scrimmage and runs the play. In music, expository statements establish the identity of a musical idea; developmental passages put the idea into action. Most classical music operates like a football offense: an idea is first introduced, then put into action.

### Example

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In a no-huddle offense, the quarterback calls out the plays at the line of scrimmage. Teams use the no-huddle offense to speed up the pace of the game and confuse the defense. This creates a much more ambiguous and hectic situation. It is harder to defend, because there is less time to analyze formations. Analogously, in music, when exposition is abbreviated and development intensified, ambiguity is heightened.

### Example

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In the most extreme cases, a modern work may consist exclusively of **development**. This is as if a team were to spend the entire game in a no-huddle offense! In such cases, the identity of the underlying material may be very difficult to perceive.

## Lack of Literal Repetition

We establish our identity through our name, our driver's license, social security number, credit cards, personal belongings, habits, tastes, family and friendships. In music, the most forceful and clear way to establish identity is through **literal repetition**. **Literal repetition** is the strongest way to make a musical idea recognizable.

### Example

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Buddhism challenges the concept of identity, considering it an illusion. We may cling to the emblems of an enduring self; but they are no more substantial than sand castles. The only permanent truth is “impermanence.” This finds a powerful correlation in one of modern music's most radical innovations: The elimination of literal repetition. Removing literal repetition weakens any sense of a stable “musical identity” and heightens the music's sense of impermanence and flux.

### Example

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## Lack of Resolution

In classical music, a **dissonance** is a **tendency tone** that is considered unstable. A dissonance **demand**s continuation: It must resolve to a stable tone, called a **consonance**.

### Example

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Classical music makes an essential promise: **All dissonances will resolve**. Sometimes, resolutions are delayed; or new dissonances enter just as others are resolved. Eventually, however, the music will reach a state of repose and clarity.

### Example

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In progressive modern music, dissonance is frequently intensified and sustained way beyond classical expectations.

**Example**

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In addition, there is a new paradigm: **Dissonances no longer must resolve**. Stability and clarification are no longer guaranteed.

**Example**

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Nowhere is the clarity of classical music more strongly established than at the end of a work. There, the music summons its greatest powers of resolution. Beethoven's Symphony No. 5 ends with an emphatic affirmation of stability.

**Example**

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The absence of resolution at a work's close guarantees greater ambiguity. In the following example from Pierre Boulez's *Dérive*, a stable sound is sustained by the violin. The other instruments dart towards and away from this sound, never wholeheartedly coinciding with it. The effect is much more precarious than in the Beethoven example.

**Example**

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There is nothing that we can do to make Boulez's ending sound as secure as Beethoven's: It is inherently more ambivalent.

## Heightened dissonance

In music theory, dissonance is a functional term. To listeners, though, “dissonant” is often a value judgment, typically meaning “harsh” and “unpleasant.” Those attributes, though, are subjective and carry strong negative connotations. I would prefer a different description. Acoustically, a stable sound is more “transparent.” It is easier to identify its inner constituents. A sound with a lot of dissonance is more “opaque.” The greater the amount of dissonance, the harder it is to analyze and interpret the sound.

### Example

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It is easy to understand, then, why modern composers might heighten dissonance: Not necessarily to make the music more strident but rather to increase the ambiguity by making the sounds harder to aurally decipher.

## Harmonic Independence

In a family-style restaurant, everyone sitting at one table is fed the same food. As the platters are brought to the table, the guests choose their own portions; yet they are bound together by sharing the same meal. If someone were to ask about the menu of the day, there would be a clear and united answer.

The word **harmony** describes the notes that are sounding at the same time. In classical music, no matter how many instruments are playing, they will share the same harmony. As one harmony leads to another, the instruments will move together, partaking of the same notes. In addition to a steady pulse, **harmonic coordination** is the primary way that classical music **coheres**. Harmony is the reason that the instruments “sound good together” even when they are playing independent lines.

### Example

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At a salad bar, each person creates his or her own meal. One person might make one trip to the buffet; another might visit repeatedly, each time choosing different items. The diners no longer cohere in the same way: It would be impossible to know from one person’s plate what someone else was eating.

In music, the absence of **harmonic coordination** may create great ambiguity and complexity. **Harmonic independence** makes it much harder to get a “comprehensive” overview of how the instruments fit together. The third movement of Luciano Berio’s *Sinfonia* dramatizes this effect. In this movement, the Scherzo from Mahler’s Second Symphony is played continuously. On top of it, an elaborate collage of music and text is layered: graffiti from the walls of the Sorbonne, quotes from Samuel Beckett, excerpts from classical and modern music. Strong clashes arise because the collage elements do not agree harmonically with the Mahler.

### Example

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**Harmonic independence** does not mean that modern composers do not care how independent lines sound together. They **do** care, but they are trying to create ambiguity rather than clarity. Giving each instrument its own “plate of food,” which may complement others in intricate ways, leads to radically new resulting sounds.

## Weak Rhetorical Reinforcement

When the winner is declared in a typical Presidential election, streamers and balloons fall down from the ceiling, supporters cheer, cameras flash—all reinforcing the decisive outcome.

In classical music, united emphasis or “rhetorical reinforcement” is a primary means of creating structural clarity. In Beethoven’s Symphony No. 5, the third movement continues into the fourth without a break. The boundary between the movements is marked by strong rhetorical reinforcement: The dynamics, texture, meter and speed all change at once to herald the opening of the fourth movement.

### Example

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The Election Night 2000 offered a different picture: No balloons fell, people milled about in a state of confusion, television announcers nervously shuffled their papers. Indeed, the country managed to peacefully sustain the uncertain outcome for the seven weeks that followed.

In progressive 20th century music, rhetorical reinforcement is often weak or absent. This makes the structural arrival points much more difficult to perceive. In Henri Dutilleux’s *Ainsi la nuit...*, the individual movements are played without pause. However, the boundaries between movements are difficult to discern because there are conflicting cues.

### Example

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Perhaps you recognized that the second movement begins with the loud gesture played a little over a minute into the excerpt. However, this gesture does not have a greater perceptual priority than other potential markers, such as the long silences. As a result, you are likely to be far less certain about the formal boundary.

In traditional ballet, music and movement typically reinforce each other: For instance, the music will reflect the change from a solo to an ensemble number. However, when composer John Cage and choreographer Merce Cunningham collaborated, they did not coordinate their work. Music and dance were combined for the first time at the premiere. This made rhetorical reinforcement highly unlikely; if it did occur, it could only be the result of chance. Thus, the method of collaboration guaranteed greater ambiguity.

## Silence

In his book “Signifying Nothing,” the mathematician Brian Rotman presents an analysis of William Shakespeare’s *King Lear*. Dividing up his kingdom before his death, Lear asks each of his three daughters to pledge their love for him. His youngest daughter Cordelia’s turn comes:



Lear:...what can you say to draw a third more opulent than your sisters? Speak.

Cordelia: Nothing my lord.

Lear: Nothing?

Cordelia: Nothing.

Lear: Nothing will come out of nothing: speak again.

In Rotman's interpretation, Lear understands Cordelia's "nothing" in the medieval sense, as a "void," "death," the total absence of life and feeling. But Cordelia intends her "nothing" in a more modern sense: She refuses to treat her love as a commodity, to be traded for land. Her "nothing" does not mean that she has **no love**; only that she will not offer it in exchange for her inheritance. From that misunderstanding, the tragedy of Lear unfolds.

In the same way that medieval thinkers regarded "nothing" as the "absence of creation," many musical traditions treat silence as the "absence of music." Silence is almost totally absent from pop music. In classical music, it is used sparingly: It may occur as a "breath" to short phrases or as a formal articulant to large sections. The opening of Mozart's Symphony No. 40 in g-minor consists of continuous sound until the arrival of the contrasting section, which is marked by silence:

#### Example

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In progressive 20th-music, silence began to be treated as a musical material in its own right. Its musical information is limited: All we can analyze is how long it lasts. But, in seeking to heighten ambiguity, this limitation became a strength. We can read many possible meanings and inferences into silence: It is a hesitation, an interruption, a "trap door" into the unexpected.

#### Example

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To John Cage, silence marked a musical event over which the composer had no control, which could function as a "window" into other sounds. His Imaginary Landscape No.4, is scored for twelve radios. The performers move the frequency and volume dials according to precisely timed instructions. Cage has no control over the resulting sound: It depends entirely on what is being broadcast that day. At one performance, none of the frequencies marked in the score coincided with stations in that location, resulting in a completely silent performance.

The greater the use of silence, the greater the ambiguity.

## Noise

If silence is the "absence of sound," then noise is "indiscriminate" or "indistinguishable" sound, in which it is impossible to tell the pitches or what instruments are playing. Classical music is generally purged of noise. Exceptions such as the following are rare:

#### Example

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To progressive 20th-century composers, the inherent ambiguity of noise became very attractive.

Composers incorporated noise in their music in numerous ways. Some brought the outside world into the concert hall. For instance, to create his electronic composition *Finnegan's Wake*, the John Cage recorded sounds in the Dublin neighborhood where a scene from Joyce's novel occurred; he then layered these in a complex collage.

#### **Example**

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Other composers asked for standard instruments to be played in non-traditional ways. In his string quartet *Dark Angels*, George Crumb has the amplified quartet run their fingers rapidly up and down their fingerboards, creating a sound meant to evoke the frantic buzzing of insects.

#### **Example**

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As with silence, the more noise, the greater the ambiguity.

## **Ambiguous Notation**

The furniture from IKEA comes in a box, with a manual on how to put it together. There is room for individual touches: But the over-arching goal is to create a piece of furniture that matches the instructions.

Classical music also comes with detailed instructions. A classical score typically specifies the instrumentation, pitches and rhythms, speed, dynamics and articulations. Not everything is marked with equal precision, leaving room for interpretation. However, the purpose of the score is to create a recognizable performance: Much more is shared between interpretations than differs. For instance, compare two performances of Beethoven's *Bagatelle*, Opus 126, no.1.

#### **Example**

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[http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/beethoven\\_bag\\_chung.mp3](http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/beethoven_bag_chung.mp3)

Modern composers sometimes sold their furniture with the barest of instructions. Compare the following two recordings.

**Example**

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This is an unsupported media type. To view, please see  
[http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/brown\\_december\\_blum.mp3](http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/brown_december_blum.mp3)

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This is an unsupported media type. To view, please see  
[http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/brown\\_december\\_tudor.mp3](http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/brown_december_tudor.mp3)

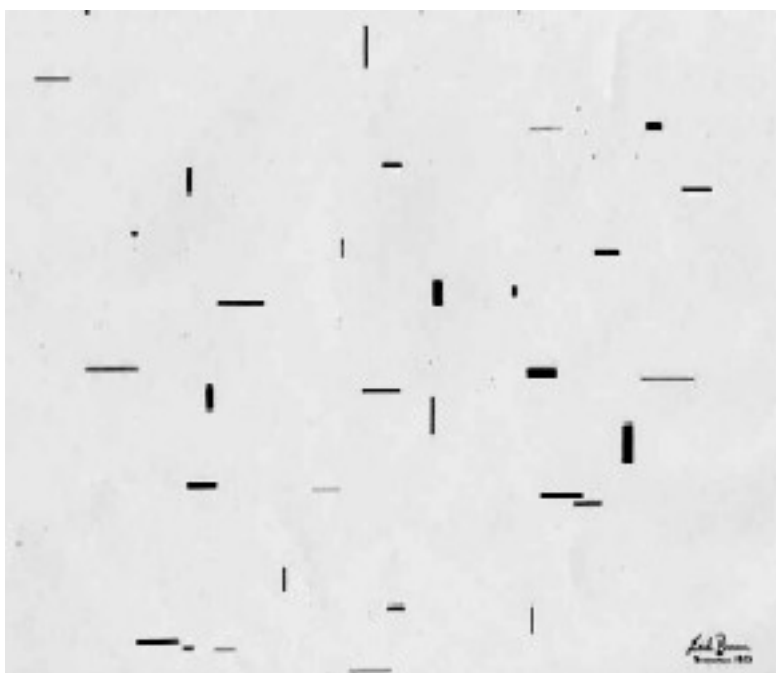
---

Hard as it may be to believe, those are actually two performances of the same work: Earle Brown's December 1952. How can that possibly be? The instrumentation is different. The musical content—the pattern of sounds and silences—is totally different. Not a single detail is the same. The first performance lasts just 45 seconds. The second is actually only an excerpt of a 6-minute performance.

The score for Brown's work is shown in Figure 1 (Brown's December).

---

**Brown's December**



**Figure 1**

---

The composer offers no suggestions as to how to interpret the image: All decisions are left up to the performer. Brown's goal was to provide the impetus for a musical performance but not to impose an outcome. With such ambiguity in the notation, enormous variation in performance is possible.

Ambiguity in notation represents perhaps the greatest extreme reached in modern music. The more the musical text leaves open, the more it moves away from the constructive clarity of the classical era.

## Listening to Ambiguity

### Tolerating the Ambiguity

In Samuel Beckett's "Waiting for Godot," two vagabonds—Vladimir and Estragon—await the arrival of a mysterious visitor, Godot. Godot's arrival is anticipated, it is hoped for, it is repeatedly heralded—but it never happens. No matter how many times you see the play, Godot will never appear. Similarly, the ambiguities in a modern musical work are **built in and can never be removed**. Acknowledging this is the first step to a deeper understanding. Listeners are so often frustrated because they expect the ambiguities eventually to be clarified—if only they knew more or could listen more attentively. Doing so does not **remove** the ambiguities, it only makes them more **acute** and **palpable**.

### Thinking Clearly About Ambiguity

Once you learn to tolerate the ambiguity, you can begin to discover its source. Are pulse and meter absent or erratic? Is dissonance heightened? Is the continuity unpredictable? Is there minimal exposition? Perpetual variation? Do noise and silence figure prominently? Any or all of these may contribute to the work's open-endedness.

Considering the sources of the ambiguity will help you relate different pieces to each other and enable you to become more articulate about what you hear.

### Ask Comprehensive Questions

When listening to a modern work, the most effective way to surmount the challenges created by an individualized musical language is to ask comprehensive questions that are not style specific.

Each of the questions below is addressed in its own module:

- What is the form of the work? If it is an "A-type" form? If so, what is being prolonged? Is it an "A/B-type form"? If so, how is contrast created and where does it occur? [Musical Form (Section )]
- What is the balance of expository and developmental sections? [Expository and Developmental]
- What is the overall destiny of the work? Do you consider it a strong round-trip, weak roundtrip or one-way progression? [Overall Destiny (Section )]
- What is time's effect upon the material? Does any music ever return in its original form? Or is it always subjected to transformation? [Time's Effect on the Material (Section )]

### Be Prepared for more Personal Reactions

Progressive modern works often do not strongly direct the listener's attention: There may not be a clear hierarchy of theme and accompaniment; structural arrival points may be more subtle or evasive. Be prepared for your reaction to be more personal; and be prepared for your perspective to change with repeated hearings, as you focus on different aspects of the work.

## Celebrating Ambiguity

In the same way that a Jackson Pollock drip painting will never resolve itself into a clear image, the ambiguity in a progressive modern composition **is irreversible**. Whether it is now or in fifty or five hundred years, the only way to appreciate such music is to learn to **sustain, tolerate** and **celebrate** the ambiguity. There's nothing that we can do to make the ending of Boulez's *Dérive* sound like the end of Beethoven's 5th. We cannot remove the noise from *Dark Angels* or make a single performance of Earle Brown's December 1952 definitive.

In an art form that is already abstract and non-verbal, heightening the ambiguity only increases the feelings of isolation and uncertainty. In addition, music is conventionally taught using concepts and terms specific to the common practice era. This training conditions listeners to certain expectations that modern music often fails to meet, leaving them baffled. To enjoy modern music, you must recognize the integrity of our own experience with the music—you must learn to **trust your ears**. You must also learn to abandon your pre-conceptions and listen in a style-independent way.

Most of us live comfortably in a Newtonian world, with modern advances in physics only at the periphery of our awareness. In a recent Op-Ed piece in the New York Times, the physicist Brian Greene lamented that, even one hundred years after Einstein's insights, the Theory of Relativity has not yet infiltrated our daily experience. In life and in music, we often long for clarity. And yet, in so many ways, we are learning how deeply ambiguity is embedded in our experience and how acknowledging and tolerating it enlarges our spirit. Progressive modern music offers one of the safest ways to experience ambiguity. If we can learn to reckon with modern music with an open mind and careful attention, it may help us deal more patiently and constructively with a world filled with contradictions and paradoxes.

# Listening Gallery: Making Music Modern<sup>21</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

## Exercise 55

How is ambiguity created in the following excerpt?

This media object is an audio file. Please view or download it at

<[http://music.cnx.rice.edu/Brandt/musicmodern/webern\\_sixpieces.mp3](http://music.cnx.rice.edu/Brandt/musicmodern/webern_sixpieces.mp3)>

*(select all that apply)*

- a) More personal musical language
- b) Changing pulse and meter
- c) Unpredictable continuity
- d) Absence of literal repetition
- e) Heightened dissonance
- f) Dissonances left unresolved

## Exercise 56

How is ambiguity created in the following excerpt?

This media object is an audio file. Please view or download it at

<[http://music.cnx.rice.edu/Brandt/musicmodern/young\\_wisp.mp3](http://music.cnx.rice.edu/Brandt/musicmodern/young_wisp.mp3)>

*(select all that apply)*

- a) More personal musical language
- b) Prominent use of silence
- c) Weakened sense of pulse and meter
- d) Absence of literal repetition
- e) Unpredictable continuity
- f) Dissonances left unresolved

## Exercise 57

How is ambiguity created in the following excerpt?

This media object is an audio file. Please view or download it at

<[http://music.cnx.rice.edu/Brandt/musicmodern/carter\\_eightetudes.mp3](http://music.cnx.rice.edu/Brandt/musicmodern/carter_eightetudes.mp3)>

*(select all that apply)*

- a) More personal musical language
- b) Prominent use of silence
- c) Minimal exposition
- d) Harmonic independence

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<sup>21</sup>This content is available online at <<http://cnx.org/content/m13844/1.6/>>.

- e) Heightened dissonance
- f) Absence of literal repetition
- g) Weak rhetorical reinforcement

**Exercise 58**

How is ambiguity created in the following excerpt?

This media object is an audio file. Please view or download it at  
<[http://music.cnx.rice.edu/Brandt/musicmodern/feldman\\_threedances.mp3](http://music.cnx.rice.edu/Brandt/musicmodern/feldman_threedances.mp3)>

*(select all that apply)*

- a) More personal musical language
- b) Prominent use of silence
- c) Weakened sense of pulse and meter
- d) Absence of literal repetition
- e) Unpredictable continuity
- f) Heightened dissonance
- g) Dissonances left unresolved

# Conclusion: What is Music Trying to Express?<sup>22</sup>

Language fulfills so many needs for us: We can be mundane or lofty, can speak factually or philosophically, make specific observations or generalizations. We can describe our interior thoughts as well as the outside world. We can speak of events long gone or yet to be.

Music is often called the “universal language.” But if music is a language, what can it express?

Music is singularly capable of exploring how the future arises out of the past. How dependent is the future on the past? How much is remembered, how much forgotten? Are initial ideas self-sustaining, or do they require an influx of new elements? How fast does progress or transformation take place? What is the ultimate outcome?

We compose our lives with these questions: How strongly are we bound by our upbringing or heritage? How easy is it to break our habits? How far and fast can we stretch our personality while still maintaining a sense of identity? How much transformation can we tolerate? On a social level, we ponder whether the Constitution and religious texts are “time-independent” documents or living ones that evolve. We question the pace of reforms and the consequences of unexpected events.

Words may describe time’s passing but music enacts it for us. For instance, the greater the amount of repetition, the more the future is conditioned by what has already happened. If an idea returns literally, it speaks to its transcendence; if it is perpetually transformed, then it changes with the times. A-type forms project continuity, A/B-forms disruption and change.

When this level of musical discourse becomes accessible to you, there is always so much to hear. Because music is performed unstoppably in time, it will always invoke these questions—no matter what the style or era. The answers will sometimes be clear, sometimes grey and subtle; but the pathway to exploring them is concrete and can be done by anyone.

These abstract issues can be palpably emotional. The boundary between waking and sleeping is a vague one. Therefore, a lullaby should not be a strongly rhetorically reinforced A/B-form: “Now you’re awake;” “OK, now you’re asleep.” Instead, the fact that a lullaby is an A-form contributes to its tranquility; a preponderance of exposition, with time gradually weakening the material, helps hypnotize us into sleep. These formal features are not separate from the emotional content—they help to **create** it.

Time’s passing is apparent to all of us: We measure it constantly; we see ourselves age, we suffer loss and celebrate renewal, we remember and predict. Yet physicists labor over a definition. Is time a fundamental property of the universe? Or is it just a by-product of the interaction of more basic laws? Does it even exist? Thanks to the limitless possibilities of music, composers bend and stretch time into sculptures for us to contemplate. As music is passed down and continues to be created all over the world, it becomes apparent what a rich and resilient material time is, and how much there is to say about its incorporeal flow.

In a recent article in the “New Yorker” magazine, author Milan Kundera quotes Marcel Proust: “Every reader, as he reads, is actually the reader of himself. The writer’s work is only a kind of optical instrument he provides the reader so he can discern what he might never have seen in himself without this book.” Proust’s remark applies equally well to music. That is why it is so important to grasp, respect and articulate our

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<sup>22</sup>This content is available online at <<http://cnx.org/content/m13846/1.8/>>.



own musical observations. Ultimately, attentive listening leads us to the music inside ourselves. How much of it there is.

# Chapter 1

## Part II: Hearing Harmony

### 1.1 Hearing Harmony: What is Harmony?<sup>1</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

In **monophonic music**, only one note is played at a time. Much indigenous music consists of solo or group voices or one-note-at-time instruments, such as the flute, often accompanied by drums or a drone.

#### Example 1.1

This media object is an audio file. Please view or download it at  
<Navajo>

#### Example 1.2

This media object is an audio file. Please view or download it at  
<Shakuhachi>

The earliest notated Western music—from the Middle Ages—consists of unaccompanied singing, called **chant**.

#### Example 1.3

This media object is an audio file. Please view or download it at  
<Gregorian>

In **harmonic music**, more than one note is played at a time.

In the last movement of his **Symphonie Fantastique**, Hector Berlioz adds harmony to the “Dies Irae” melody.

#### Example 1.4

This media object is an audio file. Please view or download it at  
<Berlioz02>

The melody of the “Ode to Joy” from Beethoven's **Symphony No. 9** is introduced by the cellos alone.

#### Example 1.5

This media object is an audio file. Please view or download it at  
<Beethoven43>

Eventually, the full orchestra joins in triumphantly in harmony.

#### Example 1.6

This media object is an audio file. Please view or download it at  
<Beethoven44>

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<sup>1</sup>This content is available online at <<http://cnx.org/content/m34482/1.3/>>.

The opening theme of Wolfgang Amadeus Mozart's **Piano Concerto No. 24** is presented first alone by the strings, then in full harmony by the orchestra.

**Example 1.7**

This media object is an audio file. Please view or download it at

<Mozart27>

Harmony can shade a melody and recast it with a new affect; it can anchor the music or propel it forward; it can create a sense of intimate scale or grand architecture; it can make music seem to shine or darken, charm, soothe or startle. The goal of **Hearing Harmony** is to enable you to have a greater understanding of harmony **by ear**.

Most often, harmonic ear training involves learning to recognize the individual chords of Western tonal music. There are several limitations to this approach: First, even for musicians, it takes a lot of exposure and practice to aurally follow harmonic progressions. Second, ear training exercises are usually short and are typically repeated several times. Keeping up with the harmony in an actual performance is much more challenging. Third, while details matter, the chord-based approach often neglects to train students to hear the larger structure of a classical piece. Finally, conventional ear training leaves listeners poorly prepared for the harmonic avant-garde of music since 1900.

**Hearing Harmony** takes an innovative **top down** approach: Its goal is not to recognize individual chords but to develop an understanding of **harmonic structure**. **Hearing Harmony** is compatible with standard courses in harmony and ear training: Very little of the material introduced here is idiosyncratic; it is how it is organized and presented that is new. After completing these modules, you will be well equipped for conventional training, either in school or from the many fine resources on the web. **Hearing Harmony** can also be used to build on prior training.

Ear training classes are typically taught from the keyboard. In **Hearing Harmony**, you will be listening to actual music, facilitating the transition from **classroom to concert hall**.

We speak of colors and flavors being in **harmony** or **clashing**, but our ears are particularly discriminating: Music gains a great deal of variety and vibrancy from the nuances of harmony. Working through the modules of **Hearing Harmony** will enable you to follow **harmonic structure** more confidently and make your experience of music richer, more alert, sensitive and complete.

## 1.2 Harmony in Western Music<sup>2</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

Harmonic practice in Western music evolved gradually over hundreds of years. At first, voices joined in **unison** to sing a **melody**. In the early Middle Ages, monophonic chant became **parallel organum**, where voices followed identical contours but with small improvisations.

**Example 1.8**

This media object is an audio file. Please view or download it at

<Veni Creator Spiritus.mp3>

Over time, the **organum** became more elaborate, with each voice becoming more independent. In this excerpt from **Leonin**, one voice moves slowly while the other more floridly decorates the melody.

**Example 1.9**

This media object is an audio file. Please view or download it at

<Organum.Viderunt omnes.mp3>

When the added voices broke free from the original melody, **polyphony**—multiple parts played together—was born.

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<sup>2</sup>This content is available online at <<http://cnx.org/content/m35111/1.1/>>.

**Example 1.10**

This media object is an audio file. Please view or download it at  
 <Perotin.Sederunt\_principes.mp3>

Once music was notated, as opposed to improvised, composers became interested in studying and controlling the vertical possibilities. Still, music was primarily viewed “horizontally”—that is, as the sum of melodies. Just as social institutions arose to enable people to live together, harmony began as a way of enabling melodies to “coexist.”

**Example 1.11**

This media object is an audio file. Please view or download it at  
 <Palestrina.Kyrie.mp3>

Whereas “harmony” is not a well-defined and separate category in the music of many cultures, it became a central pre-occupation of European music. Chords were classified; progressions were created that were shared from piece to piece. Whereas harmony originated as the result of melodies being combined, now the reverse could happen: Harmony could generate melodies.

For instance, a harmonic progression nicknamed the “**Gregory Walker**” underlies many American folk songs, including **Boil Them Cabbages** and **Home on the Range**.

**Example 1.12**

This media object is an audio file. Please view or download it at  
 <Boil Them Cabbages.mp3>

**Example 1.13**

This media object is an audio file. Please view or download it at  
 <Home on the Range.mp3>

When harmonic progressions started to get nicknames, a lot had changed since the 14<sup>th</sup> century! Just as social institutions can develop their own identity and legacy, harmonic practice took on a life of its own. Thinking harmonically has now become common-place: Pop and jazz artists frequently perform from lead sheets that indicate the chord changes. Throughout the world, melodies that were originally performed **monophonically** are now harmonized. What began as a resultant property of melodies became a foundation of music.

## 1.3 Expressing Harmony<sup>3</sup>

NOTE: Please note that you must have the most recent copy of Macromedia’s Flash plugin installed to play the musical examples.

The terms **chord** and **harmony** refer to music’s **vertical dimension**: They are a way of describing music that is being played at one time.

A sequence of harmonic changes is called a **harmonic** or **chord progression**. A **harmonic progression** may be expressed in a variety of ways. Most simply, it can be presented as series of “**block**” chords. Here, melodic interest is reduced; the focus is on the chord changes.

**Example 1.14**

This media object is an audio file. Please view or download it at  
 <Chopin01>

More elaborately, it can be presented as **figuration**, for instance on the piano: Each chord is presented as a “**cascade**” or “**swirl**” rather than as a “**block**.”

**Example 1.15**


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<sup>3</sup>This content is available online at <<http://cnx.org/content/m35099/1.4/>>.

This media object is an audio file. Please view or download it at  
<Bach36.mp3>

A **chord progression** may accompany a melody. In this excerpt from Frederic Chopin's **Piano Concerto No. 1**, the piano's melody is supported by harmony in the orchestra and the pianist's lower register.

**Example 1.16**

This media object is an audio file. Please view or download it at  
<Chopin02>

In this excerpt from Antonin Dvorak's **Symphony No. 9, "From the New World,"** the brass melody is punctuated by powerful chords.

**Example 1.17**

This media object is an audio file. Please view or download it at  
<Dvorak04>

In its most intricate form, a **harmonic progression** may be created by the super-position of individual lines. The terms **counterpoint** and **polyphony** refer to music made up of multiple voices or lines moving independently. In Western Common Practice music, there is a union of harmony and counterpoint: Polyphony produces recognizable **harmonic progressions**.

Johann Pachelbel's **Canon in D** opens with the following **harmonic progression** in block chords.

**Example 1.18**

This media object is an audio file. Please view or download it at  
<Pachelbel01>

Pachelbel then invents melodic lines that grow out of this progression. In this excerpt, a faster moving line is superimposed against slower moving ones.

**Example 1.19**

This media object is an audio file. Please view or download it at  
<Pachelbel02>

**Voicing** refers to how a harmony is distributed among the various instruments or voices. Changes in **voicing** allow a **harmonic progression** to be re-expressed in new ways.

This theme from Franz Schubert's **Cello Quintet in C** is first played by the lower strings, with the accompaniment above.

**Example 1.20**

This media object is an audio file. Please view or download it at  
<Schubert20>

The theme is repeated a short time later but with the voices flipped: This time, the melody is in the upper strings and the accompaniment below.

**Example 1.21**

This media object is an audio file. Please view or download it at  
<Schubert21>

In Debussy's **Reverie**, the main melody is first harmonized by an accompaniment by that lies beneath.

**Example 1.22**

This media object is an audio file. Please view or download it at  
<Debussy04>

Later, the **voicing** is changed: Now the melody is in the middle, with the accompaniment on either side.

**Example 1.23**

This media object is an audio file. Please view or download it at  
<Debussy03>

**Voice-leading** refers to how individual lines move within a chord sequence. The same progression can be **voice-led** in many different ways. The **Scherzo** of Antonin Dvorak's **Symphony No. 7** opens with this passage.

**Example 1.24**

This media object is an audio file. Please view or download it at  
<Dvorak01>

The progression is brought back later with more elaborate **voice-leading**.

**Example 1.25**

This media object is an audio file. Please view or download it at  
<Dvorak03>

The term **texture** is a way of describing how multiple factors can influence the expression of harmony: **Instrumentation**, **voicing**, **voice-leading**, **register** and **rhythm** all can contribute to changes in **texture**. When this theme is first presented in Ludwig van Beethoven's **Symphony No. 8**, the upper strings and winds share the theme.

**Example 1.26**

This media object is an audio file. Please view or download it at  
<Beethoven41>

When the melody returns later, the melody is now in the lower strings. Not only that, the orchestration is different: The winds are silent; and the upper strings have added a new element - **repeated notes**.

**Example 1.27**

This media object is an audio file. Please view or download it at  
<Beethoven42>

In Maurice Ravel's **Bolero**, the same melody and **harmonic progression** are repeatedly cycled in a giant loop: Interest is sustained by changes in the orchestral **texture**.

**Example 1.28**

This media object is an audio file. Please view or download it at  
<Ravel02>

**Example 1.29**

This media object is an audio file. Please view or download it at  
<Ravel03>

Thanks to all of this flexibility, the same progression can be repeated with constant novelty. For instance, in a classical **Theme and Variations**, the **harmonic progression** of the theme is presented over and over but never the same way twice.

The following excerpts enable you to compare a fragment of the **theme** from the **Gavotte** of Igor Stravinsky's **Pulcinella Suite** with one of its **variations**: The underlying **harmonic progression** is the same but Stravinsky varies the **orchestration** and **accompaniment**.

**Example 1.30**

This media object is an audio file. Please view or download it at  
<Stravinsky09>

**Example 1.31**

This media object is an audio file. Please view or download it at  
<Stravinsky08>

The following three variations from Beethoven's **Eroica Variations** for piano all share the same **harmonic progression**. Can you tell you which variation stretches out one of the harmonies?

**Example 1.32**

This media object is an audio file. Please view or download it at  
<Beethoven06>

**Example 1.33**

This media object is an audio file. Please view or download it at  
<Beethoven05>

**Example 1.34**

This media object is an audio file. Please view or download it at  
<Beethoven04.mp3>

The alphabet can be represented by a variety of fonts: Yet, though type-faces may vary considerably, they still represent the same letters. Similarly, thanks to variations in **voicing**, **voice-leading** and **texture**, **harmony** can be re-expressed a virtually limitless number of ways.

## 1.4 Listening Gallery: Expressing Harmony<sup>4</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

For each exercise, decide if both excerpts follow the **identical** progression.

**Exercise 1.4.1**

(Solution on p. 153.)

This media object is an audio file. Please view or download it at  
<Handel02>

This media object is an audio file. Please view or download it at  
<Handel03>

(select one)

- a) Yes, Excerpt 1 and Excerpt 2 share the same harmonic progression.
- b) No, Excerpt 1 and Excerpt 2 have different harmonic progressions.

**Exercise 1.4.2**

(Solution on p. 153.)

This media object is an audio file. Please view or download it at  
<Schubert19>

This media object is an audio file. Please view or download it at  
<Schubert04>

(select one)

- a) Yes, Excerpt 1 and Excerpt 2 share the same harmonic progression.
- b) No, Excerpt 1 and Excerpt 2 have different harmonic progressions.

**Exercise 1.4.3**

(Solution on p. 153.)

This media object is an audio file. Please view or download it at  
<Reger01>

This media object is an audio file. Please view or download it at  
<Reger02>

(select one)

- a) Yes, Excerpt 1 and Excerpt 2 share the same harmonic progression.
- b) No, Excerpt 1 and Excerpt 2 have different harmonic progressions.

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<sup>4</sup>This content is available online at <<http://cnx.org/content/m35159/1.1/>>.

**Exercise 1.4.4***(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Mozart11>

This media object is an audio file. Please view or download it at  
<Mozart01>

*(select one)*

- a) Yes, Excerpt 1 and Excerpt 2 share the same harmonic progression.
- b) No, Excerpt 1 and Excerpt 2 have different harmonic progressions.

**Exercise 1.4.5***(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Bach29>

This media object is an audio file. Please view or download it at  
<Bach28>

*(select one)*

- a) Yes, Excerpt 1 and Excerpt 2 share the same harmonic progression.
- b) No, Excerpt 1 and Excerpt 2 have different harmonic progressions.

**Exercise 1.4.6***(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Beethoven13>

This media object is an audio file. Please view or download it at  
<Beethoven14>

*(select one)*

- a) Yes, Excerpt 1 and Excerpt 2 share the same harmonic progression.
- b) No, Excerpt 1 and Excerpt 2 have different harmonic progressions.

## 1.5 Harmonic Rhythm<sup>5</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

**Harmonic rhythm** is the speed at which the harmony changes. It is different from the surface rhythmic activity: For instance, in this excerpt from Steve Reich's **Music for Large Ensemble**, there is a lot of surface rhythmic motion; however, the harmony is holding steady.

**Example 1.35**

This media object is an audio file. Please view or download it at  
<Reich01.mp3>

On the other hand, in this excerpt, there is less surface rhythmic activity, but the harmony is constantly changing.

**Example 1.36**

This media object is an audio file. Please view or download it at  
<Schumann09.mp3>

In this excerpt from Ludwig van Beethoven's **Symphony No. 3**, the same progression is played twice—only the **harmonic rhythm** changes.

<sup>5</sup>This content is available online at <<http://cnx.org/content/m35113/1.1/>>.



**Example 1.37**

This media object is an audio file. Please view or download it at  
 <Beethoven50.mp3>

The pacing of **harmonic rhythm** is a key component of our subjective sense of time passing: When the **harmonic rhythm** is slow, time feels suspended; when the harmony is propelled forward, time seems to push ahead. In this excerpt from Richard Wagner’s **Dawn and Siegfried’s Rhine Journey**, the harmonic rhythm doubles in speed.

**Example 1.38**

This media object is an audio file. Please view or download it at  
 <Wagner02.mp3>

In this excerpt from the **Finale** of Sergei Rachmaninoff’s **Piano Concerto No. 3**, the **harmonic rhythm** slows when the piano enters.

**Example 1.39**

This media object is an audio file. Please view or download it at  
 <Rachmaninoff01.mp3>

In this excerpt from Giuseppe Verdi’s **Rigoletto**, the **harmonic rhythm** slows at the end of each phrase. The second time, the harmony stops moving altogether and the voice performs an elaborate solo.

**Example 1.40**

This media object is an audio file. Please view or download it at  
 <Verdi01.mp3>

A slowing of **harmonic rhythm** is used to great dramatic effect in Richard Strauss’ opera **Der Rosenkavalier**. The young Sophie is betrothed to the loathsome Baron Ochs. By tradition, the Baron sends a messenger to present a silver rose to his fiancée. As Sophie’s household bustles frantically about, preparing for the presentation of the rose; the harmony moves swiftly. At the moment that the handsome messenger appears and Sophie and he see each other for the first time, Strauss creates the illusion that “time stops” by arresting the **harmonic rhythm**.

**Example 1.41**

This media object is an audio file. Please view or download it at  
 <RStrauss.Rose.mp3>

In Thomas Mann’s novel **The Magic Mountain**, the patients at the tuberculosis clinic have a choice: If they confine themselves to bed rest, they have a chance to recover; if they become excited and their pulse quickens, they risk death. Each choice creates a different experience of time: With bed rest, time seems to pass very slowly; but, in retrospect, it seems to have gone by “in a blink of an eye,” because the days all flow together. On the other hand, being active makes time pass more quickly; but, looking back, time seems to have “thickened” and slowed down, because each day is more jam-packed and memorable. So it is with harmony: very slow **harmonic rhythm** is similar to bed rest; fast **harmonic rhythm** is similar to greater activity. Just as daily life has ebbs and flows of psychological time, so most classical works have fluctuating **harmonic rhythms**.

## 1.6 Listening Gallery: Harmonic Rhythm<sup>6</sup>

NOTE: Please note that you must have the most recent copy of Macromedia’s Flash plugin installed to play the musical examples.

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<sup>6</sup>This content is available online at <<http://cnx.org/content/m35162/1.1/>>.

In each example, does the **harmonic rhythm** speed up, slow down or stay the same?

**Exercise 1.6.1**

*(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Schubert23>

*(select one)*

- a) The harmonic rhythm speeds up
- b) The harmonic rhythm slows down
- c) The harmonic rhythm stays the same

**Exercise 1.6.2**

*(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Bach45>

*(select one)*

- a) The harmonic rhythm speeds up
- b) The harmonic rhythm slows down
- c) The harmonic rhythm stays the same

**Exercise 1.6.3**

*(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Chopin07>

*(select one)*

- a) The harmonic rhythm speeds up
- b) The harmonic rhythm slows down
- c) The harmonic rhythm stays the same

**Exercise 1.6.4**

*(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Bach52>

*(select one)*

- a) The harmonic rhythm speeds up
- b) The harmonic rhythm slows down
- c) The harmonic rhythm stays the same

**Exercise 1.6.5**

*(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Berlioz06>

*(select one)*

- a) The harmonic rhythm speeds up
- b) The harmonic rhythm slows down
- c) The harmonic rhythm stays the same

What happens to the harmonic rhythm when the choir sings "Parum sexcentenummate"?

**Exercise 1.6.6**

*(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Orff2>

*(select one)*

- a) The harmonic rhythm speeds up
- b) The harmonic rhythm slows down
- c) The harmonic rhythm stays the same

**Exercise 1.6.7***(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Orff1>

*(select one)*

- a) The harmonic rhythm speeds up
- b) The harmonic rhythm slows down
- c) The harmonic rhythm stays the same

**1.7 Cadences**<sup>7</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

A **cadence** is a **harmonic arrival point**. **Cadences** are the pillars of **harmonic structures**; They mark a work's harmonic destinations.

In the Chorale settings of J.S. Bach, the **rhythm** pauses at each **cadence**.

**Example 1.42**

This media object is an audio file. Please view or download it at  
<Bach22>

In other music, **cadences** punctuate the end of **phrases**.

**Example 1.43**

This media object is an audio file. Please view or download it at  
<Beethoven33>

**Cadences** serve as a **musical GPS**: They help you locate yourself harmonically. If the **cadences** keep returning to the same chord, the harmonic voyage is very circumscribed. In this excerpt from Ludwig van Beethoven's **Piano Concerto No. 3 in c-minor**, the music wanders harmonically but keeps cadencing to the same **harmonic goal**. The last of these **cadences**, just before the piano enters, is particularly emphatic.

**Example 1.44**

This media object is an audio file. Please view or download it at  
<Beethoven03>

This excerpt from Arvo Pärt's **Fratres** creates a solemn stasis by repeatedly **cadencing** in the same place.

**Example 1.45**

This media object is an audio file. Please view or download it at  
<Part.Fratres>

If, however, the **cadences** roam more widely, the **harmonic structure** is more adventurous. In this example from Wolfgang Amadeus Mozart's **Piano Concerto No. 17 in G-Major**, the cadence points change, propelling the music towards new goals.

**Example 1.46**

This media object is an audio file. Please view or download it at  
<Mozart32>

The central advice of **Hearing Harmony** is “**Listen for cadences, not for chords.**” Cadences reveal crucial information: They tell you the mode; and they show you if the harmony is moving or staying put. As we will explore in the succeeding modules, following the trajectory of the **cadences** is the key to hearing large-scale **harmonic structure**.

<sup>7</sup>This content is available online at <<http://cnx.org/content/m35089/1.1/>>.

## 1.8 Listening Gallery: Cadences<sup>8</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

Please identify if the cadences are **fixed** or **roaming**.

### Exercise 1.8.1

*(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Orff3>

*(select one)*

- a) Fixed cadence goal
- b) Roaming cadences

### Exercise 1.8.2

*(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Bach53>

*(select one)*

- a) Fixed cadence goal
- b) Roaming cadences

### Exercise 1.8.3

*(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Handel07>

*(select one)*

- a) Fixed cadence goal
- b) Roaming cadences

### Exercise 1.8.4

*(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Berlioz07b>

*(select one)*

- a) Fixed cadence goal
- b) Roaming cadences

### Exercise 1.8.5

*(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Schumann02>

*(select one)*

- a) Fixed cadence goal
- b) Roaming cadences

### Exercise 1.8.6

*(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Strauss03>

*(select one)*

- a) Fixed cadence goal
- b) Roaming cadences

### Exercise 1.8.7

*(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Mozart41>

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<sup>8</sup>This content is available online at <<http://cnx.org/content/m35144/1.2/>>.

(select one)

- a) Fixed cadence goal
- b) Roaming cadences

#### Exercise 1.8.8

(Solution on p. 153.)

This media object is an audio file. Please view or download it at  
<Verdi04>

(select one)

- a) Fixed cadence goal
- b) Roaming cadences

#### Exercise 1.8.9

(Solution on p. 153.)

This media object is an audio file. Please view or download it at  
<Beethoven57>

(select one)

- a) Fixed cadence goal
- b) Roaming cadences

## 1.9 The Tonic<sup>9</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

The **tonic** is the pitch that, when reached with clarity and emphasis, represents maximum stability, order and repose in a piece of **tonal** music. It is often described as "home-base," likened to the Sun in our solar system, the King in chess or a play's protagonist and represents the music's **ultimate goal**. As far as a key goes, you subscribe to the **tonic's** "tweets"; all the rest of the pitches are paparazzi.

Virtually all Western classical works end on the **tonic**.

#### Example 1.47

This media object is an audio file. Please view or download it at  
<Beethoven37>

The **tonic** is an important feature of world of many traditions. In Indian classical music, it is established as a **drone** that anchors the composition. In this excerpt from a raga performance by Ravi Shankar, the **drone** is the **tonic** chord.

#### Example 1.48

This media object is an audio file. Please view or download it at  
<Shankar.Tonic>

In indigenous melodies, it is a frequent **resting point** or **goal of motion**.

#### Example 1.49

This media object is an audio file. Please view or download it at  
<Andes01>

Western classical music uses **harmonic progressions** to support the **tonic**. A **tonic cadence** is the strongest harmonic affirmation of the **tonic**. This short excerpt from Antonin Dvorak's **Symphony No. 7** includes repeated **tonic cadences**. After listening to the example, can you sing the **tonic** pitch?

<sup>9</sup>This content is available online at <<http://cnx.org/content/m35128/1.1/>>.

**Example 1.50**

This media object is an audio file. Please view or download it at  
<Dvorak02>

The early twentieth composer Claude Debussy experimented with novel ways to affirm the tonic. The ending of his piano piece **Ondine** goes beyond Common Practice tradition; nevertheless, the **tonic** resolution is decisive.

**Example 1.51**

This media object is an audio file. Please view or download it at  
<Debussy02>

The music of twentieth-century composer Bela Bartok offers further examples of establishing a **tonic** by non-traditional means: In this excerpt from the **Music for Strings, Percussion and Celeste**, the **tonic** is the focal point of two symmetric lines that converge on it.

**Example 1.52**

This media object is an audio file. Please view or download it at  
<Bartok04>

Music that does not have a **tonic** is called **non-tonal** or **atonal**. In such works, no pitch represents maximum order, rest and stability: It's as if you're following a large community of blogs and tweets. Milton Babbitt's **atonality** is created from a dense polyphonic web.

**Example 1.53**

This media object is an audio file. Please view or download it at  
<Babbitt01>

In his **Requiem**, Gyorgy Ligeti's **atonality** is created by squeezing the voices into a tight cluster where individual pitches are no longer easily discriminated.

**Example 1.54**

This media object is an audio file. Please view or download it at  
<Ligeti01>

Scientists are working to understand why the **tonic** is so widespread in musical cultures: It may be related to the human need to establish a **viewpoint** or **frame of reference** against which to evaluate relationships; it also appears to make music easier to remember and sing. Chord progressions have evolved through different eras and vary between musical genres; but as long as there is one pitch that represents the central focal point, the **music can be described as tonal**.

## 1.10 Circular and Linear Progressions<sup>10</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

A **circular progression** cycles the same harmonic pattern over and over again: The harmonies revolve like a spinning merry-go-round.

**Circular progressions** are common in commercial music. The theme song from the television series "The Office" is based on one.

**Example 1.55**

This media object is an audio file. Please view or download it at  
<Office>

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<sup>10</sup>This content is available online at <<http://cnx.org/content/m35093/1.1/>>.

**Circular progressions** are also ubiquitous in improvisatory and participatory music: They allow for independence and spontaneity within a shared, reliable framework. Jazz’s “**12-bar blues**” and “**Boogie-Woogie**” bass-line are iconic examples.

**Example 1.56**

This media object is an audio file. Please view or download it at  
<Boogie>

In classical music, chaconnes, passacaglias and theme and variations incorporate circular progressions. Each time the progression is played, it is expressed in a new way. This excerpt from Georg Friedrich Handel’s *Passacaglia in g-minor* cycles the harmonic progression four times.

**Example 1.57**

This media object is an audio file. Please view or download it at  
<Handel04>

In this excerpt from Sergei Prokofiev’s **Violin Concerto No. 2**, the solo violin traces its languorously evolving melody over a **circular progression**, which cycles eight times. Only in the last cycle is there is a small change in the **harmonic progression**.

**Example 1.58**

This media object is an audio file. Please view or download it at  
<Prokofiev01>

On the other hand, a **linear progression** keeps changing, incorporating new chords and patterns. This excerpt from Wolfgang Amadeus Mozart’s **Piano Concerto No. 24 in c-minor** is a **linear progression**.

**Example 1.59**

This media object is an audio file. Please view or download it at  
<Mozart23>

**Circular progressions** are frequently used for sustaining a mood or elaborating on a state of mind. **Linear progressions** serve a stronger narrative purpose: They allow the music to progress to new destinations and incorporate greater contrast. Most **commercial songs** consist of **circular progressions**: The words may tell a story but the harmony generally revolves in a circle. In contrast, **classical music** generally incorporates **both** types: As a result, the music itself can tell an expansive, evolving tale.

## 1.11 Listening Gallery: Circular and Linear Progressions<sup>11</sup>

NOTE: Please note that you must have the most recent copy of Macromedia’s Flash plugin installed to play the musical examples.

For each musical excerpt, decide whether it contains a **Circular** or **Linear** harmonic progression.

**Exercise 1.11.1**

(Solution on p. 153.)

This media object is an audio file. Please view or download it at  
<Respighi01>

(select one)

- a) Circular
- b) Linear

**Exercise 1.11.2**

(Solution on p. 153.)

This media object is an audio file. Please view or download it at  
<Bach31>

(select one)

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<sup>11</sup>This content is available online at <<http://cnx.org/content/m35151/1.2/>>.

- a) Circular
- b) Linear

**Exercise 1.11.3***(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<OnHer>

- (select one)
- a) Circular
  - b) Linear

**Exercise 1.11.4***(Solution on p. 153.)*

This media object is an audio file. Please view or download it at  
<Shostakovich02>

- (select one)
- a) Circular
  - b) Linear

**Exercise 1.11.5***(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Schumann07>

- (select one)
- a) Circular
  - b) Linear

**Exercise 1.11.6***(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Debussy01>

- (select one)
- a) Circular
  - b) Linear

**Exercise 1.11.7***(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Debussy08>

- (select one)
- a) Circular
  - b) Linear

**Exercise 1.11.8***(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Mahler05>

- (select one)
- a) Circular
  - b) Linear



## 1.12 The Major-minor Contrast<sup>12</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

### 1.12.1 Common Practice Tonality

From about 1600 to 1900, Western music embraced a harmonic language that has come to be called “**Common Practice tonality**.” Around the turn of the 20th century, progressive composers such as **Claude Debussy**, **Arnold Schoenberg** and **Igor Stravinsky** moved away from traditional **tonality**; the result was a breakdown in **Common Practice** that continues to this day. In most of “**Sound Reasoning**,” we have studied music as an abstract artform, with generalized principles that apply to any style or era. Harmony, however, is rooted in style: The way harmony behaves in a classical work—what it can say and how it says it—is different from how it does so in an avant-garde twentieth century work. Because **Common Practice tonality** underlies the Western classical tradition and has proven to be so influential, our study of harmony begins here.

### 1.12.2 The Major-minor Contrast

The contrast between the **Major** and **minor** modes is the harmonic foundation of Western classical music.

**Major:**

**Example 1.60**

This media object is an audio file. Please view or download it at  
<Wagner03>

**minor:**

**Example 1.61**

This media object is an audio file. Please view or download it at  
<Bach37>

To composers of the **Common Practice** era, everything about human experience—love and loss, triumph and calamity, private reflection and public proclamations, the material and the spiritual, the civilized and the wild—could be expressed either in **Major** or **minor**. In the twentieth century, avant-garde composers went beyond this duality. But, throughout the classical era, the entire musical universe consisted almost exclusively of music in **Major** or **minor**. For this reason, recognizing the difference between music in **Major** and **minor** is vital to hearing **Common Practice harmony**.

Musical meaning should always be considered provisional and flexible. That said, through a combination of acoustic and cultural factors, the **Major mode** is generally associated with **positive feelings of joy, hopefulness, calm and celebration**, whereas the **minor mode** has a **negative “affect”** and is generally associated with **sadness, anger, despair and fear**. In mainstream Western music, you are unlikely to hear a funeral march in Major or celebrate a marriage in minor.

This excerpt from Wolfgang Amadeus Mozart's **Piano Concerto No. 17 in G-Major** illustrates the drama of the **Major-minor contrast**. The winds begin in **Major**. After a pause, the piano shifts abruptly to **minor** with a striking **change of musical character**.

**Example 1.62**

This media object is an audio file. Please view or download it at  
<Mozart05>

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<sup>12</sup>This content is available online at <<http://cnx.org/content/m35126/1.2/>>.

The musicologist David Huron has demonstrated that there is nothing inherently “sad” or “angry” about **minor**. In fact, there are cultures in which the **minor scale** in the “**normative**” one and is used for **joyous** occasions. Even in the Western tradition, the **Major-minor contrast** evolved over many centuries. However, in the classical repertoire, music in **Major** is almost invariably more upbeat than music in **minor**. Such is the strength of cultural exposure, it is almost impossible for a musically literate Westerner to hear otherwise.

The slow movement of J.S. Bach’s **Concerto in g-minor** begins with a progression in block chords in Major.

**Example 1.63**

This media object is an audio file. Please view or download it at  
<Bach19>

Later, the same progression is played in minor.

**Example 1.64**

This media object is an audio file. Please view or download it at  
<Bach20>

Does the change in mode register as a change in **mood** or **emotional affect**?

Here are two excerpts from Bedrich Smetana’s **Die Moldau**: The first time, the melody is presented in **minor**, the second time in **Major**. Similarly, do you feel, as well as hear a difference between these two excerpts?

**Example 1.65**

This media object is an audio file. Please view or download it at  
<Smetana04>

This media object is an audio file. Please view or download it at  
<Smetana03>

The distinction between **Major** and **minor** is a primary foundation of our study of **Common Practice harmony**.

## 1.13 Modes and Scales<sup>13</sup>

NOTE: Please note that you must have the most recent copy of Macromedia’s Flash plugin installed to play the musical examples.

**Octave equivalence** appears to be a universal feature of human hearing: Two sound frequencies related by a power of 2 are perceived as the same pitch. In Western music, we would give them the same “**letter name**.” Thus, both of these pitches would be called the note “A.”

**Example 1.66**

This media object is an audio file. Please view or download it at  
<MIDI09>

The **half-step** or **semi-tone** is the smallest melodic interval in Western music. It takes twelve half-steps to complete the octave.

**Example 1.67**

This media object is an audio file. Please view or download it at  
<MIDI10>

Two **half-steps** create a **whole step**.

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<sup>13</sup>This content is available online at <<http://cnx.org/content/m35135/1.5/>>.

**Example 1.68**

This media object is an audio file. Please view or download it at  
<MIDI11>

A **scale** is a pattern of steps rising from a tonic pitch. The **Major scale** ascends from the tonic in a fixed pattern of half and whole-steps:

**Example 1.69**

This media object is an audio file. Please view or download it at  
<MIDI12>

Whereas a scale goes straight up and down, a **mode** uses the notes of the scale in any order. Music in the **Major mode** is based on the **Major scale**.

The **Major scale** may be transposed to any of the twelve notes of the chromatic scale. Here is a C-Major scale:

**Example 1.70**

This media object is an audio file. Please view or download it at  
<MIDI13>

Here is a D-Major scale: It has same sequence of whole and half-steps, but starting on a different **tonic**.

**Example 1.71**

This media object is an audio file. Please view or download it at  
<MIDI14>

This melody from Tchaikovsky's **Nutcracker Ballet** travels down the **Major scale**.

**Example 1.72**

This media object is an audio file. Please view or download it at  
<Tchaikovsky01>

The **minor scale** is more complex: It comes in three forms: **natural**, **harmonic** and **melodic**.

**Example 1.73**

This media object is an audio file. Please view or download it at  
<MIDI15>

This media object is an audio file. Please view or download it at  
<MIDI16>

This media object is an audio file. Please view or download it at  
<MIDI17>

Thus, whereas the **Major scale** is always the same going up or down, the **minor scale** is more flexible, as shown in this cello solo from Franz Schubert's **Death and the Maiden**.

**Example 1.74**

This media object is an audio file. Please view or download it at  
<Schubert12>

No matter what the form of minor, one different remains constant: The third scale degree is **always** a half-step lower than in Major.

**Example 1.75**

This media object is an audio file. Please view or download it at  
<MIDI18>

This media object is an audio file. Please view or download it at  
<MIDI19>

One half-step. It might not seem like much, but out of that one distinction, the full expressive richness of **Common Practice** music arises. This excerpt from Enrique Granados' **Andaluza** turns on the fate of the third scale degree.

**Example 1.76**

This media object is an audio file. Please view or download it at  
<Granados01>

The modal conflict is particularly intense in Franz Schubert's **String Quartet No. 15 in G-Major**. In the closing, **Major** and **minor** tonic chords engage in a tug-of-war. Who eventually wins?

**Example 1.77**

This media object is an audio file. Please view or download it at  
<Schubert22>

The Major and minor scales are the basis of their respective modes. Any pitch may serve as tonic. Whereas the Major scale is uniform, the minor scale comes in three forms; this makes music in the minor mode more complicated.

## 1.14 Hearing the Mode<sup>14</sup>

**Common Practice tonality** is essentially a two-party system: Music is either in Major or in minor. Composers can blur the situation by shifting quickly between modes or blending them. But, with rare exceptions, these modes are the only alternatives.

A **tonic cadence** gives the strongest indication of the music's mode. Recognizing cadences in in Major and minor will help you distinguish between them.

**Major:**

**Example 1.78**

This media object is an audio file. Please view or download it at  
<Bach23>

**Minor:**

**Example 1.79**

This media object is an audio file. Please view or download it at  
<Bach38>

Also learn to recognize the different scales of which each mode is comprised:

**Major:**

**Example 1.80**

This media object is an audio file. Please view or download it at  
<Bach39>

This media object is an audio file. Please view or download it at  
<Beethoven51>

**Minor:**

**Example 1.81**

This media object is an audio file. Please view or download it at  
<Bach34>

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<sup>14</sup>This content is available online at <<http://cnx.org/content/m35137/1.3/>>.

This media object is an audio file. Please view or download it at  
<Bach21>

This media object is an audio file. Please view or download it at  
<Schubert23>

There are other perceptual cues that aid in discriminating between the modes. Major and minor are often characterized differently. There is so much variety that any prescriptions are inevitably simplistic. Nevertheless, compared to music in Major, music in minor tends to be **low**, **slow** and **constrained in register**; or more **frantic**, **tense** and **disjunct**. Here are some prototypical examples of music in each mode:

#### Music in Major:

##### Example 1.82

This media object is an audio file. Please view or download it at  
<Bach27>

This media object is an audio file. Please view or download it at  
<Mozart26>

This media object is an audio file. Please view or download it at  
<Berlioz04>

This media object is an audio file. Please view or download it at  
<Schoenberg01>

#### Music in minor:

##### Example 1.83

This media object is an audio file. Please view or download it at  
<Bach24>

This media object is an audio file. Please view or download it at  
<Beethoven36>

This media object is an audio file. Please view or download it at  
<Chopin05>

This media object is an audio file. Please view or download it at  
<Bruckner02>

You can use your emotional reactions to reinforce your aural analyses. In general, music in Major will provoke feelings of **calm**, **triumph** or **joy**, whereas music in minor will sound more **subdued**, **aggressive**, **troubled** or **turbulent**. Major is the mode of **well-being**; minor is the mode of **distress**.

Thus, learning to recognize the difference between Major and minor involves more than ear training. It engages **mind** training and **feeling** training: Evaluate the musical character and your emotional responses; these, along with analyses of the **cadences** and **scales**, will help you master this crucial distinction.

The exercises that follow are designed to increase your facility in distinguishing between music in **Major** and **minor**.

## 1.15 Listening Gallery: Hearing the Mode<sup>15</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

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<sup>15</sup>This content is available online at <<http://cnx.org/content/m35163/1.3/>>.

Please identify the **mode** in the following examples:

**Exercise 1.15.1**

*(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Bach16>

*(select one)*

- a) Major
- b) Minor

**Exercise 1.15.2**

*(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Schubert17>

*(select one)*

- a) Major
- b) Minor

**Exercise 1.15.3**

*(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Mozart25>

*(select one)*

- a) Major
- b) Minor

**Exercise 1.15.4**

*(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Bernstein01>

*(select one)*

- a) Major
- b) Minor

**Exercise 1.15.5**

*(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Williams01>

*(select one)*

- a) Major
- b) Minor

**Exercise 1.15.6**

*(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<TanDun01>

*(select one)*

- a) Major
- b) Minor

**Exercise 1.15.7**

*(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Kim01>

*(select one)*

- a) Major
- b) Minor

**Exercise 1.15.8****(Solution on p. 154.)**

This media object is an audio file. Please view or download it at  
<Mahler04>

(select one)

- a) Major
- b) Minor

The following examples involve the same music being played first in one mode and then the other. Which comes first - Major or minor?

**Exercise 1.15.9****(Solution on p. 154.)**

This media object is an audio file. Please view or download it at  
<Respighi02>

(select one)

- a) Major
- b) Minor

**Exercise 1.15.10****(Solution on p. 154.)**

This media object is an audio file. Please view or download it at  
<Schubert07>

(select one)

- a) Major
- b) Minor

**Exercise 1.15.11****(Solution on p. 154.)**

This media object is an audio file. Please view or download it at  
<Tchaikovsky05>

(select one)

- a) Major
- b) Minor

**Exercise 1.15.12****(Solution on p. 154.)**

This media object is an audio file. Please view or download it at  
<Mozart24>

(select one)

- a) Major
- b) Minor

**Exercise 1.15.13****(Solution on p. 154.)**

This media object is an audio file. Please view or download it at  
<Bizet01>

(select one)

- a) Major
- b) Minor

## 1.16 Tonic, Mode and Key<sup>16</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

### 1.16.1 Tonic, Mode and Key

The musical term **key** indicates the **tonic** and **mode**: Thus, a work in the **key** of C-Major has a **tonic** of C and is in the Major **mode**. A work in the **key** of f-minor has f for a **tonic** and is in the minor **mode**. The keys of D-Major and d-minor are called **parallel** keys, because they share the **same tonic** but are in **different modes**.

### 1.16.2 Staying in and Leaving a Key

Repertoires that consist largely of circular progressions tends to be rooted in a single key. By mixing both circular and linear progressions, classical music developed the possibility of **changing keys**.

Harmonies that remain within one key are called **diatonic progressions**. Moving from key to key is called **modulation**. Along with distinguishing between Major and minor, being able to discriminate between **diatonic progressions** and **modulation** is a cornerstone of hearing **Common Practice harmony**.

Classical music puts a great value on **harmonic kineticism**—on forward progress and suspense. Too much emphasis on the tonic would impede that: It would be like trying to drive with the emergency brake on. Thus, a classical work often avoids its main tonic for significant stretches, saving its greatest emphasis on the home key for the end.

A **diatonic progression** may be entirely limited to the notes of the key. The following excerpt from Georg Frederic Handel's **Water Music** is consists exclusively of the pitches of its home key, D-Major.

#### Example 1.84

This media object is an audio file. Please view or download it at  
<Handel06>

On the other hand, **modulations** create novelty: They introduce new pitches and cadence in new places. This excerpt from J.S. Bach's **Partita No. 1 in B-flat Major** begins in one key - g-minor - and ends in another — the home key of B-flat Major.

#### Example 1.85

This media object is an audio file. Please view or download it at  
<Bach30>

The treatment of themes is one of the strongest perceptual cues for **modulation**. Expository passages, in which themes are presented **whole**, generally remain within a single key. On the other hand, developmental passages, in which themes are broken into fragments, are often **modulatory**: Presenting the theme in its entirety would put a drag on the harmonic motion; the thematic “shorthand” allows the music to progress more rapidly. **Fragmentation**, along with the **introduction of new pitches**, is a strong indicator of **modulation**.

The Finale of J.S. Bach's **Concerto in d** opens with the main theme presented by the string orchestra.

#### Example 1.86

This media object is an audio file. Please view or download it at  
<Bach17>

A later **modulating** passage consists only of thematic fragments.

#### Example 1.87

This media object is an audio file. Please view or download it at  
<Bach18>

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<sup>16</sup>This content is available online at <<http://cnx.org/content/m35116/1.1/>>.



The Finale of Brahms' **String Quintet in G-Major, Opus 111** opens with the following phrase.

**Example 1.88**

This media object is an audio file. Please view or download it at  
<Brahms01>

A later **modulating** passage only uses the theme's head motive.

**Example 1.89**

This media object is an audio file. Please view or download it at  
<Brahms02>

Thus, themes presented whole typically remain within a key whereas **fragmentation**, along with **introduction of new pitches**, is an indication of **modulation**.

Classical music is loaded with **modulation** — that is one of its distinguishing features. Being alert to the difference between **diatonic progressions** and **modulation** invigorates your hearing of harmony and makes you more fully present to the music's energy and drama.

We will now probe further into music that remains within a key and music that moves from key to key.

## 1.17 Listening Gallery: Tonic, Mode and Key<sup>17</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

In each of the following questions, one excerpt **remains within the key** while the other **modulates**. Decide is the first excerpt is **diatonic** or if it is **modulating**.

**Exercise 1.17.1**

*(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Bach01>

This media object is an audio file. Please view or download it at  
<Bach10>

*(select one)*

- a) Diatonic
- b) Modulating

**Exercise 1.17.2**

*(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Haydn01>

This media object is an audio file. Please view or download it at  
<Haydn05>

*(select one)*

- a) Diatonic
- b) Modulating

**Exercise 1.17.3**

*(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Mozart15>

This media object is an audio file. Please view or download it at  
<Mozart14>

*(select one)*

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<sup>17</sup>This content is available online at <<http://cnx.org/content/m35142/1.1/>>.

- a) Diatonic
- b) Modulating

**Exercise 1.17.4***(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Mozart16>

This media object is an audio file. Please view or download it at  
<Mozart17>

- (select one)
- a) Diatonic
  - b) Modulating

**Exercise 1.17.5***(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Beethoven38>

This media object is an audio file. Please view or download it at  
<Beethoven39>

- (select one)
- a) Diatonic
  - b) Modulating

**Exercise 1.17.6***(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Tchaikovsky04>

This media object is an audio file. Please view or download it at  
<Tchaikovsky06>

- (select one)
- a) Diatonic
  - b) Modulating

**Exercise 1.17.7***(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Smetana02>

This media object is an audio file. Please view or download it at  
<Smetana01>

- (select one)
- a) Diatonic
  - b) Modulating

## 1.18 Music Within a Key<sup>18</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

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<sup>18</sup>This content is available online at <<http://cnx.org/content/m35133/1.2/>>.

In **Common Practice music**, music within a key consists of harmonic progressions that lead towards and away from the **tonic**.

One chord above all others leads to the tonic: the **dominant**, which is built on the fifth scale degree. The **dominant** chord presents a harmonic **request**, which is fulfilled by the tonic.

**Cadences** are harmonic arrival points: They typically act as the **punctuation** at the end of a musical phrase. A cadence to the **dominant** is called a **half cadence**.

The opening phrase of Ludwig Van Beethoven's **Sonata in f-minor, opus 2, no. 1** ends in a **half-cadence**.

**Example 1.90**

This media object is an audio file. Please view or download it at  
<Beethoven19>

This excerpt from Gustav Holst's **The Planets** ends with a **half-cadence**.

**Example 1.91**

This media object is an audio file. Please view or download it at  
<Holst01>

Because they are making a **request**, **half-cadences** sound incomplete and create a feeling of expectation. A long wait or “**stand**” on the dominant heightens the anticipation. In this excerpt from his “**Emperor**” **Concerto**, Beethoven elaborates on the dominant harmony, stretching it out before finally resolving it to the tonic.

**Example 1.92**

This media object is an audio file. Please view or download it at  
<Beethoven11>

A cadence to the tonic is called a **full cadence**. Here is a **full cadence** in Major from Giuseppe Verdi's opera **Otello**.

**Example 1.93**

This media object is an audio file. Please view or download it at  
<Verdi03>

This excerpt from Richard Wagner's **Die Meistersinger von Nürnberg** consists exclusively of **full cadences** in Major.

**Example 1.94**

This media object is an audio file. Please view or download it at  
<Wagner01>

Here is a **full cadence** in minor from Johannes Brahms' **Symphony No. 4**.

**Example 1.95**

This media object is an audio file. Please view or download it at  
<Brahms04>

Many classical themes consist of a **half-cadence** followed by a **full cadence**. In this excerpt from the third movement of Mozart's **Symphony No. 35, “Haffner,”** the two cadences are characterized differently: The half cadence is forceful and majestic, while the full cadence that follows is calmer.

**Example 1.96**

This media object is an audio file. Please view or download it at  
<Mozart36>

In this excerpt from Robert Schumann's **Piano Concerto**, the oboe's plaintive melody ends in a **half-cadence**. The piano answers with its own version of the melody, this time ending in a **full cadence**.

**Example 1.97**

This media object is an audio file. Please view or download it at  
<Schumann03>

In Schubert's song "**Der Leierman**" from **Die Winterreise**, the voice's somber melodic statements are echoed by the piano, whose progressions end exclusively in **half** and **full cadences**. The excerpt begins with two half-cadences followed by two full cadences. See if you can follow the rest of the cadences. How does the excerpt end?

**Example 1.98**

This media object is an audio file. Please view or download it at  
<Schubert14>

Cadences to the **dominant** and **tonic** help establish and solidify a key. We will now study three features that add harmonic complexity: **postponed closure**, **chromaticism** and **dissonance**. These can contribute to destabilizing a key, making it easier to leave; and they also establish bridges between keys, facilitating more far-reaching harmonic trajectories.

## 1.19 Listening Gallery: Music Within a Key<sup>19</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

In the following examples, indicate whether the excerpt ends with a **half** or **full cadence**. A **half-cadence** will sound incomplete, whereas a **full tonic cadence** will sound more conclusive.

**Exercise 1.19.1**

*(Solution on p. 154.)*

This media object is an audio file. Please view or download it at  
<Prokofiev02>

*(select one)*

- a) Half Cadence
- b) Full Cadence

**Exercise 1.19.2**

*(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Stravinsky14>

*(select one)*

- a) Half Cadence
- b) Full Cadence

**Exercise 1.19.3**

*(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Beethoven55>

*(select one)*

- a) Half Cadence
- b) Full Cadence

**Exercise 1.19.4**

*(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Verdi04>

*(select one)*

- a) Half Cadence
- b) Full Cadence

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<sup>19</sup>This content is available online at <<http://cnx.org/content/m35164/1.1/>>.

**Exercise 1.19.5***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Ravel01>

*(select one)*

- a) Half Cadence
- b) Full Cadence

**Exercise 1.19.6***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Beethoven47>

*(select one)*

- a) Half Cadence
- b) Full Cadence

**Exercise 1.19.7***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Bach41>

*(select one)*

- a) Half Cadence
- b) Full Cadence

Do the following examples exhibit the prototype half-cadence - full-cadence harmonic scheme?

**Exercise 1.19.8***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Mozart33>

*(select one)*

- a) Yes
- b) No

**Exercise 1.19.9***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Mozart07>

*(select one)*

- a) Yes
- b) No

**Exercise 1.19.10***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Beethoven07>

*(select one)*

- a) Yes
- b) No

**Exercise 1.19.11***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Schubert13>

*(select one)*

- a) Yes
- b) No

**Exercise 1.19.12***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Brahms05>

*(select one)*

- a) Yes
- b) No

## 1.20 Postponed Closure<sup>20</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

You're seated in a restaurant and order for your favorite food. This can be likened to a **half-cadence**. Your request is fulfilled promptly: The dish arrives at the table. This is akin to a **full cadence**.

However, sometimes the kitchen makes a mistake: You ordered the vegetarian entrée and were brought a lamb chop. You send the food back and wait for your correct meal to arrive.

Similarly, in tonal music, tonic fulfillment does not always occur.

When the following theme from Wolfgang Amadeus Mozart's **Symphony No. 40** is first taken up the strings, it leads directly to a **full cadence**. However, when the winds take the lead, the cadence is disrupted.

**Example 1.99**

This media object is an audio file. Please view or download it at  
<Mozart30>

The opening theme of Ludwig Van Beethoven's **Andante favori** leads to **full cadence**.

**Example 1.100**

This media object is an audio file. Please view or download it at  
<Beethoven09>

Later in the piece, Beethoven modifies the return of the theme: It is broken into segments, some of which are re-harmonized. Leading into the anticipated **tonic cadence**, Beethoven stretches out the **harmonic rhythm**. And then, just when the tonic should occur, there is a harmonic surprise that **postpones closure**.

**Example 1.101**

This media object is an audio file. Please view or download it at  
<Beethoven10>

Late in the Scherzo of Mahler's **Symphony No. 2**, the music returns to its home key, where the music **could have** come to an end. Instead, Mahler **postpones closure** in spectacular fashion.

**Example 1.102**

This media object is an audio file. Please view or download it at  
<Mahler02>

**Postponed closure** is used to dramatic effect in Andrew Lloyd Webber's **The Phantom of the Opera**. At the opening of this scene, revelers are celebrating at a masquerade ball.

**Example 1.103**

This media object is an audio file. Please view or download it at  
<Webber01>

Suddenly the Phantom enters. In technical terms, his entrance disrupts the cadence, **postponing closure**.

<sup>20</sup>This content is available online at <<http://cnx.org/content/m35131/1.1/>>.

**Example 1.104**

This media object is an audio file. Please view or download it at  
<Webber02>

In his book “Human: The Science Behind What Makes Us Unique” (Harper Collins, 2008), Dr. Michael Gazzaniga writes: “Humans have evolved two abilities that are necessary for **prolonged** reciprocal social exchange: the ability to inhibit actions over time (that is, delayed gratification) and punishment of cheaters in reciprocal exchange. These currently are on the short list of uniquely human capacities.”

If tonic fulfillment represents one of the strongest forms of musical satisfaction, then **postponed closure** can be interpreted as a form of delayed gratification. Delayed gratification is frequently cited as a cornerstone of human intelligence. Sometimes **postponed closure** may surprise us; at other times, we may be prepared. Whichever is the case, when we experience such postponement, music may be touching on upon a fundamental aspect of the human cognition.

The most common form of **postponed closure** is the **deceptive cadence**. In a **deceptive cadence**, a dominant request is answered not by the tonic chord but by another chord from within the key that contains the tonic **pitch**. Thus, a **deceptive cadence** only **partially** fulfills the dominant request: It gives us the tonic note but **not** the complete tonic chord. In the case of a deceptive cadence, you’re like a teenager making a late night call. However, instead of your friend picking up, a parent answers. The person at the other end of the line is **related** to the person you were trying to reach—but speaking with the Dad is not what you had in mind!

When the tonic Major is expected, the **deceptive cadence** is often to a minor chord and vice versa.

In this excerpt from Ludwig van Beethoven’s **Sonata in A-Major, opus 101**, the first time this scalar run is played, it leads to the tonic.

**Example 1.105**

This media object is an audio file. Please view or download it at  
<Beethoven27>

The second time, though, it leads to a **deceptive cadence**, with a minor chord substituting for the anticipated tonic Major.

**Example 1.106**

This media object is an audio file. Please view or download it at  
<Beethoven24>

Here is a **deceptive cadence** in minor from Joseph Haydn’s **The Seasons**. This time, a Major chord takes the place of the minor tonic.

**Example 1.107**

This media object is an audio file. Please view or download it at  
<Haydn09>

Here is another **deceptive cadence** from Wolfgang Amadeus Mozart’s **Piano Concerto No. 20 in d-minor**.

**Example 1.108**

This media object is an audio file. Please view or download it at  
<Mozart28>

The melody of Stravinsky’s “**Serenade**” from the **Pulcinella Suite** could have lead directly to a **full cadence**.

**Example 1.109**

This media object is an audio file. Please view or download it at  
<Stravinsky16>

Here is the melody as written, with the oboe’s haunting line extended by two **deceptive cadences**.

**Example 1.110**

This media object is an audio file. Please view or download it at  
<Stravinsky15>

Being able to distinguish a **fulfilled cadence** from a **withheld arrival** greatly enriches your experience of classical music. By interfering with tonic gratification, **postponed closure** creates some of music's most emotionally salient moments.

## 1.21 Listening Gallery: Postponing Closure<sup>21</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

Do the following examples include postponement of closure?

**Exercise 1.21.1***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Mozart02>

*(select one)*

- a) Yes
- b) No

**Exercise 1.21.2***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Mozart03>

*(select one)*

- a) Yes
- b) No

**Exercise 1.21.3***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Beethoven12>

*(select one)*

- a) Yes
- b) No

**Exercise 1.21.4***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Mozart18>

*(select one)*

- a) Yes
- b) No

**Exercise 1.21.5***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Bach26>

*(select one)*

- a) Yes
- b) No

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<sup>21</sup>This content is available online at <<http://cnx.org/content/m35161/1.1/>>.



**Exercise 1.21.6***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
 <Berlioz05>

*(select one)*

- a) Yes
- b) No

## 1.22 Chromaticism<sup>22</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

The **chromatic scale** upon which Western music is based consists of twelve pitches. Each Major or minor key uses only a **subset** of the total chromatic: In the case of Major, each key contains seven pitches. If a progression consists exclusively of pitches from the key, it is considered to be completely **diatonic**. If pitches **outside** the key are introduced, the music is said to become more **chromatic**.

The theme of the 2<sup>nd</sup> movement of Robert Schumann's **Symphony No. 3, "Rhenish,"** begins with tonic and dominant harmony.

**Example 1.111**

This media object is an audio file. Please view or download it at  
 <Schumann05>

Later, a **chromatic** version of the theme occurs that incorporates pitches **outside** the key.

**Example 1.112**

This media object is an audio file. Please view or download it at  
 <Schumann04>

**Chromaticism** can be momentary or more sustained.

The first note of Wolfgang Amadeus Mozart's **Piano Sonata in a-minor** is inflected with a **chromatic** grace-note—as momentary as it gets!

**Example 1.113**

This media object is an audio file. Please view or download it at  
 <Mozart12>

When the theme returns later in the movement, Mozart expands the upbeat into a complete **chromatic** run.

**Example 1.114**

This media object is an audio file. Please view or download it at  
 <Mozart13>

The chromaticism in this excerpt from Ludwig Van Beethoven's **Quartet in E-flat Major, Opus 74, "Harp,"** is more extensive: The slow moving **chromatic** line leads eventually to a tonic cadence.

**Example 1.115**

This media object is an audio file. Please view or download it at  
 <Beethoven22>

The moving lines in the following excerpt from Joseph Haydn's **Piano Sonata No. 62 in E-flat Major** are almost entirely **chromatic**.

<sup>22</sup>This content is available online at <<http://cnx.org/content/m35091/1.1/>>.

**Example 1.116**

This media object is an audio file. Please view or download it at  
<Haydn08>

This excerpt from Ludwig Van Beethoven's **Piano Sonata in E-Major, Opus 109**, has only one brief **chromatic** note.

**Example 1.117**

This media object is an audio file. Please view or download it at  
<Beethoven29>

Its return slightly later in another key includes more pervasive **chromaticism**.

**Example 1.118**

This media object is an audio file. Please view or download it at  
<Beethoven28>

**Chromaticism** has many functions: It can help accentuate a particular note. In Ludwig van Beethoven's **Für Elise**, a **chromatic** note decorates the fifth scale degree.

**Example 1.119**

This media object is an audio file. Please view or download it at  
<Beethoven20>

At the refrain of the melody, Beethoven even extends the decoration.

**Example 1.120**

This media object is an audio file. Please view or download it at  
<Beethoven21>

**Chromaticism** can help lead more strongly to a non-tonic chord, thereby foreshadowing or recollecting important harmonic goals. This is a bit like looking at a brochure before visiting somewhere or flipping through the photo album afterwards.

The opening theme of Beethoven's **Sonata in A-Major** includes a deceptive cadence strengthened by **chromaticism**.

**Example 1.121**

This media object is an audio file. Please view or download it at  
<Beethoven26>

Later, this momentary emphasis is expanded into a move to the key of f#-minor, the chord emphasized by the **deceptive cadence**. Fragments of the theme appear. The earlier **chromaticism** has helped to prepare this key as a target of modulation.

**Example 1.122**

This media object is an audio file. Please view or download it at  
<Beethoven25>

The second movement of Franz Schubert's **String Quintet in C** opens with an expansive progression in E-Major.

**Example 1.123**

This media object is an audio file. Please view or download it at  
<Schubert03>

The turbulent middle section is in the distantly related key of f-minor, which shares only two pitches with the original key. The shift from E to f is prepared only by a trill.

**Example 1.124**

This media object is an audio file. Please view or download it at  
<Schubert02>

The closing passages chromatically blends the two keys. Within the return to E-Major, Schubert incorporates an allusion to f-minor. If there are any doubts about Schubert's intentions, they are answered by the trill, which reinforces the connection.

**Example 1.125**

This media object is an audio file. Please view or download it at  
<Schubert01>

**Chromaticism** can create **modal mixture** by borrowing chords from the **opposing mode**.

In the “**Brindisi**” (“**Drinking Song**”) from Giuseppe Verdi’s **Otello**, Iago first enjoins his comrades to drink with him in Major. Then, as he repeats the words “beva, beva” (“drink up, drink up”), he shifts to minor, concluding with a descending **chromatic scale** that leads to a cadence back in Major.

**Example 1.126**

This media object is an audio file. Please view or download it at  
<Verdi02>

The opening of Ludwig van Beethoven’s **Sonata in C-Major, Opus 53, “Waldstein,”** begins in Major but quickly makes its way to an arrival in minor, where the fast moving rhythm stops. The music briefly pauses before resuming in Major.

**Example 1.127**

This media object is an audio file. Please view or download it at  
<Beethoven45>

At the end of the movement, Beethoven revisits the tension between Major and minor: In this excerpt, the same progression is played three times. The progressions are identical except for a **single** pitch borrowed from minor.

**Example 1.128**

This media object is an audio file. Please view or download it at  
<Beethoven46>

No matter how much **chromaticism** is present, the cadence is the final arbiter of harmonic motion: If the tonic is strongly affirmed, the music is still rooted in that key.

Compare these excerpts from Franz Schubert’s **Piano Sonata in B-flat Major, D. 960**. The first, while incorporating a considerable amount of **chromaticism**, nevertheless cadences only in one key. The second, based on the same motivic material, moves through five keys.

**Example 1.129**

This media object is an audio file. Please view or download it at  
<Schubert08>

**Example 1.130**

This media object is an audio file. Please view or download it at  
<Schubert09>

If the notes of the scale are considered a “family,” **chromaticism** is like having guests. The greater the number of guests or the longer they stay, the greater the complexity of the social dynamics. Generally, the greater the amount of **chromaticism**, the more disruptive it is to the stability of the key.

## 1.23 Listening Gallery: Chromaticism<sup>23</sup>

NOTE: Please note that you must have the most recent copy of Macromedia’s Flash plugin installed to play the musical examples.

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<sup>23</sup>This content is available online at <<http://cnx.org/content/m35149/1.1/>>.

Please listen to the following excerpts and indicate if they are completely diatonic, consisting only of the notes of the key, or include chromaticism.

**Exercise 1.23.1**

*(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Strauss01>

*(select one)*

- a) Diatonic
- b) Chromatic

**Exercise 1.23.2**

*(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Strauss02>

*(select one)*

- a) Diatonic
- b) Chromatic

**Exercise 1.23.3**

*(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Berlioz01>

*(select one)*

- a) Diatonic
- b) Chromatic

**Exercise 1.23.4**

*(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Schumann06>

*(select one)*

- a) Diatonic
- b) Chromatic

**Exercise 1.23.5**

*(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Handel05>

*(select one)*

- a) Diatonic
- b) Chromatic

**Exercise 1.23.6**

*(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Purcell01>

*(select one)*

- a) Diatonic
- b) Chromatic

**Exercise 1.23.7**

*(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Stravinsky06>

*(select one)*

- a) Diatonic
- b) Chromatic

**Exercise 1.23.8***(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<Mozart04>

*(select one)*

- a) Diatonic
- b) Chromatic

**1.24 Dissonance**<sup>24</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

In tonal music, a **dissonance** is a tone that requires **resolution**. **Dissonances** cannot be goals of motion: Instead, they demand **continuation**.

**Example 1.131**

This media object is an audio file. Please view or download it at  
<Bach09>

**Example 1.132**

This media object is an audio file. Please view or download it at  
<Shostakovich01>

For this reason, **dissonances** promote **flow**: They keep the music moving forward. For instance, listen to this excerpt from Joseph Haydn's **The Creation**. Haydn's goal in this passage was to musically depict the first sunrise of Genesis. Stripped of its **dissonances**, the harmony lurches from one chord to the next.

**Example 1.133**

This media object is an audio file. Please view or download it at  
<Haydn07>

Now listen to how the **dissonances**, by connecting one chord to the next, contribute to the sense of the sun's steady ascent and brightening.

**Example 1.134**

This media object is an audio file. Please view or download it at  
<Haydn06>

**Dissonance** has other important functions. **Polyphony** refers to voices moving independently. **Dissonance** promotes **polyphony** by enabling voices to reach chord tones at different times. In this excerpt from the slow movement of Felix Mendelssohn's **Italian Symphony**, the strings play the melody.

**Example 1.135**

This media object is an audio file. Please view or download it at  
<Mendelssohn01>

In the return of the theme, Mendelssohn offsets the winds, creating a string of **dissonances**.

**Example 1.136**

This media object is an audio file. Please view or download it at  
<Mendelssohn02>

In this excerpt from Anton Bruckner's **Symphony No. 8**, the oboe delays its motion, creating a string of **dissonances** with the rest of the instruments.

<sup>24</sup>This content is available online at <<http://cnx.org/content/m35106/1.2/>>.

**Example 1.137**

This media object is an audio file. Please view or download it at  
<Bruckner01>

**Dissonances** also promote **independence** by enabling musical lines to move at different speeds within the same **harmony**. In this excerpt from Peter Ilyich Tchaikovsky's ballet **The Nutcracker**, the melody is initially presented with a crisp, homophonic accompaniment. When the melody is repeated, **dissonance** enables the violas to add a fast-moving line within the same harmonic progression.

**Example 1.138**

This media object is an audio file. Please view or download it at  
<Tchaikovsky02>

**Dissonance** is also used to heighten the **expressivity** and **tension**. Arnold Schoenberg's instrumental tone poem **Transfigured Night** tells the story of a woman who reveals to her lover that she is carrying the child of another man. As she unburdens herself, Schoenberg heightens the pathos with **dissonance**.

**Example 1.139**

This media object is an audio file. Please view or download it at  
<Schoenberg02>

In the Academy Award winning film **On the Waterfront**, the mobster lawyer Charley Malloy must decide whether to kill his brother Terry to keep him from testifying against his bosses. As he heads towards a fateful meeting with his brother, Leonard Bernstein underscores Charley's predicament with two highly **dissonant chords**.

**Example 1.140**

This media object is an audio file. Please view or download it at  
<Bernstein01>

**Consonant** chords are perceptually "transparent." It is easy to "hear into" the chord and analyze its components.

Here is a **Major** chord:

**Example 1.141**

This media object is an audio file. Please view or download it at  
<Beethoven23>

Which of these pitches doesn't belong?

**Exercise 1.24.1**

*(Solution on p. 155.)*

This media object is an audio file. Please view or download it at  
<MIDI01>

This media object is an audio file. Please view or download it at  
<MIDI02>

This media object is an audio file. Please view or download it at  
<MIDI03>

This media object is an audio file. Please view or download it at  
<MIDI04>

*(select one)*

- a) Pitch I
- b) Pitch II
- c) Pitch III
- d) Pitch IV

Here is a **minor** chord:

**Example 1.142**

This media object is an audio file. Please view or download it at  
 <Beethoven01>

Which of these pitches doesn't belong?

**Exercise 1.24.2**

(Solution on p. 156.)

This media object is an audio file. Please view or download it at  
 <MIDI05>

This media object is an audio file. Please view or download it at  
 <MIDI06>

This media object is an audio file. Please view or download it at  
 <MIDI07>

This media object is an audio file. Please view or download it at  
 <MIDI08>

(select one)

- a) Pitch I
- b) Pitch II
- c) Pitch III
- d) Pitch IV

In both cases, you probably found it easy to pick out the “wrong” note.

**Dissonance** creates harmonic **opacity**. It makes chord identification more difficult: It is harder to distinguish the constituent sounds.

Here is a **dissonant** chord from Olivier Messiaen's **Vision de l'Amen**.

**Example 1.143**

This media object is an audio file. Please view or download it at  
 <Messiaen01>

Which of these pitches doesn't belong?:

**Exercise 1.24.3**

(Solution on p. 156.)

This media object is an audio file. Please view or download it at  
 <MIDI24>

This media object is an audio file. Please view or download it at  
 <MIDI25>

This media object is an audio file. Please view or download it at  
 <MIDI26>

This media object is an audio file. Please view or download it at  
 <MIDI27>

(select one)

- a) Pitch I
- b) Pitch II
- c) Pitch III
- d) Pitch IV

This time, you were probably less confident of your answer!

Charles Ives humorously illustrates the difference between perceptual transparency and opacity in his short piano work **Bad Resolutions and Good**.

**Example 1.144**

This media object is an audio file. Please view or download it at  
<Ives01>

As when Romeo and Juliet first meet while masked or a murderer hides among the guests in a whodunnit, **dissonance** can enable musical content to be artfully concealed, obstructed or rendered out-of-focus. **Dissonance** and **chromaticism** combined together ratchet up the **opacity**. Here is the main subject from **Contrapunktus IX** from J.S. Bach's **Art of the Fugue** presented alone:

**Example 1.145**

This media object is an audio file. Please view or download it at  
<Bach03>

In this excerpt, the subject is in a lower register, with other lines added above it. Thanks to the largely **diatonic** harmony and limited role of **dissonance**, the subject is easy to hear.

**Example 1.146**

This media object is an audio file. Please view or download it at  
<Bach04>

In this excerpt, the subject is presented in a new key surrounded by increased **dissonance** and **chromaticism**: This time, the added voices “block” or “interfere” with the familiar subject, rendering it harder to follow.

**Example 1.147**

This media object is an audio file. Please view or download it at  
<Bach02>

At the opening of the Finale of Frederic Chopin's **Sonata No. 2 in b-flat minor**, **dissonance** and **chromaticism** is so pervasive that the tonality is not discernible. Only at the end of this excerpt is there a “glimmer” of **diatonicism**.

**Example 1.148**

This media object is an audio file. Please view or download it at  
<Chopin03>

Thus, the primary functions of **dissonance** are to direct the music forward, highlight the independence between musical lines, heighten the expressivity and make the music more perceptually challenging.

By adding **ambiguity** and **tension**, **postponed closure**, **chromaticism** and **dissonance** can help shake the foundations of a key. If the cadences still remain within the key, the music has not moved yet. However, if the cadences begin to roam, the music has embarked on a harmonic voyage. We will now study what happens when music leaves a key.

## 1.25 Leaving the Key<sup>25</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

Whereas **diatonic** progressions remain within a key, **modulation** involves moving between keys. Because it involves uprooting the music from a tonal center and moving to others, **modulation** is the most action-oriented part of harmony.

The structural import and expressive impact of a **modulation** is derived from the inter-relationship of three factors:

**The “harmonic distance” travelled – the time spent in travel – the time spent in arrival**

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<sup>25</sup>This content is available online at <<http://cnx.org/content/m35140/1.1/>>.



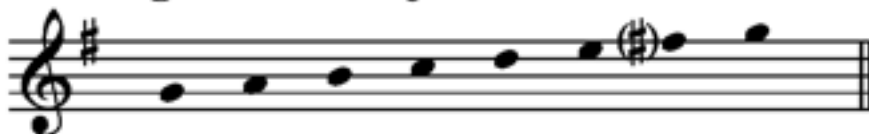
In order to understand this more fully, we need to explore several concepts about **Common Practice tonality**.

### 1.25.1 The Structural Equivalence of Keys

As noted earlier, the term **key** of the music indicates the **tonic** and **mode**. Thus, music in the **key** of G-Major makes use of the Major scale built on the tonic G; the **key** of g-minor shares the same tonic—g—but is in the minor mode.

**Example 1.149**

**Figure 1: G-Major Scale**



**Figure 2: g-minor Scale**



Any pitch of the **chromatic scale** may serve as the **tonic**: Thus, there are twelve possible **keys** for each **mode**.

In modern tempered tuning, **all keys of the same mode are functionally equivalent**: They are like Club Scout chapters, sharing the same charter, hierarchy of officers and rituals. For example, singers sometimes find a song may lie in an uncomfortable range; so they transpose it to a higher or lower key. The music remains the same: It just slides up or down.

Here are two performances of Franz Schubert's song **Gesang des Harfners II**: The music is identical except for the **transposition**.

**Example 1.150**

This media object is an audio file. Please view or download it at  
<Schubert15>

This media object is an audio file. Please view or download it at  
<Schubert16>

Because of this **equivalence**, it is possible to move from key to key without any **modification** in **musical syntax**. Put another way, the rules of harmony don't change when you change keys. This harmonic consistency makes the modulation intelligible: No written explanations or verbal remarks are required. What holds true in one key holds true in any other.

Musical commentators often speak of the "coloring" of different keys. This has largely to do with instrumentation: For instance, the keys of G, D, A and E sound "brighter" on string instruments because they allow for the use of open strings. Similarly, marches are typically in B-flat Major because of how brass instruments are tuned. Interpreters sometimes ascribe meaning or significance to particular keys: C-Major is Mozart's "Coronation" key, "c-minor" is Beethoven's key for funerals, etc. Applied too literally or categorically, however, these associations risk obscuring the underlying consistency upon which tonality depends: All keys of the same mode share the identical structure and their progressions are organized the same way.

## 1.26 Harmonic Distance<sup>26</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

The first element of a **modulation** is the **distance traveled**. What does that mean in musical terms?

The primary measure of relatedness between keys is the **number of notes shared in common**: The greater the overlap, the more closely related the keys. Each Major key contains seven notes: Thus, the greatest possible overlap is six notes. Because there are twelve pitches in the chromatic scale, the minimum overlap is two notes (five distinct for each key plus two shared=all twelve pitches of the chromatic scale.)

In the West, hearing and vision are often correlated: For instance, we speak of pitches as “high” and “low” and of melodies “rising” and “falling.” This cross-domain mapping is not universal: As ethnomusicologists have shown, to the ancient Greeks, pitches were “sharp” or “heavy,” in Bali they are “small” or “large,” to the Saya people of the Amazon “young” and “old.” In Zimbabwe, what we call low pitches are “crocodiles,” whereas high ones are “those who follow crocodiles.” (Eitan and Timmers, “Beethoven’s last piano sonatas and those who follow crocodiles,” 9<sup>th</sup> International Conference on Music Perception and Cognition, 2006).

To Western ears, our musical-spatial framework is so ingrained, it is hard to realize it is only a cultural metaphor: To us, the piccolo is “above” the tuba, the singer “reaches” for her high note and voices may move in “parallel” or “contrary motion.”

While individual pitches are aligned on a **vertical** plane—up and down—keys tend to be “visualized” on a **horizontal** plane — near and far. Closely related keys are perceived as “neighboring,” whereas those that are not are perceived as “distant.”

For instance, the pitches B and C lie very close together:

### Example 1.151

This media object is an audio file. Please view or download it at  
<MIDI20>

Meanwhile, there is a wider interval between C and G:

### Example 1.152

This media object is an audio file. Please view or download it at  
<MIDI21>

With respect to keys, however, the opposite is true: Because the keys of C-Major and G-Major share six notes in common, they are perceived as neighboring.

### Example 1.153

This media object is an audio file. Please view or download it at  
<MIDI22>

Meanwhile, C-Major and B-Major—which share only 2 of 7 notes—are heard as far apart.

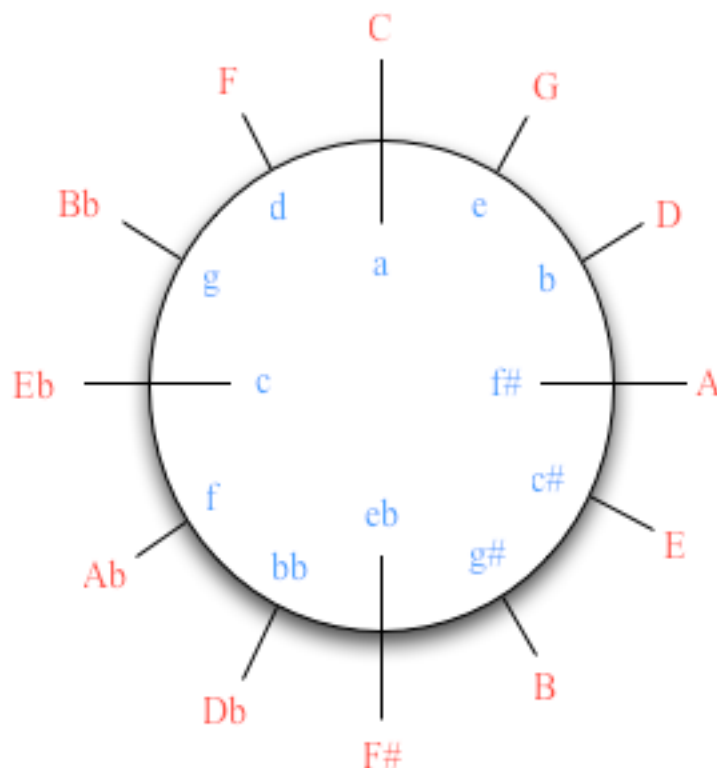
### Example 1.154

This media object is an audio file. Please view or download it at  
<MIDI23>

The **circle of fifths** is an iconic diagram of keys arrayed in circle, like the face of a clock: The more notes two keys share in common, the closer they lie on the circle.

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<sup>26</sup>This content is available online at <<http://cnx.org/content/m35105/1.1/>>.

**Example 1.155: Circle of Fifths**

Each Major key is paired with the minor one whose “natural” form shares the same scale: For instance, the keys of C-Major and a-natural minor share exactly the same seven pitches. These are called the **relative** Major and minor, because their pitch content is so closely **related**.

The **circle of fifths** is the primary way of visualizing harmonic distance. It is common to speak of “traveling” around the circle. Note that, just as with the twelve-hour time cycle, twelve steps around the circle of fifths returns you to your starting point.

## 1.27 Modulation<sup>27</sup>

NOTE: Please note that you must have the most recent copy of Macromedia’s Flash plugin installed to play the musical examples.

Modulation describes the transit between keys. A **modulation** is a combination of three factors: **the “harmonic distance” traveled – the time spent in travel – the time spent in arrival**

To demonstrate this, let’s compare two **modulations**, one by Muzio Clementi and one by J. S. Bach.

### Example 1.156

This media object is an audio file. Please view or download it at  
<Clementi01>

This media object is an audio file. Please view or download it at  
<Bach11>

<sup>27</sup>This content is available online at <<http://cnx.org/content/m35134/1.1/>>.

In both cases, the **harmonic distance** is the same: The music travels from the key of the **tonic** to that of the **dominant**—neighboring keys on the **circle of fifths**, and thus **closely related**.

In the Clementi, the **travel time** is extremely short: The move from the **tonic** to **dominant** key happens in a few seconds.

**Example 1.157**

This media object is an audio file. Please view or download it at  
<Clementi02>

Compared to the time spent getting there, the time spent in arrival is **considerably longer**: Clementi dwells in the new key, cadencing there repeatedly.

**Example 1.158**

This media object is an audio file. Please view or download it at  
<Clementi03>

The Clementi is analogous to an easy trip to a nearby house: You’ve brought a put luck dinner and settle in for a long, comfortable evening.

The same journey is much more **elaborate and extended** in the Bach:

The opening measures establish the home key.

**Example 1.159**

This media object is an audio file. Please view or download it at  
<Bach13>

The initial move away from the key is reinforced by a change in texture: The **figuration** of the opening bars is interrupted by several **rising scales**.

**Example 1.160**

This media object is an audio file. Please view or download it at  
<Bach14>

This first move away was provisional. The progression returns to the tonic, but more insecurely, and the push away is strengthened. With significant effort and heightened complexity, Bach’s Prelude reaches the same goal as the Clementi: An arrival on the **dominant**.

**Example 1.161**

This media object is an audio file. Please view or download it at  
<Bach12>

However, after such pain-staking effort, there is a shock upon arrival: The music abruptly departs!

**Example 1.162**

This media object is an audio file. Please view or download it at  
<Bach32>

The Bach **modulation** might be described as a visit to your in-laws at Thanksgiving: It should be an easy trip but you forget something you have to go back for—and then get lost. When you finally arrive, your in-law makes an unwelcome remark and you throw everyone back in the car, headed somewhere else for the holidays.

Thus, although the two **modulations** cover the same harmonic distance—**from tonic to dominant**—they differ greatly in structural import and expressive impact because of their different proportions of **time spent in travel** and the **time spent in arrival**.

One way of measuring the **time spent in arrival** is the number of **cadences** in the new key. For instance, Mozart’s **Piano Sonata in C-Major** begins by establishing the home key.

**Example 1.163**

This media object is an audio file. Please view or download it at  
<Mozart07>

The music then **modulates** to the **dominant**, where there is a marvelously inventive series of **cadences** — eight in all!

**Example 1.164**

This media object is an audio file. Please view or download it at  
<Mozart06>

Later in the movement, Mozart revisits the **dominant key**. However, this time, there is only one **cadence** — and then the music packs its bags and leaves.

**Example 1.165**

This media object is an audio file. Please view or download it at  
<Mozart29>

The greater the number of **cadences**, the greater the structural significance of a **modulation**.

Conventional harmony textbooks typically provide MapQuests between keys, describing the most common paths and smoothest chord connections. While this information is certainly apt, it is secondary to the musical significance of a modulation. When you are listening to a **modulation**, try to ask three crucial questions: **How far am I going? How long is it taking? How much time do I spend when I get there?**

## 1.28 Harmonic Goals<sup>28</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

Measuring harmonic distance and locating **harmonic goals** is the most advanced and difficult aspect of listening to classical music. It's easy to "feel at sea": Just as it's hard to orient yourself in the middle of the Atlantic, it's hard to locate oneself harmonically: There are no visual signposts, no verbal explanations; everything has to be apprehended by ear. Each tonal work is at liberty to go its own way: There is no obligation to modulate to certain keys or travel a certain distance around the **circle of fifths**. Some pieces may limit themselves to neighboring keys; others may range more broadly. It's necessary to follow each work on its own terms.

There is a lot to be gained by measuring **harmonic distance**: Tonal music creates suspense and excitement by **moving away** from the **tonic** to some extreme point and then finding a way back. Where the harmony ends up can have great structural and expressive significance. So, while this is one of the most challenging aspects of **hearing harmony**, it is also one of the most meaningful and rewarding.

Tonal works frequently begin by **modulating** to closely related keys and then gradually move farther away, before tracing their eventual return. Composers frequently reinforce their harmonic odyssey with perceptual cues. One of the most common is the introduction of a new theme. Often the theme will be of a contrasting character, adding a change in tone or spirit to the change in key.

Wolfgang Amadeus Mozart's **Symphony No. 41, "Jupiter,"** opens with an assertive, martial theme.

**Example 1.166**

This media object is an audio file. Please view or download it at  
<Mozart34>

Mozart marks the first main goal of **modulation**, the key of the dominant, with a new, gentler theme.

**Example 1.167**

This media object is an audio file. Please view or download it at  
<Mozart35>

Ludwig van Beethoven's **Symphony No. 5** has one of the famous main themes in all of classical music.

<sup>28</sup>This content is available online at <<http://cnx.org/content/m35108/1.1/>>.

**Example 1.168**

This media object is an audio file. Please view or download it at  
 <Beethoven52>

Beethoven heralds his first goal of **modulation** — the relative Major, E-flat Major — with a new theme: The aggressiveness of the opening is supplanted by greater lyricism. Notice, though, that there is as a subtle reminder of where the music has come from: The rhythmic motto of the opening is embedded in the accompaniment, eventually coming to the fore at the end of the excerpt.

**Example 1.169**

This media object is an audio file. Please view or download it at  
 <Beethoven53>

In many works, greater **harmonic distance** is associated with greater **thematic transformation**: The main material is generally most complete, stable and secure in the home key. The farther you stray from home, the more irregular the material becomes.

In the Finale of Mozart's **Symphony No. 40 in g-minor**, the violins initially present the main theme, with the winds playing a subsidiary role.

**Example 1.170**

This media object is an audio file. Please view or download it at  
 <Mozart19>

Throughout the movement, as Mozart gradually advances from the tonic, he moves farther and farther away from the original orchestration. At the start of this excerpt, the head motive of the theme is traded between the strings and winds. Eventually, the music makes it halfway around the **circle of fifths** — an extraordinary **harmonic distance**! Mozart reinforces the remoteness of the key with an orchestration that is likewise very displaced from the original: The violins are silent. Instead, the cellos and the winds — who played only a supporting role at the outset — are now featured: The theme's orchestration has turned itself inside out!

**Example 1.171**

This media object is an audio file. Please view or download it at  
 <Mozart31>

The Finale of Ludwig van Beethoven's **Piano Sonata in A-flat Major, opus 110** opens with a rising theme.

**Example 1.172**

This media object is an audio file. Please view or download it at  
 <Beethoven30>

The texture gradually thickens and the music begins to **modulate**. As the music moves farther away from the tonic, anomalies begin to occur — including, very unusually, a refrain of the somber melody of an earlier movement. Finally at the most remote key, the harmony stops dead in its tracks. After resting here for a remarkably long time, another surprising thing occurs: the Finale's theme reenters — upside down!

**Example 1.173**

This media object is an audio file. Please view or download it at  
 <Beethoven31>

Thus, Beethoven sculpts a topography where **greater distance from the tonic** equals **greater transformation**. Even if you can't recognize by ear that the music has moved from A-flat Major all the way to G-Major, Beethoven's perceptual cues alert you that you have reached somewhere wild and strange.

Beethoven concludes with a triumphant return to the original key, with the theme turned right side up again and fully harmonized:

**Example 1.174**

This media object is an audio file. Please view or download it at  
<Beethoven32>

Scientists have demonstrated that **long-term pitch memory** can easily be **disoriented**: Therefore, supporting pitch memory with perceptual cues is very important for following large-scale **harmonic structure**. The main theme of Haydn's **Symphony No. 102 in B-flat Major** is introduced by the strings:

**Example 1.175**

This media object is an audio file. Please view or download it at  
<Haydn03>

At the end of a long **modulating** section, Haydn returns to the main theme. **Is it in its original key?** Haydn leaves a clue...

**Example 1.176**

This media object is an audio file. Please view or download it at  
<Haydn02>

Instead of the strings, the flute is playing the theme: This is Haydn's hint that the key is different. The prevention of closure at the end of the excerpt is a reminder that the main tonic has not been reached yet.

A little later, the theme returns—this time will all of the trappings of home.

**Example 1.177**

This media object is an audio file. Please view or download it at  
<Haydn04>

When you're driving, you count on standard highway signs to make quick and safe decisions. Classical works do not use perceptual cues so consistently; instead, each piece bears the stamp of individuality, not only in its themes but also in its formal unfolding and structural markers. You have to learn the road signs for each piece separately. These types of variables and nuances are why listening to classical music takes careful attention and repeated listening. With experience, you will be better able to recognize perceptual cues and interpret their significance.

It makes intuitive sense that **harmonic distance** and **thematic transformation** and **contrast** are often linked: The farther you get from home, the less recognizable your environment becomes. Listening for perceptual cues will help you apprehend the difference between the closest and most distant **harmonic goals** in a modulating work.

## 1.29 The Return to the Tonic<sup>29</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

Having taken you away from the **tonic**, it's now time to bring you back.

Just as the **dominant** leads to the **tonic** within the key, the **dominant** typically helps to restore the **tonic** key after a series of **modulations**. This "**stand on the dominant**," as it is generally called, can be quite involved and expansive, incorporating chromaticism as a way of building tension. The greater the amount of time spent **away from the tonic**, the longer the "**stand**" **on the dominant** may tend to be.

In J.S. Bach's "Prelude in C-Major" from **The Well-Tempered Clavier, Book I**, the return to the tonic is prepared by **stand on the dominant** that lasts for a quarter of the composition! When the bass finally moves to the tonic, there is one more **postponement of closure**: **Chromaticism** is added to the tonic chord, delaying final resolution until the very last chord.

<sup>29</sup>This content is available online at <<http://cnx.org/content/m35124/1.1/>>.

**Example 1.178**

This media object is an audio file. Please view or download it at  
<Bach47>

A return to the tonic is often accompanied by a recognizable reprise of the primary theme: Often, the only **complete** restatements of the theme occur in the tonic; all the others are interrupted in some way.

J.S. Bach's **Brandenburg Concerto No. 5** opens by stating its theme in full.

**Example 1.179**

This media object is an audio file. Please view or download it at  
<Bach48>

For this arrival in the dominant, the theme is **“cracked open”** and new music inserted in the middle.

**Example 1.180**

This media object is an audio file. Please view or download it at  
<Bach49>

This arrival in minor is marked by a truncated version of the theme—only its tail is played, as if you were just catching a glimpse of it.

**Example 1.181**

This media object is an audio file. Please view or download it at  
<Bach50>

The theme finally is restored **“whole”** at the culminating return to the original key.

**Example 1.182**

This media object is an audio file. Please view or download it at  
<Bach51>

Wolfgang Amadeus Mozart's **Symphony No. 40 in g-minor** likewise begins with a full statement of its main theme.

**Example 1.183**

This media object is an audio file. Please view or download it at  
<Mozart39>

Once it begins to **modulate**, the theme is never stated in full until the return to the original key. In an unusual and exquisite touch, the theme's return slightly overlaps with the **stand on the dominant**; as a result, it resolves to the tonic a few beats later than expected.

**Example 1.184**

This media object is an audio file. Please view or download it at  
<Mozart40>

Thus, one of the primary ways of affirming the return to the tonic is to reserve complete thematic statements for the home key. That helps the listener orient him or herself: “If the theme is whole, I must be home.”

As a movement reaches its close, there is often one last **postponement of closure**, called a **Coda**. The **Coda** is a section whose purpose is to delay the tonic arrival one last time.

The Finale of Wolfgang Amadeus Mozart's **Symphony No. 41 in C-Major, “Jupiter”** ends with one of classical music's great **Codas**. The excerpt begins with a passage that **could** have functioned as the closing cadence. However, instead of ending there, Mozart extends the Finale with a **Coda** in which all of its themes are combined in a gigantic “mash-up.”

**Example 1.185**

This media object is an audio file. Please view or download it at  
<Mozart37>

The **Coda** of the first movement of Ludwig van Beethoven's **Symphony No. 7** begins with a humorous touch. The speeding up of harmonic rhythm at the final cadence makes for a roof-raising conclusion.



**Example 1.186**

This media object is an audio file. Please view or download it at  
 <Beethoven54>

## 1.30 Final Closure<sup>30</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

The final emphasis on the **tonic**—the pitch that has represented stability, order and repose—brings a tonal movement to a close.

Pieces in Major almost inevitably end in Major. The reasons for this are both acoustic and psychological: The Major chord is very resonant, giving it an acoustic presence that is hard to top; the security and stability of tonic Major makes for a satisfying conclusion.

Ludwig van Beethoven's **Symphony No. 3 in E-Major, "Eroica,"** begins by boldly proclaiming the tonic Major.

**Example 1.187**

This media object is an audio file. Please view or download it at  
 <Beethoven17>

The movement ends decisively in Major.

**Example 1.188**

This media object is an audio file. Please view or download it at  
 <Beethoven16>

At the close of his **Symphony No. 5 in E-flat Major**, Jean Sibelius waits until the last possible moment to give the final tonic chord.

**Example 1.189**

This media object is an audio file. Please view or download it at  
 <Sibelius01>

Music in minor, on the other hand, is less predictable: There are three possibilities.

### 1.30.1 1. The Work Begins and Ends in Minor

In Ludwig van Beethoven's **Quartet in f-minor, Opus 95, "Serioso,"** the minor mode is established at the outset of the first movement.

**Example 1.190**

This media object is an audio file. Please view or download it at  
 <Beethoven35>

This movement ends decisively in minor.

**Example 1.191**

This media object is an audio file. Please view or download it at  
 <Beethoven34>

Johannes Brahms ends his **Symphony No. 4 in e-minor** in minor.

**Example 1.192**

This media object is an audio file. Please view or download it at  
 <Brahms03>

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<sup>30</sup>This content is available online at <<http://cnx.org/content/m35101/1.2/>>.

### 1.30.2 2. Picardy Third

The movement is in minor up until the last chord—where there is a sudden switch to tonic Major called a **“Picardy third.”** This prelude from J.S. Bach’s **The Well-Tempered Clavier, Book I** ends with a **Picardy third**.

**Example 1.193**

This media object is an audio file. Please view or download it at  
<Bach40>

Similarly, the first movement of Ludwig Van Beethoven’s **Piano Sonata in c-minor** switches to Major at the last chord.

**Example 1.194**

This media object is an audio file. Please view or download it at  
<Beethoven54>

### 1.30.3 3. There is a Concluding Passage or Section in Major.

Because the lengthened emphasis, the change of mode has more structural weight. You will most typically find this **“negation”** or **“rejection”** of minor in the Finale movements, giving the entire composition a more uplifting ending.

The piano alone introduces the primary theme of the Finale of Wolfgang Amadeus Mozart’s **Piano Concerto No. 20 in d-minor**.

**Example 1.195**

This media object is an audio file. Please view or download it at  
<Mozart20>

The final statement of the theme breaks off in the middle—and continues in Major! The entrance of the woodwinds heralds the shift in mode; the piano then follows suit.

**Example 1.196**

This media object is an audio file. Please view or download it at  
<Mozart22>

This passage carries the music to a rousing conclusion in Major.

**Example 1.197**

This media object is an audio file. Please view or download it at  
<Mozart21>

The Finale of Beethoven’s **String Quartet in f-minor, Opus 95, “Serioso”** opens solidly in minor.

**Example 1.198**

This media object is an audio file. Please view or download it at  
<Beethoven48>

The Quartet appears headed for a somber ending in minor. However, Beethoven takes a different tack from the first movement. Just as the Finale is about to come to an end, Beethoven prolongs it with an accelerated section in Major. You will hear the shift to Major in the held chords just before the fast closing section begins.

**Example 1.199**

This media object is an audio file. Please view or download it at  
<Beethoven49>

Because large orchestral works typically ended in a blaze of Major, Johannes Brahms' ending for his **Symphony No. 4** illustrated earlier was considered particularly "tragic."

Throughout the **Common Practice Era**, tonal works return to the tonic for final closure. Thus, the harmonic voyage comes full circle, returning to its place of origin. Movements in Major almost invariably end in Major. Movements in minor are more equivocal. There are three options: a final cadence in minor; a switch to Major for the last chord; or a switch to Major for the concluding passage.

### 1.31 Listening Gallery: Final Closure<sup>31</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

Each of these excerpts are from works in **minor**. How do they **end**?

#### Exercise 1.31.1

(Solution on p. 156.)

This media object is an audio file. Please view or download it at  
<Bach44>

(select one)

- a) Final cadence in minor
- b) Picardy Third
- c) Closing section in Major

#### Exercise 1.31.2

(Solution on p. 156.)

This media object is an audio file. Please view or download it at  
<Bach46>

(select one)

- a) Final cadence in minor
- b) Picardy Third
- c) Closing section in Major

#### Exercise 1.31.3

(Solution on p. 156.)

This media object is an audio file. Please view or download it at  
<Haydn12>

(select one)

- a) Final cadence in minor
- b) Picardy Third
- c) Closing section in Major

#### Exercise 1.31.4

(Solution on p. 156.)

This media object is an audio file. Please view or download it at  
<Chopin06>

(select one)

- a) Final cadence in minor
- b) Picardy Third
- c) Closing section in Major

#### Exercise 1.31.5

(Solution on p. 156.)

This media object is an audio file. Please view or download it at  
<Dvorak05>

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<sup>31</sup>This content is available online at <<http://cnx.org/content/m35160/1.2/>>.

(select one)

- a) Final cadence in minor
- b) Picardy Third
- c) Closing section in Major

### Exercise 1.31.6

(Solution on p. 156.)

This media object is an audio file. Please view or download it at  
<Beatles01>

(select one)

- a) Final cadence in minor
- b) Picardy Third
- c) Closing section in Major

## 1.32 Reharmonizing a Melody<sup>32</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

A **melody** can maintain the same **harmonization** each time it appears, yet be varied through changes in **voicing**, **voice-leading** and **instrumental texture**. Yet in some cases the **harmonization** itself changes: Different pitches support the **melody**. J.S. Bach's **Chorale Harmonizations** are the Common Practice "Bible" of **reharmonization**: Bach composed over 200 Cantatas and several large Masses, all incorporating Lutheran hymn tunes. Not only did Bach revisit the same hymn tune in different Cantatas, he typically incorporated a hymn tune into multiple movements of the same work. He did so with supreme imagination, often never repeating the same **harmonization** twice.

Here are the concluding phrases of two settings of the Chorale tune, "**Jesu Leiden, Pein und Tod**" from J.S. Bach's **St. John Passion**. If you aligned the two excerpts on top of each other, only the last two chords would be the same. (American composer Donald Martino's landmark edition of the Bach Chorales places the multiple **harmonizations** on top of each other and transposes them to the same key, making them easier to compare.)

### Example 1.200

This media object is an audio file. Please view or download it at  
<Bach42b>

This media object is an audio file. Please view or download it at  
<Bach43b>

Two primary means of **reharmonizing** a melody are to vary the amount of **chromaticism** and change the mode. Franz Liszt's **Totentanz** provides examples of both. **Totentanz** is a fantasia on the **Dies Irae** chant introduced in the first module of "**Hearing Harmony**." Liszt presents this medieval melody in many different harmonic guises.

In this example, the melody is supported by a diatonic progression in minor.

### Example 1.201

This media object is an audio file. Please view or download it at  
<Liszt01>

This version widens the harmonic palette with more chromaticism.

### Example 1.202

This media object is an audio file. Please view or download it at  
<Liszt02>

<sup>32</sup>This content is available online at <<http://cnx.org/content/m35130/1.1/>>.

In this magical passage, Liszt recasts a fragment of the theme in Major. If you hear a dash of chromaticism at the end—you're right!

**Example 1.203**

This media object is an audio file. Please view or download it at  
<Liszt03>

Jazz improvisers are celebrated for their high octane, spontaneous reharmonizations. Here is the traditional harmonization of the Christmas song **O Tannenbaum**.

**Example 1.204**

This media object is an audio file. Please view or download it at  
<Tannenbaum01>

Compare that with Wynton Marsalis' fanciful **reharmonization**.

**Example 1.205**

This media object is an audio file. Please view or download it at  
<Tannenbaum02>

Listening to **reharmonization** is like watching a favorite actor take on a new role: You recognize the actor's identity but marvel at his or her fresh "persona." Diatonic **harmonizations** may feel more tightly "scripted." Added chromaticism makes it seem as if the actor is ad libbing. When there is a change of mode, it is as if a performer better known for comedy takes on a serious role or one typically cast as the villain plays a romantic lead.

When you recognize a melody's refrain, try to discern if it is harmonized differently. If it is, evaluate how extensive the changes are: Does the progression differ only in a few details or is it substantially new? Is the chromaticism increased? Is there a change of mode?

### 1.33 Listening Gallery: Reharmonizing a Melody<sup>33</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

The following examples pair two examples of a melody from the same work. Evaluate whether the harmonizations are essentially the same or substantially reharmonized.

**Exercise 1.33.1**

*(Solution on p. 156.)*

This media object is an audio file. Please view or download it at  
<Bach54>

This media object is an audio file. Please view or download it at  
<Bach55>

*(select one)*

- a) The harmonizations are the same
- b) The harmonizations are different

**Exercise 1.33.2**

*(Solution on p. 156.)*

This media object is an audio file. Please view or download it at  
<Gershwin01>

This media object is an audio file. Please view or download it at  
<Gershwin02>

*(select one)*

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<sup>33</sup>This content is available online at <<http://cnx.org/content/m35146/1.2/>>.

- a) The harmonizations are essentially the same; only the last chords are different
- b) The melody is substantially reharmonized

**Exercise 1.33.3***(Solution on p. 156.)*

This media object is an audio file. Please view or download it at  
<Haydn10>

This media object is an audio file. Please view or download it at  
<Haydn11>

*(select one)*

- a) The harmonizations are the same
- b) The harmonizations are different

**Exercise 1.33.4***(Solution on p. 156.)*

This media object is an audio file. Please view or download it at  
<Debussy09>

This media object is an audio file. Please view or download it at  
<Debussy10>

*(select one)*

- a) The harmonizations are exactly the same
- b) The harmonizations are different

**Exercise 1.33.5***(Solution on p. 156.)*

This media object is an audio file. Please view or download it at  
<Russia01>

This media object is an audio file. Please view or download it at  
<Russia02>

*(select one)*

- a) The harmonizations are the same
- b) The harmonizations are different

**Exercise 1.33.6***(Solution on p. 156.)*

This media object is an audio file. Please view or download it at  
<Rachmaninoff02>

This media object is an audio file. Please view or download it at  
<Rachmaninoff03>

*(select one)*

- a) The harmonizations are the same
- b) The harmonizations are different

## 1.34 Conclusion<sup>34</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

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<sup>34</sup>This content is available online at <<http://cnx.org/content/m35097/1.1/>>.

The foundation of **hearing harmony** in classical music consists of being able to distinguish between the **Major** and **minor modes**, discriminate between harmonic **fulfillment** and **postponement**, tell the difference between **diatonic** and **modulatory progressions**; recognize the **reharmonization** of a melody and the **intensification** of harmonic motion; and begin to judge **harmonic distance**. You have also learned to use perceptual cues and your emotional responses to help you evaluate harmony. With these tools, you will be better able to follow the larger harmonic argument of a tonal work.

Examples have been chosen because they are clear and unequivocal: The fact that they come from some of the most celebrated repertoire is proof of their value. However, great music also incorporates a lot of “greys” — passages that bend archetypes or even break them. Thinking clearly is the best way to interpret complexity: By mastering the principles of “**Hearing Harmony**,” you will be able to develop more refined and nuanced hearing with continued exposure and repeated listening.

The overriding lesson of “**Hearing Harmony**” is: **LISTEN FOR CADENCES**. They light the way on your harmonic voyage: They tell you the mode. They indicate if you are moving harmonically and staying in one place. When they are interfered with, they require more music by postponing closure. If you toggle your primary focus between themes and motives in the first part of a phrase and cadences at the end, you can follow the content of a classical work very adeptly.

We now turn our attention to the special challenges created by the loss of **Common Practice** in the twentieth century.

## Solutions to Exercises in Chapter 1

### **Solution to Exercise 1.4.1 (p. 104)**

This theme and variation share the same harmonic progression.

### **Solution to Exercise 1.4.2 (p. 104)**

This theme and variation share the same harmonic progression.

### **Solution to Exercise 1.4.3 (p. 104)**

The second verse includes an insertion before rejoining the original harmonic progression.

### **Solution to Exercise 1.4.4 (p. 105)**

Both excerpts are variations on the same theme and preserve its harmony.

### **Solution to Exercise 1.4.5 (p. 105)**

These excerpts are settings of the same Chorale melody but they are harmonized differently.

### **Solution to Exercise 1.4.6 (p. 105)**

These variations - one for piano, the other for orchestra - are based on the same harmonic progression.

### **Solution to Exercise 1.6.1 (p. 107)**

The harmonic rhythm slows down.

### **Solution to Exercise 1.6.2 (p. 107)**

The harmonic rhythm stays the same.

### **Solution to Exercise 1.6.3 (p. 107)**

The harmonic rhythm speeds up.

### **Solution to Exercise 1.6.4 (p. 107)**

The harmonic rhythm stays the same.

### **Solution to Exercise 1.6.5 (p. 107)**

The harmonic rhythm speeds up.

### **Solution to Exercise 1.6.6 (p. 107)**

The harmonic rhythm slows down.

### **Solution to Exercise 1.6.7 (p. 108)**

The harmonic rhythm speeds up.

### **Solution to Exercise 1.8.1 (p. 109)**

Fixed

### **Solution to Exercise 1.8.2 (p. 109)**

Roaming

### **Solution to Exercise 1.8.3 (p. 109)**

Fixed

### **Solution to Exercise 1.8.4 (p. 109)**

Fixed

### **Solution to Exercise 1.8.5 (p. 109)**

Roaming

### **Solution to Exercise 1.8.6 (p. 109)**

Roaming

### **Solution to Exercise 1.8.7 (p. 109)**

Fixed

### **Solution to Exercise 1.8.8 (p. 110)**

Roaming

### **Solution to Exercise 1.8.9 (p. 110)**

Roaming

### **Solution to Exercise 1.11.1 (p. 112)**

This excerpt contains a Circular harmonic progression.

### **Solution to Exercise 1.11.2 (p. 112)**

This excerpt contains a Linear harmonic progression.

### **Solution to Exercise 1.11.3 (p. 113)**

This excerpt contains a Circular harmonic progression.



**Solution to Exercise 1.11.4 (p. 113)**

This excerpt contains a Circular harmonic progression.

**Solution to Exercise 1.11.5 (p. 113)**

This excerpt contains a Linear harmonic progression.

**Solution to Exercise 1.11.6 (p. 113)**

This excerpt contains a Circular harmonic progression.

**Solution to Exercise 1.11.7 (p. 113)**

This excerpt contains a Linear harmonic progression.

**Solution to Exercise 1.11.8 (p. 113)**

This excerpt contains a Circular harmonic progression.

**Solution to Exercise 1.15.1 (p. 119)**

This excerpt is in the Major mode.

**Solution to Exercise 1.15.2 (p. 119)**

This excerpt is in the Major mode.

**Solution to Exercise 1.15.3 (p. 119)**

This excerpt is in the minor mode.

**Solution to Exercise 1.15.4 (p. 119)**

This excerpt is in the Major mode.

**Solution to Exercise 1.15.5 (p. 119)**

This excerpt is in the minor mode.

**Solution to Exercise 1.15.6 (p. 119)**

This excerpt is in the Major mode.

**Solution to Exercise 1.15.7 (p. 119)**

This excerpt is in the minor mode.

**Solution to Exercise 1.15.8 (p. 120)**

This excerpt is in the Major mode.

**Solution to Exercise 1.15.9 (p. 120)**

This excerpt begins in Major and moves to the minor mode.

**Solution to Exercise 1.15.10 (p. 120)**

This excerpt begins in minor then moves to the Major mode.

**Solution to Exercise 1.15.11 (p. 120)**

This excerpt begins in Major and moves to the minor mode.

**Solution to Exercise 1.15.12 (p. 120)**

The music switches to Major when the piano enters

**Solution to Exercise 1.15.13 (p. 120)**

The music switches to Major when the choir enters.

**Solution to Exercise 1.17.1 (p. 122)**

The first excerpt remains in the key and is diatonic.

**Solution to Exercise 1.17.2 (p. 122)**

The first excerpt remains in the key and is diatonic.

**Solution to Exercise 1.17.3 (p. 122)**

The first excerpt moves from the original key and is modulating.

**Solution to Exercise 1.17.4 (p. 123)**

The first excerpt stays in the original key and is diatonic.

**Solution to Exercise 1.17.5 (p. 123)**

The first excerpt stays in the original key and is diatonic.

**Solution to Exercise 1.17.6 (p. 123)**

The first excerpt stays in the original key and is diatonic.

**Solution to Exercise 1.17.7 (p. 123)**

The first excerpt moves from the original key and is modulating.

**Solution to Exercise 1.19.1 (p. 125)**

This excerpt concludes with a half cadence.

**Solution to Exercise 1.19.2 (p. 125)**

This excerpt concludes with a full cadence.

**Solution to Exercise 1.19.3 (p. 125)**

This excerpt concludes with a half cadence.

**Solution to Exercise 1.19.4 (p. 125)**

This excerpt concludes with a half cadence.

**Solution to Exercise 1.19.5 (p. 126)**

This excerpt concludes with a full cadence.

**Solution to Exercise 1.19.6 (p. 126)**

This excerpt concludes with a half cadence.

**Solution to Exercise 1.19.7 (p. 126)**

This excerpt concludes with a full cadence.

**Solution to Exercise 1.19.8 (p. 126)**

This excerpt follows the half-full cadence scheme.

**Solution to Exercise 1.19.9 (p. 126)**

This excerpt contains no half-cadences.

**Solution to Exercise 1.19.10 (p. 126)**

This excerpt follows the half-full cadence scheme.

**Solution to Exercise 1.19.11 (p. 126)**

Both cadences are to the tonic.

**Solution to Exercise 1.19.12 (p. 127)**

This excerpt follows the half-full cadence scheme.

**Solution to Exercise 1.21.1 (p. 129)**

This excerpt includes postponement of closure.

**Solution to Exercise 1.21.2 (p. 129)**

This time, Figaro's aria is prolonged by deceptive cadences.

**Solution to Exercise 1.21.3 (p. 129)**

A deceptive cadence prolongs the phrase.

**Solution to Exercise 1.21.4 (p. 129)**

The tonic cadence is disrupted.

**Solution to Exercise 1.21.5 (p. 129)**

The first attempt at a tonic cadence is disrupted, briefly postponing closure.

**Solution to Exercise 1.21.6 (p. 130)**

The cadence of the clarinet solo is rudely interrupted.

**Solution to Exercise 1.23.1 (p. 133)**

This excerpt is diatonic.

**Solution to Exercise 1.23.2 (p. 133)**

This excerpt is chromatic.

**Solution to Exercise 1.23.3 (p. 133)**

This excerpt is chromatic.

**Solution to Exercise 1.23.4 (p. 133)**

This excerpt is diatonic.

**Solution to Exercise 1.23.5 (p. 133)**

This excerpt is diatonic.

**Solution to Exercise 1.23.6 (p. 133)**

This excerpt is chromatic.

**Solution to Exercise 1.23.7 (p. 133)**

This excerpt is diatonic.

**Solution to Exercise 1.23.8 (p. 134)**

This excerpt is chromatic.

**Solution to Exercise 1.24.1 (p. 135)**

**Solution to Exercise 1.24.2 (p. 136)**

**Solution to Exercise 1.24.3 (p. 136)**

**Solution to Exercise 1.31.1 (p. 148)**

Final cadence in minor. If you noticed brief postponement of closer in the final phrase, you're correct!

**Solution to Exercise 1.31.2 (p. 148)**

Picardy Third

**Solution to Exercise 1.31.3 (p. 148)**

Closing Section in Major

**Solution to Exercise 1.31.4 (p. 148)**

Final cadence in minor

**Solution to Exercise 1.31.5 (p. 148)**

Closing section in major

**Solution to Exercise 1.31.6 (p. 149)**

Picardy Third

**Solution to Exercise 1.33.1 (p. 150)**

The harmonizations are different: The two excerpts share only the last two chords! Without altering the melody, Bach even manages to harmonize the first phrases in different modes: That of "Befiehl" in Major whereas "Und ob gleich" is in minor.

**Solution to Exercise 1.33.2 (p. 150)**

The harmonizations are essentially the same; only the last chords are different.

**Solution to Exercise 1.33.3 (p. 151)**

The harmonizations are different. The first excerpt is in minor, the second in Major.

**Solution to Exercise 1.33.4 (p. 151)**

The harmonizations are different. The first excerpt begins with the melody unaccompanied, while the second one adds harmony throughout; and the first excerpt is completely diatonic until the last chord while the second one is considerably more chromatic.

**Solution to Exercise 1.33.5 (p. 151)**

The second excerpt has a thicker orchestration and new voicings and voice-leading but the harmonizations are the same.

**Solution to Exercise 1.33.6 (p. 151)**

The harmonizations are spectacularly different: The second has a more elaborate harmonic palette and is more chromatic.

## Chapter 2

# Part III: The Language of Transformation

### 2.1 Part II: The Language of Transformation<sup>1</sup>

NOTE: You must have the latest version of Macromedia's free Flash plugin<sup>2</sup> to play the musical examples.

In the Introductory section of “Sound Reasoning,” we focused on listening to the overall “story of what happens” in a musical work. In this Intermediate section of the course, we move from a more global, comprehensive view to a more detail-oriented examination. We visit the composer’s workshop to study how musical content is created.

In order to understand verbal rhetoric, you need to know the meaning of words. In order to understand music, you need to comprehend the **language of transformation**.

If a listener does not connect with the music’s development, then he or she may notice instrumental colors and perceive gestures and **flow**, but he or she will miss the music’s **content**. It would be like going to a Shakespeare play and paying attention to the costumes and scenery and vocal inflections but not the meaning of the words. When you speak the language of transformation, music has a much greater impact. A listener conversant in the language of transformation can cast their net of awareness into the music and catch many of the thematic and motivic references. The more the listener is familiar with the piece, the finer this net becomes. The purpose of the modules that follow is to enable you to construct that net.

Whereas words can **describe** transformation; music actually **enacts** it. A rose may wither, a hero grow strong, but the words “rose” and “hero” themselves do not change. In music, the sounds and patterns **develop**. Thus, when you speak the language of transformation, you are able to follow the fate of the musical material.

In order to learn the **language of transformation**, we first need to establish how **musical identity** is created. We will then examine how identity can refashioned.

The following interactive exercise will illustrate the **language of transformation**:

First, please listen to Nicolo Paganini’s **Caprice No. 24** for violin:

#### Example 2.1

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<http://cnx.org/content/m15159/latest/http://music.cnx.rice.edu/Brandt/languagegetransformation/ex1.mp3>

<sup>1</sup>This content is available online at <<http://cnx.org/content/m15159/1.5/>>.

<sup>2</sup>[http://www.macromedia.com/shockwave/download/download.cgi?P1\\_Prod\\_Version=ShockwaveFlash&application/x-shockwave-flash](http://www.macromedia.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash&application/x-shockwave-flash)

**Exercise 2.1.1***(Solution on p. 197.)*

Now, listen to the following five excerpts. Four of these were composed by different composers as **variations** of Paganini's theme: That is, they preserve the **identity** of Paganini's theme but modify it in some way. One of the excerpts is **not** based on Paganini's theme. If Paganini's theme indeed has a tangible identity, you should be able to pick out the "impostor."

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<http://cnx.org/content/m15159/latest/http://music.cnx.rice.edu/Brandt/languagetransformation/ex2.mp3>

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<http://cnx.org/content/m15159/latest/http://music.cnx.rice.edu/Brandt/languagetransformation/ex3.mp3>

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<http://cnx.org/content/m15159/latest/http://music.cnx.rice.edu/Brandt/languagetransformation/ex4.mp3>

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<http://cnx.org/content/m15159/latest/http://music.cnx.rice.edu/Brandt/languagetransformation/ex6.mp3>

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As we study the **language of transformation**, we will be able to refine our understanding of what unites the Paganini theme and its variations. In music, so much of the work's message hinges on identity and transformation: the make-up of a musical idea and how long it is maintained; and how fast development happens, how long it lasts and how far it goes.

## 2.2 Musical Identity<sup>3</sup>

NOTE: You must have the latest version of Macromedia's free Flash plugin<sup>4</sup> to play the musical examples.

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<sup>3</sup>This content is available online at <<http://cnx.org/content/m15158/1.1/>>.

<sup>4</sup>[http://www.macromedia.com/shockwave/download/download.cgi?P1\\_Prod\\_Version=ShockwaveFlash&application/x-shockwave-flash](http://www.macromedia.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash&application/x-shockwave-flash)

“She was dressed in rich materials—satins, and lace, and silks—all of white. Her shoes were white. And she had a long white veil dependent from her hair, and she had bridal flowers in her hair, but her hair was white.” With these words, Charles Dickens introduces the character of Miss Havisham in his novel **Great Expectations**.

How is **musical identity** established? How can we describe the basic attributes of a musical idea?

A writer might portray a character through details of physical appearance, background and behavior. We will view **musical identity** as being created by rhythm, melody, harmony, pitch content and instrumental color.

### 2.2.1 Rhythm

Because music is a time-art, **rhythm** is the most basic element of musical identity. Most generally, speed helps to characterize the music: Fast music is different from slow.

#### Example 2.2

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More concretely, a repeating **rhythmic pattern** may underlie a musical idea.

#### Example 2.3

In Maurice Ravel’s **Bolero**, a fixed rhythmic pattern—first played by the snare drum—anchors the entire composition.

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**Example 2.4**

In this excerpt from Steve Reich's **Music for Large Ensemble**, the evolving texture grows out of an underlying rhythmic pattern.

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The term **motive** refers to a short, elemental fragment. If the entire pattern or theme is a necklace, then **motives** are its beads.

**Example 2.5**

A **rhythmic motive** may be a key identifying feature. The opening of Beethoven's Symphony No. 5 consists of music's most famous rhythmic motives: "three dots and a dash."

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**Example 2.6**

In this excerpt, the rhythmic motive is passed around the orchestra:

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**Example 2.7**

Lalo Schifrin's theme for **Mission Impossible** contains a rhythmic motive consisting of "two dots and a dash." A fixed pattern, or **ostinato**, underlies the **Mission Impossible** theme, also contributing to its identity.

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A **rhythmic motive** can take any melodic shape: In the **Mission Impossible** example, the motive at first heads downwards three times in succession. It then appears three more times: These times, however the motive "curls" upwards. The rhythms are identical but the melodic shape is not strict.

Thus, extended rhythmic **patterns** and shorter **motives** may be embedded in a musical idea, contributing to its identity.

## 2.2.2 Melody

**Melody** is music's most familiar and intuitive term: It's what we sing or hum. In classical and popular music, it is often the primary focus of our attention.

Melody has two components: rhythm, combined with the rising and falling of pitch.

Clearly, rhythm alone does not make a melody: Try singing the rhythm of "I've Been Working on the Railroad" in a monotone. Stripped of pitch inflection, it is no longer a song. But pitch alone is not enough either. Try singing "I've Been Working" in even-valued rhythms: It loses its form like a crumpled shirt. Thus, melody is a **hybrid** concept: It incorporates both rhythm and pitch. When we speak of melodic **contour** and **motive**, rhythm is often implicated as well.

The **contour** of a melody describes its shape. The **contour** of the principal theme of Anton Bruckner's **Symphony No. 8** rises ever higher in three short thrusts and then sinks back down:

### Example 2.8

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### Example 2.9

Bruckner maintains the **contour** but varies the details in this soft statement by the French Horn:

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### Example 2.10

This climactic statement by the brass includes one extra push upward:

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### Example 2.11

Let's recall the theme Nicolo Paganini's **Caprice No. 24 for solo violin**, this time in a playful orchestration by Witold Lutoslawski.

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### Example 2.12

One of the identifiable features of Paganini's theme is that its contour rollicks up and down predictably. In this variation, Lutoslawski scrubs away the melodic and rhythmic details, leaving only the contour. Paganini's theme is recognizable by its shape.

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**Example 2.13**

Often, melodies can be analyzed as being made up of one or more motives. The opening theme of Ludwig van Beethoven's **Sonata in E, Opus 109** is made of a short-long motive. The motive alternates direction, first going up and then going down.

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**Example 2.14**

The opening theme of Dmitri Shostakovich's **Symphony No. 5** is similar: It is also made of a short-long motive. Whereas Beethoven's motive flipped up and down in quick alternation, Shostakovich's motive is repeated before changing direction.

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Thus, the contour of a melody, as well as the primary motives with which it is made, help to identify it.

**2.2.3 Harmony**

Whereas melody is generally described as music's **horizontal dimension**, **harmony** is its **vertical dimension**: It refers to sounds sounding together. Like rhythm and melody, harmony is often an essential part of musical identity.

An individual harmony is called a **chord**. A succession of chords that creates a complete harmonic statement is called a **progression**.

**Example 2.15**

The slow movement of Felix Mendelssohn's **Cello Sonata No. 2** opens with a long harmonic progression played by the piano alone.

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**Example 2.16**

Later, the progression is replayed in its entirety. This time, the cello adds a ruminative melodic line.

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Thus, the harmonic progression is essential to the music's identity.

**Example 2.17**

Similarly, Richard Strauss' song **Morgen** similarly opens with an extended harmonic progression, played by the piano alone. As the voice concludes her first phrase, the progression is replayed, this

time with a soaring vocal line. Once again, the harmonic progression is essential to the music's identity. As you listen to the excerpt, you will notice that the progression deviates at the end: Rather than closing conclusively, Strauss substitutes a suspensive chord that leads to the next section.

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### Example 2.18

Whereas one pitch or one rhythmic attack is not enough to create a motive, a harmonic motif can be created by just **one chord**. Richard Wagner's monumental opera **Tristan und Isolde** is unified by a single harmony—the so-called “Tristan chord.” It reappears obsessively throughout the four-hour drama, constantly resolving in different ways.

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### Example 2.19

Wagner saves one of the most poignant resolutions for the final one.

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### Example 2.20

In his **Chamber Symphony, opus 9**, Schoenberg uses a non-traditional chord as a structural signpost, heralding the beginning of new sections.

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### Example 2.21

The final time this chord appears, Schoenberg turns it upside down:

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Thus, harmony—from entire progressions to individual chords—may be an essential component of musical identity.

## 2.2.4 Pitch content

**Pitch content**—the notes that make up a theme—may be an important element of musical identity.

In classical music, the **pitch content** of themes is drawn either from the Major or minor scales or modes. Because of its acoustic properties, the Major scale is more resonant and “brighter”; the minor scale projects less strongly and is considered more “somber.” The opposition between Major and minor is one of the strongest contrasts of tonal music: Although mood is always subjective, music in Major is more often associated with emotions such as joy, triumph and calm, whereas minor is typically associated with emotions such as sadness, anger and mourning. You’re unlikely to find a wedding march in minor or a lament in Major.

### Example 2.22

Here is a sampling of music in Major.

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### Example 2.23

Here is a sampling of music in minor.

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Twentieth century music features much more diversity in pitch content. Claude Debussy's **Voiles** is based on the whole-tone scale: Unlike the Major and minor scales, the whole-tone scale consists only of evenly spaced steps.

### Example 2.24

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### Example 2.25

Bela Bartok's **Chromatic Invention** from **Mikokosmos, Book III** is based on a more clustered collection of notes.

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### Example 2.26

In Krystof Penderecki's **Threnody for the Victims of Hiroshima**, the pitches are even more densely packed.

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## 2.2.5 Timbre and texture

**Timbre** and **texture** can also contribute to a theme's signature. A classical music devotee needs only to hear the sound of sleigh bells at the Symphony to recognize "Mahler 4".

### Example 2.27

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### Example 2.28

Later in the movement, the sound of the sleigh bells alludes to the main theme.

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### Example 2.29

The opening theme of the second movement of Maurice Ravel's **String Quartet** is played by a striking texture of plucked strings.

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### Example 2.30

Later in the movement, just the sound of plucked strings is enough to evoke the opening theme. Further hints of the theme's identity are sprinkled into the texture, until the theme returns with full force.

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**Example 2.31**

Twentieth century composers were particularly adventurous about exploring new sounds and instrumental combinations. For instance, John Cage invented the prepared piano by inserting screws, erasers, thumb-tacks and other objects inside the piano. The prepared piano's unique timbre is part and parcel of the identity of this work.

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**2.2.6 Conclusion**

Leonardo da Vinci investigated human anatomy in order to understand how better to draw a human figure. We have explored the anatomy of a musical idea. To Da Vinci, the human form was made of skin, bone, muscle and blood. To us, a musical idea consists of rhythm, melody, harmony, pitch content and instrumental color.

**2.3 Maintaining Identity<sup>5</sup>**

NOTE: You must have the latest version of Macromedia's free Flash plugin<sup>6</sup> to play the musical examples.

Once a musical identity has been established, how is it maintained? **Literal repetition**—the same music played over and over —is the most direct way of maintaining identity.

**Example 2.32**

In this excerpt from Antonio Vivaldi's **The Four Seasons**, all that changes in the repetition is the dynamics.

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**Example 2.33**

Popular music relies heavily on **literal repetition** to maintain identity:

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<http://cnx.org/content/m15157/latest/http://music.cnx.rice.edu/Brandt/maintainingidentity/ex2.mp3>

A **round** is a polyphonic way of maintaining identity. In a **round**, the voices enter in turn, each playing the same melody. A **round** is the most self-sufficient musical form: The entire work is created from the melody, in combination with itself. As the imitative voices one after the other, the original line ends up creating its own accompaniment and supplying its own harmony.

<sup>5</sup>This content is available online at <<http://cnx.org/content/m15157/1.1/>>.

<sup>6</sup>[http://www.macromedia.com/shockwave/download/download.cgi?P1\\_Prod\\_Version=ShockwaveFlash&application/x-shockwave-flash](http://www.macromedia.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash&application/x-shockwave-flash)

**Example 2.34**

For the opening of the third movement of his **Symphony No. 1**, Mahler created a round based on the familiar folk melody, **Frère Jacques**. Mahler wrote that the inspiration for this movement was a woodcut titled **The Hunter's Funeral Procession**. To depict the march of mourners, the melody is played in minor, making it more solemn

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**Heterophony** is a looser way of maintaining identity. In a **heterophonic texture**, multiple instruments or voices each perform the same line simultaneously, but each in their own way.

**Example 2.35**

In the following excerpt from Benjamin Britten's **Curlew River**, the instruments join in playing the same melody, each in a slightly different rhythm. Like a caterpillar slinking forward, the melody moves sinuously, as the instruments fall in and out of phase with each other.

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## 2.4 Building on Identity<sup>7</sup>

NOTE: You must have the latest version of Macromedia's free Flash plugin<sup>8</sup> to play the musical examples.

Now that we have established how musical identity is created, it is time to study the **language of transformation**.

Literature is filled with stories of transformation: In the legend of King Arthur, a commoner becomes the ruler of England; in George Bernard Shaw's "Pygmalion," a humble flower girl becomes a "fair lady"; in Charles Dickens' "A Christmas Carol," a miserable miser is transformed into a generous benefactor; in the legend of Siddharta, an Indian Prince gives up his belongings to achieve enlightenment.

Scrooge meets his ghosts; Eliza Doolittle studies diction. How is a musical idea transformed? In music, transformation is achieved through **dynamic repetition**. Whereas literal repetition repeats the music with all its aspects intact, in **dynamic repetition**, some new element or quality is added: That is, one or more aspects of the musical material are kept constant while others change. We will first examine how dynamic repetition can refashion an entire theme. We will then study how dynamic repetition itself is accelerated and intensified through fragmentation.

### 2.4.1 Preserving the Melody

**Transposition** is one of the most basic ways of creating **dynamic repetition**. In its simplest form, an entire musical passage is shifted up or down, as if it were riding in an elevator.

**Example 2.36**


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<sup>7</sup>This content is available online at <<http://cnx.org/content/m15154/1.2/>>.

<sup>8</sup>[http://www.macromedia.com/shockwave/download/download.cgi?P1\\_Prod\\_Version=ShockwaveFlash&application/x-shockwave-flash](http://www.macromedia.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash&application/x-shockwave-flash)

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### Example 2.37

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Preserving the melody but changing its speed modifies the repetition.

### Example 2.38

To evoke a Witches' Sabbath in the final movement of his **Symphonie Fantastique**, Hector Berlioz quotes the “Dies Irae,” the Latin hymn for the dead from the Requiem Mass. Each phrase of the “Dies Irae” is played at three different speeds: First, slow by the low brass; faster and in harmony by the middle range brass; and faster still by the woodwinds.

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### Example 2.39

The melody of Thelonius Monk's **Brilliant Corners** is first played at a leisurely pace, then quickens.

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Varying the register, instrumentation or accompaniment—either individually or collectively—offers ways to presents a theme in a new light.

### Example 2.40

In this excerpt from Peter Ilyich Tchaikovsky's **Symphony No. 6**, the repetition of the lyrical theme is refreshed by a change of register, instrumentation and accompaniment. The theme passes from the cellos to the woodwinds.



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**Example 2.41**

The repetition in this excerpt from Leonard Bernstein's **Candide Overture** is revitalized in a similar way: This time, the theme passes upwards from the cellos to the violins, as the accompaniment becomes more lush.

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**Example 2.42**

Olivier Messaien's **Turangalila Symphonie** offers an example where only the accompaniment changes. At first, the spiky, rhythmically exacting theme is presented over a spare, murmuring background, accentuated by the percussion. As the theme is prolonged, its support becomes more ornate, with elaborate piano figuration.

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Embellishing a melody enlivens its repetition.

**Example 2.43**

The strings initially present the theme of the slow movement of Ludwig van Beethoven's **Piano Concerto No. 5, "Emperor."**

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**Example 2.44**

Later in the movement, the piano presents an embellished version of the theme.

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**Example 2.45**

Thelonius Monk's **Ba-Lue Bolivar Ba-Lues-Are** is based on the following theme:

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<http://cnx.org/content/m15154/latest/http://music.cnx.rice.edu/Brandt/buildingidentity/ex12.mp3>

**Example 2.46**

In this excerpt, Monk's fanciful improvisation leaves just enough details intact to make the original melody still recognizable.

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Preserving the **contour**—the shape of a melody, but not its exact details—is another way of creating dynamic repetition.

**Example 2.47**

Franz Schubert's **String Quartet in G** opens with the following declamation:

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**Example 2.48**

Later in the work, the opening statement is restored, but with its details radically changed:

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The originally jagged rhythms are “smoothed out;” the texture includes plucked strings; the harmony is different. The theme is recognizable primarily from its contour.

**Example 2.49**

The opening theme of the first movement of Bela Bartok's **Music for Strings, Percussion and Celeste** is presented by the violas, alone.

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**Example 2.50**

In the Finale movement, Bartok restores this theme. However, the initially cramped tune is “opened up.” While its contour is maintained, the arcs of its motion are now wider. The addition of lush harmony further invigorates the theme's recurrence.

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Changing clothing can make our physical appearance look different. Similarly, varying the harmony can “dress up” a theme in different ways.

**Example 2.51**

Here are three different harmonizations of the Promenade theme from Modest Mussorgsky's **Pictures at an Exhibition**.

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### Example 2.52

In these excerpts, the nearly “unclothed” theme of Claude Debussy’s **La fille aux cheveux de lin**, is followed by two different harmonizations.

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In tonal music, playing a melody in the opposite mode creates a very significant change.

### Example 2.53

This melody from Wolfgang Amadeus Mozart’s **Symphony no. 38, “Prague,”** is first played in Major, then switches to minor before reclaiming Major.

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### Example 2.54

Conversely, the primary theme from the first movement of Franz Schubert’s **String Quartet in a-minor** is first played in minor, then switches to Major, before returning abruptly back to minor.

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Thus, we have seen how a melody may be preserved, but its repetition varied through changes in speed, instrumentation, accompaniment and harmony.

The most rigorous and self-sufficient way of building on melodic identity is a **canon**. Like a round, a **canon** is based on imitation. In a round, the voices are cyclical: Like a merry-go-round, the voices keep replaying the same tune and underlying harmonic progression over and over again. A canon, on the other hand, is through-composed: Rather than turning around in circles, the melody and underlying progression keep moving forward. Thus, our distinction: rounds maintain the identity of a theme, whereas canons elaborate on it.

#### Example 2.55

The third movement of Franz Joseph Haydn's **String Quartet in d-minor, Opus 76 No. 2** includes a two-voice canon: The violins play the lead line in unison, which the viola and cello then imitate in full. The canon is divided into two halves, each of which is repeated.

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Twentieth century composers emphasized the plasticity of canons. In most traditional canons, each voice moves in a distinct register, like drivers staying in their lanes. In the following canon by Anton Webern, the voices constantly flip over each other. Like a game of "Three Card Monte," it is easy to lose track of who is where. The repeated notes that recur throughout this brief movement are actually caused by the two canonic lines "bumping" up against each other.

#### Example 2.56

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American composer Conlon Nancarrow created an innovative series of canons for player piano. Using a mechanical means of performance enabled him to conceive of rhythm relationships too complex for a human performer. In **Study No. 24**, the three voices are moving in a speed ratio of 14/15/16. The effect is similar to heterophony; but here the voices are split into different registers.

#### Example 2.57

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These twentieth century examples dramatize how canons build on identity. Though Webern and Nancarrow's canons are each based on a single melodic line, the complexity of the canons disguise this internal consistency. The resulting textures take on a life of their own.

### 2.4.2 Preserving the Harmony

In many different genres and styles of music, dynamic repetition of the **harmonic progression** is a primary way of transforming the material.

In a classical “theme and variations,” the variations are based on the **harmonic progression** of the theme. The following excerpts are from a set of variations for string quartet by Franz Schubert based on his song “Death and the Maiden.” The variations offer a sampling of the diversity that can be created from a single progression.

**Example 2.58**

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As in a theme and variations, the underlying harmonic progression is maintained in a traditional jazz improvisation: As the progression is repeated, each member of the ensemble takes turn creating a spontaneous melody on top of it.

**Example 2.59**

Here is the progression underlying Miles Davis’ **So What**, followed by the piano solo.

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In a classical theme and variations and traditional jazz, the piece will have **one** underlying progression that cycles repeatedly. In other works, there may be a greater assortment of harmonies and progressions.

**Example 2.60**

In the following excerpt from **Sheherezade: The Sea and Sinbad’s Ship**, Nikolai Rimsky-Korsakov creates a rhapsodic, extended melody.

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**Example 2.61**

The “bead” of this elaborate melodic strand is a short motive that is transposed over and over. Later in the work, an intense passage builds on the identity of the harmony: The motive is at first absent, but the progression that supports it is played repeatedly. At the end of the excerpt, the motive returns forcefully in the low brass—fitting in perfectly on top of the already present harmonic progression.

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**Example 2.62**

The following excerpt is from the second movement of Stravinsky’s **Symphony of Psalms**. Beneath the women’s voices, the lower strings are playing the movement’s main theme.

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**Example 2.63**

In the third movement, Stravinsky alludes to this passage by replaying its harmonic progression in slow motion. The men’s vocal line is a variation of the second movement theme.

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<http://cnx.org/content/m15154/latest/http://music.cnx.rice.edu/Brandt/buildingidentity/ex37.mp3>

Thus, harmonic progression may be preserved, while the surface details are varied.

### 2.4.3 Preserving the Rhythm

Finally, a rhythmic pattern may be maintained, while the melodies and harmonies used to express it are changed.

**Example 2.64**

In Alban Berg’s opera **Wozzeck**, the title character staggers into a tavern after murdering his unfaithful wife. The music in the scene is based on a single rhythm, called by Berg a “mono-rhythm,” first introduced by the percussion.

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**Example 2.65**

The saloon pianist picks up the mono-rhythm and incorporates it into a raucous polka:

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**Example 2.66**

Wozzeck joins in, his vocal line also echoing the mono-rhythm:

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**Example 2.67**

When a neighbor Margret spots blood on Wozzeck's hand, her words are carefully timed to the mono-rhythm.

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**Example 2.68**

In the gradually escalating confrontation, the two singers are accompanied by the mono-rhythm. Berg creates this entire scene from the mono-rhythm without ever playing it the same way twice.

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<http://cnx.org/content/m15154/latest/http://music.cnx.rice.edu/Brandt/buildingidentity/ex42.mp3>

**Example 2.69**

Much of Bernard Herrmann's music for Alfred Hitchcock's thriller **North by Northwest** is focused on the following compact, agitated theme:

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**Example 2.70**

In the climactic scene, as Cary Grant and Eva Marie-Saint are escaping down the slopes of Mount Rushmore, Hermann creates a panoramic display of the theme. In the excerpt that follows, the winds, brass and percussion mimic the rhythm of the theme—but not the notes.

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Thus, a theme may also be reduced to its rhythmic pattern, freeing it to assume many melodic and harmonic forms.

### 2.4.4 Conclusion

We have studied how **dynamic repetition** can revitalize a musical idea. We are now in a better position to assess what the variations by Paganini, Brahms, Lutoslawski and Rochberg had in common with Paganini's original theme.

#### Example 2.71

First of all, Paganini's theme is built out of a single pattern.

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#### Example 2.72

Likewise, all of the variations feature an insistent pattern of their own.

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#### Example 2.73

Notice that this is **not** true of the Schumann example: Its opening pattern is not maintained so literally.

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#### Example 2.74

Second, Paganini's theme is divided into two halves: In the first, the harmonic progression oscillates back and forth between two chords. In the second half, the harmonic progression "opens up" into a broader progression:



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**Example 2.75**

The variations all follow this harmonic plan. They also mimic the pacing of Paganini's harmonies.

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**Example 2.76**

The Schumann follows neither the same harmonic plan nor the same pacing. It also lasts longer!

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Each of the variations has other features in common with Paganini's theme: Just enough of the theme's identity is maintained to preserve its integrity. Meanwhile, the variations leave aspects of its identity behind. For instance, not all follow the theme's contour: Brahms' motive heads downwards, Rochberg's remains rooted in the same place.

Building on identity requires that at least one aspect of the musical idea remain constant: We have observed how melody, harmony and rhythm may all be preserved, while the other features are altered.

In some musical styles and traditions, the means of transformation defines the genre: In jazz, the harmonic progression—such a “twelve-bar blues”—cycles as the ensemble members take turns improvising. In an Indian raga, the soloist improvises over the underlying rhythmic cycle, called a **tala**.

Thus far, we have considered the make-over of an entire musical idea. But composers can also take a hammer to their material and smash it in order to create new forms.

## 2.5 Building on Identity through Fragmentary Repetition<sup>9</sup>

NOTE: You must have the latest version of Macromedia's free Flash plugin<sup>10</sup> to play the musical examples.

In **Great Expectations**, the orphan Pip released from his apprenticeship to his blacksmith stepfather and invited to a life of fortune in London. "I had scant luggage to take with me to London, for little of the little that I possessed was adapted to my new station." Leaving behind most of his belongings gives Pip the freedom to be **transformed**. In music, the same objective is accomplished by **fragmentary repetition**. Fragmentary repetition enables music to evolve rapidly and flexibly.

In fragmentary repetition, the composer takes only a segment of a musical idea and uses it to create new music. The following excerpts from Beethoven's **Sonata in E-Major, opus 109** and Shostakovich's **Symphony No. 5** demonstrate the expressive richness of fragmentary repetition.

### Example 2.77

Let us remind ourselves of Beethoven's theme:

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### Example 2.78

In the excerpts that follow, Beethoven uses the theme's basic short-long motive to create a variety of new textures.

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### Example 2.79

Let us recall as well Shostakovich's theme:

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<sup>9</sup>This content is available online at <<http://cnx.org/content/m15155/1.1/>>.

<sup>10</sup>[http://www.macromedia.com/shockwave/download/download.cgi?P1\\_Prod\\_Version=ShockwaveFlash&application/x-shockwave-flash](http://www.macromedia.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash&application/x-shockwave-flash)

**Example 2.80**

Just like Beethoven, Shostakovich uses his basic motive in different contexts. In the first excerpt, the short-long motive is center stage in a passage of anguished intensity.

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**Example 2.81**

In the second excerpt, the short-long motive anchors a soaring violin melody.

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<http://cnx.org/content/m15155/latest/http://music.cnx.rice.edu/Brandt/fragmentaryrepetition/ex7.mp3>

It is very common to focus on the **head motive**—the first few notes of a theme—as a source of motivic development.

**Example 2.82**

The first movement of Franz Schubert’s **Symphony No. 8, “Unfinished,”** opens with a somber melody played by the cellos.

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**Example 2.83**

In the passage that follows, Schubert dwells on the **head motive** of the theme: He stretches and compresses it and turns it upside down. By the end of the excerpt, he has twisted it quite out of shape: The motive’s rhythm is the same; but instead of rising and falling in a small arch, its contour plunges downwards.

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**Example 2.84**

At the close of the movement, Schubert creates another passage out of the **head motive**. Because the head motive’s repetition is more unmoving and insistent, the mood is more resigned.

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<http://cnx.org/content/m15155/latest/http://music.cnx.rice.edu/Brandt/fragmentaryrepetition/ex10.mp3>

**Example 2.85**

The head motive of Arnold Schoenberg’s **Fantasy for violin and piano** is a repeated note.

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**Example 2.86**

Throughout this work, Schoenberg plays the head motive at different speeds. Here is a slow version:

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**Example 2.87**

Here is a rapid series of repeated notes.

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<http://cnx.org/content/m15155/latest/http://music.cnx.rice.edu/Brandt/fragmentaryrepetition/ex13.mp3>

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**Example 2.88**

Finally, here is a more extended passage in which repeated notes are generously woven into the melodic fabric. This passage acts as a preparation for the transformed return of the primary theme.

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In addition to the **head motive**, other motives can be extracted from a theme. Beethoven's **Symphony No. 6, "Pastorale,"** opens with a bucolic melody:

**Example 2.89**


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**Example 2.90**

The following excerpt is not built from the head motive, but rather from a motive from the **interior** of the theme. The elaboration of this motive is interrupted twice by more complete statements of the theme.

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**Example 2.91**

The first movement of Bela Bartok's **Concerto for Orchestra** introduces a fleet, agitated theme:

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**Example 2.92**

The excerpt that follows features an interior motive of the theme:

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The **contour** of a theme can also serve as a main identifying feature in dynamic repetition.

**Example 2.93**

The theme of the Queen from Nikolai Rimsky-Korsakov's Suite from **Le Coq d'Or** is characterized by a gradually sinking contour:

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**Example 2.94**

The following excerpts refer to the Queen using the falling contour of her theme.

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**Example 2.95**

The main theme of the fourth movement of Bartok's **Music for Strings, Percussion and Celeste** has a "sawtooth" shape:

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**Example 2.96**

Bartok later constructs a new, more poised theme that mimics the main theme's zig-zag motion.

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<http://cnx.org/content/m15155/latest/http://music.cnx.rice.edu/Brandt/fragmentaryrepetition/ex25.mp3>

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**Example 2.97**

The following two passages also allude to the main theme by echoing its contour.

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The theme can also be identified by a **rhythmic motive**. Franz Joseph Haydn's **String Quartet in d-minor** begins with the following melody:

**Example 2.98**

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**Example 2.99**

The melody begins with four equal, long values. Haydn extracts this rhythmic motive and uses it throughout the movement. In the following excerpts, the texture, harmony and melodic contour all are varied; the rhythmic pattern remains the unifying feature.

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**Example 2.100**

The Finale of Dmitri Shostakovich's **Symphony No. 5** begins with a rousing theme:

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<http://cnx.org/content/m15155/latest/http://music.cnx.rice.edu/Brandt/fragmentaryrepetition/ex32.mp3>

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**Example 2.101**

The theme's head motive is as follows:

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<http://cnx.org/content/m15155/latest/http://music.cnx.rice.edu/Brandt/fragmentaryrepetition/ex33.mp3>

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**Example 2.102**

Towards the end of the movement, Shostakovich strips away the melodic contour of the head motive, reducing it to its rhythm.

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<http://cnx.org/content/m15155/latest/http://music.cnx.rice.edu/Brandt/fragmentaryrepetition/ex34.mp3>

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In Philip Dick's futuristic story **Paycheck**, an amnesia-stricken man retrieves an envelope he has left for himself. Inside is a strange collection of objects: "A ticket stub. A parcel receipt. A length of fine wire. Half a poker chip.. A bus token..." What do they have to do with his life? Gradually, he realizes that his younger self had seen into the future and planted these items to enable him to escape from ruthless pursuers. "I must have looked ahead, seen what was coming. The SP (Security Police) picking me up. I must have seen that, and seen what a piece of thin wire and a bus token would do—if I had them with me at the exact moment." From these bits and pieces, he reassembles his identity.

**Fragmentary repetition** is to a listener what the bag of the possessions is to Dick's protagonist: It refreshes the listener's memory while driving the music forward and generating suspense.

### 2.5.1 The Shift from Foreground to Background

Protagonists are not always the center of attention; sometimes, they slip into the background. "It was pleasant and quiet, out there with the sails on the river passing beyond the earthwork...Whenever I watched the vessels standing out to sea with their white sails spread, I somehow thought of Miss Havisham and Estella; and whenever the light struck aslant, afar off, upon a cloud or sail or green hillside or water-line, it was the same."

Similarly, in music, one way to sustain musical material is by shifting it into a supporting role.

**Example 2.103**

Mahler's **Symphony No. 6** opens with a martial rhythm and an assertive theme introduced by the strings and brass.

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<http://cnx.org/content/m15155/latest/http://music.cnx.rice.edu/Brandt/backgroundidentity/ex1.mp3>

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#### Example 2.104

In the excerpt that follows, Mahler isolates a fragment of the theme:

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<http://cnx.org/content/m15155/latest/http://music.cnx.rice.edu/Brandt/backgroundidentity/ex2.mp3>

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#### Example 2.105

Played by plucked strings, the motivic fragment accompanies the woodwinds in an evocative passage.

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<http://cnx.org/content/m15155/latest/http://music.cnx.rice.edu/Brandt/backgroundidentity/ex3.mp3>

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#### Example 2.106

We recall the opening theme of the second movement of Maurice Ravel's **String Quartet**, played by plucked strings.

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<http://cnx.org/content/m15155/latest/http://music.cnx.rice.edu/Brandt/backgroundidentity/ex4.mp3>

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#### Example 2.107

Midway through the movement, the theme recedes into the background: Slowed down and played only by one instrument, it accompanies a lyrical melody. Then, like someone rushing back into the room, the theme speeds up and gets louder, gradually returning to prominence.

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<http://cnx.org/content/m15155/latest/http://music.cnx.rice.edu/Brandt/backgroundidentity/ex5.mp3>

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## 2.5.2 Conclusion

Is there any **one** factor that must be maintained to sustain musical identity? No. We have seen examples where the melody changed, the harmony changed, the rhythm changed, the instrumentation changed. Musical ideas are very malleable.

The more aspects of the original material that are preserved, the stronger its identity is maintained. The fewer the aspects of the original material that are preserved or the more fragmentary the repetition, the farther the music moves away from its original form.

Writers create complex characters by making their behavior multi-faceted and well motivated. Through **dynamic repetition**, composers are able to create musical personalities with a similar suppleness and depth.



## 2.6 Listening Gallery: Building on Identity<sup>11</sup>

NOTE: Please note that you must have the most recent copy of Macromedia's Flash plugin installed to play the musical examples.

### Exercise 2.6.1

(Solution on p. 197.)

The following two passages are taken from Beethoven's **Sonata in E-Major, Opus 109**.

How are they related?

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilisteninggallery/ex1.mp3>

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilisteninggallery/ex2.mp3>

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(select one)

- a) a) The second passage replays the melody of the first, but with new harmony.
- b) b) The second passage consists of almost the same harmonic progression as the first.
- c) c) The second fragments and develops the theme of the first, making it harmonically unstable.
- d) d) The second dramatically speeds up the harmonic rhythm.
- e) e) The two passages are not related.

### Exercise 2.6.2

(Solution on p. 197.)

In Bela Bartok's opera **Bluebeard's Castle**, the following music is used to represent a room filled with tears.

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilisteninggallery/ex3.mp3>

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How does the following passage allude to the room of tears? (Choose one)

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilisteninggallery/ex4.mp3>

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(select one)

- a) a) It elaborates on the tears by shifting the tears' gesture around in register.
- b) b) It abbreviates the tears' gesture and repeats it more quickly.
- c) c) It slows down the pacing.
- d) d) It introduces an entirely new motive of "mourning."
- e) e) It underscores the tears with a heavy chord in the low register.

### Exercise 2.6.3

(Solution on p. 197.)

The excerpt that follows presents a primary theme from the first movement of Franz Schubert's **Symphony No. 8, "Unfinished."**

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<sup>11</sup>This content is available online at <<http://cnx.org/content/m15190/1.1/>>.

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilisteninggallery/ex5.mp3>

How does the following passage relate to this theme? (Choose one)

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilisteninggallery/ex6.mp3>

(select one)

- a) a) The passage is built from the theme's head motive.
- b) b) The passage is built from an interior motive of the theme.
- c) c) The passage replays the theme's harmonic progression.
- d) d) The passage begins very differently from the theme, but gradually becomes more similar.
- e) e) The passage is not related to the theme.

#### Exercise 2.6.4

(Solution on p. 197.)

What is the relationship between these two excerpts from Stravinsky's **Symphony of Psalms**?

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilisteninggallery/ex7.mp3>

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilisteninggallery/ex8.mp3>

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(select one)

- a) a) The textures of the two examples are very similar
- b) b) The theme introduced in the first excerpt is played in its entirety in the second, but with a new accompaniment.
- c) c) The theme introduced in the first excerpt is developed in the second through fragmentary repetition.
- d) d) Only the rhythm, but not the melodic contour, of the theme is preserved.

#### Exercise 2.6.5

(Solution on p. 197.)

Here is main theme of the second movement from Johannes Brahms' **Sonata for Clarinet and Piano, Opus 120 No. 1**.

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilisteninggallery/ex9.mp3>

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How is the following excerpt related to the theme? (Check all that apply)

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilisteninggallery/ex10.mp3>

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(select all that apply)

- a) a) The theme is played in its entirety exactly as at the opening.
- b) b) The clarinet and piano trade roles.
- c) c) The resultant rhythm is different from the outset.
- d) d) In the theme, the piano's lower register moved in small leaps. In the second excerpt, the clarinet sometimes substitutes wide jumps.
- e) e) The harmonic progression begins identically, but then veers off in a different direction.

**Exercise 2.6.6**

(Solution on p. 197.)

The opening of "Uranus" from Gustav Holst's **The Planets** begins with a slow, emphatic statement played by the brass. What happens next?

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilistinggallery/ex11.mp3>

(select one)

- a) a) The brass motive is repeated twice more exactly.
- b) b) The brass repeat the motive once; then the timpani introduces a new idea.
- c) c) The complete motive is repeated twice, but at a faster speed.
- d) d) The motive is fragmented and developed.
- e) e) The motive is played backward.

**Exercise 2.6.7**

(Solution on p. 197.)

Here is the main theme of the third movement of Johannes Brahms' **Sonata for Clarinet, Opus 120, No. 2**.

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilistinggallery/ex12.mp3>

How is the following excerpt related to the theme? (check one)

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilistinggallery/ex13.mp3>

(select one)

- a) a) Brahms focuses on the head motive, using it to create a roving harmonic progression that ends far from where it began.
- b) b) The piano part is identical, but the clarinet part is new.
- c) c) The clarinet part is identical, but the piano part is new.
- d) d) Both parts are new, but the harmonic progression is very close to the original.

**Exercise 2.6.8**

(Solution on p. 197.)

How would you describe the relationship between these two excerpts from Olivier Messaien's **Tu-rangalila Symphonie**? (One correct answer)

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilistinggallery/ex14.mp3>

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilistinggallery/ex15.mp3>

(select one)

- a) a) They are based on the same head motive and contour.
- b) b) They share identical harmonic progressions.
- c) c) They are orchestrated with similar textures.
- d) d) Their resultant rhythm is the same.
- e) e) There is no connection between the two excerpts.

**Exercise 2.6.9**

(Solution on p. 198.)

What is the connection between these two excerpts from the theme song for **Mission Impossible**?

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilistinggallery/ex16.mp3>

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilistinggallery/ex17.mp3>

(select one)

- a) a) They consist of the identical melodic pattern.
- b) b) They are based on the same rhythmic pattern.
- c) c) The textures are identical.
- d) d) The second excerpt plays the rhythmic pattern in slow motion.
- e) e) The two excerpts are not related.

**Exercise 2.6.10**

(Solution on p. 198.)

Here is the opening flute melody of Claude Debussy's **Afternoon of a Faun**.

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilistinggallery/ex18.mp3>

What do the following two excerpts have in common with this theme? (Choose one)

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilistinggallery/ex19.mp3>

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<http://cnx.org/content/m15190/latest/http://music.cnx.rice.edu/Brandt/bilistinggallery/ex20.mp3>

(select one)

- a) a) They are all played by the same instrument.
- b) b) They share the same contour as the opening measures of the flute melody.
- c) c) They contain the same notes as the flute melody.
- d) d) They begin on the same pitch as the flute melody.
- e) e) They are not related to the flute melody.

## 2.7 Speaking the Language of Transformation<sup>12</sup>

NOTE: You must have the latest version of Macromedia's free Flash plugin<sup>13</sup> to play the musical examples.

In the introductory modules, we learned to listen for **what** happens in a piece of music. In "Expository and Developmental," we learned to distinguish between passages where a musical idea is established and those where it is put into action. In "Time's Effect on the Material," we learned to compare expository presentations of the same idea to measure if transformation has taken place. In the intermediate modules "Musical Identity" and "Building on Identity," we have studied **how** these distinctions are made.

The **language of transformation** brings us face to face with music's abstraction. Transformations often have great expressive import. They can alter our time sense, making the music seem to progress very quickly or grind to a halt. They can create a maze of inter-connections, and involve us in the moment-to-moment enacting of a larger destiny. But there is no adequate way to translate them into words; they can never be reduced to a literal meaning. Words have meanings independent of context, but the **language of transformation** is completely context-dependent. We can pull a word out of a paragraph and know its definition, but what does it mean to extract a motive from a musical passage? Remove it from its context and its musical sense is lost.

The speed of transformation also contributes to music's abstraction. The faster and more abundant the transformations, the harder it is for our minds to keep pace. When the music develops rapidly, words fail; music's **non-verbal** nature is enhanced.

### Example 2.108

The last movement of Joseph Haydn's **String Quartet in d-minor, Opus 76, No. 1** introduces the following theme.

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<http://cnx.org/content/m15160/latest/http://music.cnx.rice.edu/Brandt/speakinglanguagegettransformation/ex1.mp3>

In the excerpt that follows, Haydn constructs an elaborate thematic mosaic. The theme is spliced into constantly changing fragments: Within the first few seconds, the cello repeats the opening phrase, then lops off the head motive; the violin imitates this truncated version before moving on to a different pattern.

Everything that happens can be explained in reference to the main theme. However, when listening to this passage in real time, it is simply not possible to put a name to every reminder of the theme as it goes by: The music is moving faster than our ability to articulate what is happening. We have little choice but to experience the music without verbal intrusion.

### Example 2.109

<sup>12</sup>This content is available online at <<http://cnx.org/content/m15160/1.2/>>.

<sup>13</sup>[http://www.macromedia.com/shockwave/download/download.cgi?P1\\_Prod\\_Version=ShockwaveFlash&application/x-shockwave-flash](http://www.macromedia.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash&application/x-shockwave-flash)

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<http://cnx.org/content/m15160/latest/http://music.cnx.rice.edu/Brandt/speakinglanguage/transformations/ex2.mp3>

Wolfgang Rihm's **String Quartet No. 4** opens with an aggressive theme, played in unison by the four strings.

**Example 2.110**

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<http://cnx.org/content/m15160/latest/http://music.cnx.rice.edu/Brandt/speakinglanguage/transformations/ex3.mp3>

As in the Haydn, the excerpt that follows is filled with references to the theme: For instance, the **head motive** is played at a variety of speeds. The musical language and rhetoric are different and some of the alterations are more extreme, but the goal is the same: **dynamic repetition**. As in the Haydn, we can put a name to the various fragments: The head motive, for instance, is played at a variety of speeds. However, the music presents these transformations in a whirlwind that taxes our ability to keep up.

**Example 2.111**

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<http://cnx.org/content/m15160/latest/http://music.cnx.rice.edu/Brandt/speakinglanguage/transformations/ex4.mp3>

"No change" is also part of the language of transformation. As we discussed in "Time's Effect on the Material," when an entire passage is recuperated exactly as it was before, it speaks to the music's endurance and transcendence. If those literal returns occur in close succession, time has not had much chance to have an effect. However, if there is a lot of intervening music and the music **still** manages to come back unchanged, we will often attach great emotional significance to the return.

In Thomas Mann's novel **The Magic Mountain**, the patients at the tuberculosis clinic are presented with a dilemma: In order to heal, they must lie still; if they become active, their illness worsens. Those who take to bed find that time passes slowly; but, looking back, it seems to these patients as if time had rushed by, because their days were nearly empty. Conversely, those who defy their doctors' orders find that time passes quickly; in retrospect, though, time seems to have passed more slowly, because their days were more full. Music that maintains identity is like the patients who stay in bed; music that transforms is like those who refuse to lie still.

Thus, music illuminates the passage of time through the balance of literal and dynamic repetition, and the degree, quality, abundance and pacing of transformation. The great masterworks of the classical and modern eras generally defy doctors' orders: They are alive with development.

## 2.8 How Identity Shapes Form<sup>14</sup>

NOTE: You must have the latest version of Macromedia's free Flash plugin<sup>15</sup> to play the musical examples.

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<sup>14</sup>This content is available online at <<http://cnx.org/content/m15156/1.1/>>.

<sup>15</sup>[http://www.macromedia.com/shockwave/download/download.cgi?P1\\_Prod\\_Version=ShockwaveFlash&application/x-shockwave-flash](http://www.macromedia.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash&application/x-shockwave-flash)

We think of ourselves as being born with certain innate abilities and enthusiasms. Our vision of a fulfilling life is to maximize these gifts and desires. The task of a guidance counselor is to help us sort this out: The counselor assesses our strengths and recommends a path that will make greatest use of them.

In a sense, a composer acts as a “guidance counselor” to his or her material: The aim is to enable the material to determine its form, to allow the material a controlling influence over how its life is lived.

If we felt that we had an innate ability for creative work but circumstances bound us to a desk job, we would feel stifled. Similarly, if the singular qualities of a musical material were to be ignored or overlooked by the composer, the resulting music might feel rigid, arbitrary or unsatisfying. A composer’s task is to listen very carefully to his or her material and extrapolate an appropriate destiny.

In order to explore this principle closely, we are going to study how two traditional forms or procedures—**Sonata Form** and **fugue**—are influenced by the material in works by Mozart and Bartok. First, we will introduce a “standard” description of **Sonata form** and **fugue**. Then, we will demonstrate how the Mozart and Bartok works depart from these conventions and why.

**Sonata form** was one of the primary means of creating extended movements in the Classical era. Sonata Form is divided into three main sections: The **exposition**; the **development**; and the **recapitulation**.

Sonata Form is based on **harmonic contrast**. The **exposition** introduces the contrast: First, it presents the **primary theme** in the home key, called the **tonic**. Then, the music shifts to a contrasting key. Often, a **second theme** is introduced, to emphasize the new key.

The **development** heightens the tension introduced in the exposition by roving among many keys. Thematic fragmentation enables the harmony to progress quickly. Emphasis on the **tonic** is avoided at all costs, as this would undercut the harmonic suspense.

The **recapitulation** returns to the tonic. It offers a full restatement of the exposition but with one fundamental difference. The harmonic tension is reconciled: Both the **primary** and **second themes** are played in the tonic; all of the musical material is united within one key. A concluding section, called a **Coda**, typically rounds out the movement.

Many themes in the classical era were comprised of two halves of equal length. The Finale of Mozart’s **Symphony No. 39** opens with a balanced theme:

#### Example 2.112

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#### Example 2.113

The primary theme of **Mozart’s Symphony No. 40 in g-minor** could have been symmetric.

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#### Example 2.114

However, it isn’t: It is extended, leading to an emphatic cadence. Many of Mozart’s symphonic themes are asymmetric, but this theme has another idiosyncrasy: The extension causes the theme to **overlap** or **elide** with the music that follows. At the opening, a motoric accompaniment introduced the theme. When the theme repeats, it’s the other way round: The theme enters **first**, followed by the accompaniment.

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<http://cnx.org/content/m15156/latest/http://music.cnx.rice.edu/Brandt/shapesform/ex3.mp3>

### Example 2.115

Rather than ignoring or overlooking these idiosyncrasies, Mozart **amplifies** them in the rest of the movement. For instance, when the **second theme** is first played, it is symmetric:

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<http://cnx.org/content/m15156/latest/http://music.cnx.rice.edu/Brandt/shapesform/ex4.mp3>

### Example 2.116

However, when it is immediately repeated, Mozart adds an **extension**.

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<http://cnx.org/content/m15156/latest/http://music.cnx.rice.edu/Brandt/shapesform/ex5.mp3>

### Example 2.117

A transition typically separates the first and second themes in an exposition. In **Symphony No. 40**, the transition is rather short:

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<http://cnx.org/content/m15156/latest/http://music.cnx.rice.edu/Brandt/shapesform/ex6.mp3>

### Example 2.118

In the recapitulation, Mozart could have easily reused this transition by reworking it slightly. However, instead of a “routine” transition, Mozart more than doubles its length, offering some of the most dynamic music of the entire piece.

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<http://cnx.org/content/m15156/latest/http://music.cnx.rice.edu/Brandt/shapesform/ex7.mp3>

### Example 2.119

Just as there are **extensions** throughout the movement, so there are **elisions**. For instance, in the development sections, the lower strings “step on the toes” of the upper ones by entering sooner than expected.

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<http://cnx.org/content/m15156/latest/http://music.cnx.rice.edu/Brandt/shapesform/ex8.mp3>



In a typical Sonata Form, the **recapitulation** is a great moment of affirmation: Stability is emphatically restored with the return of the tonic.

### Example 2.120

In this piece, the boundary between the **development** and the **recapitulation** is not so clear. Instead, the **development** and **recapitulation** overlap: Once again, the theme anticipates its accompaniment; as a result, the crucial tonic harmony does not arrive until the theme has already started.

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<http://cnx.org/content/m15156/latest/http://music.cnx.rice.edu/Brandt/shapesform/ex9.mp3>

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Thus, the asymmetry of Mozart's theme has **deformed** the anticipated behavior of the form. Rather than being perfectly balanced, the form resists equilibrium: It is twisted into surprising shapes by the elisions and extensions.

Mozart's piece makes such a strong impact because of the depth of commitment to its material. Long before life coaches, music such as this has been telling us: "Be true to yourself."

We now turn our attention to an unusual **fugue**. Like a canon, a **fugue** is based on melodic imitation. However, in a **canon**, one voice leads and the others follow from beginning to end. In a **fugue**, the lead changes hands.

In traditional terminology, the sections where the complete theme—called the **fugue subject**—is stated are called **expositions**; these are rooted in a specific key. The sections where the lead changes hands—and the music changes keys—are called **episodes**.

The opening exposition generally stays in the tonic key until all of the voices have entered. This establishes the "home key," from which the music then departs and to which it eventually returns.

The **fugue subject**—is typically drawn from the Major or minor scales. Often, the keys of the expositions are chosen so that, taken as a whole, the sum of the fugue statements adds up to the notes of the scale from which the subject is drawn. Thus, in a fugue in C-Major, the sum total of all the statements will reproduce the C-Major scale (or at least come close).

So far, we have described the design of a traditional fugue. The first movement of Bela Bartok's **Music for Strings, Percussion and Celeste** departs from the standard model.

Bartok's subject is not based on the Major or minor scales. Instead, it is **chromatic**—that is, the notes are pressed closely together, with no open spaces. In **Listen**, Joseph Kerman describes the theme as "tentative, circuitous and troubled."

The imitation of the subject progresses in an unorthodox way. Rather than initially remaining within a home key, the motion away from the starting point is accelerated: The voices enter in pairs, fanning out symmetrically above and below the original statement, until the subject has been played on all twelve notes of the chromatic scale. Here is the fugue statement, followed by the first two imitations, one above and one below the original entry.

### Example 2.121

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### Example 2.122

The music gets louder and louder as the entrances progress, culminating in a powerful arrival at the twelfth and final entrance. Instead of the complete subject, Bartok only plays fragments and—climactically—dwells on the note E-flat—the pitch on which the symmetrically arranged entrances have converged.

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<http://cnx.org/content/m15156/latest/http://music.cnx.rice.edu/Brandt/shapesform/ex11.mp3>

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At the climax, Bartok flips the theme upside down—or **inverts** it. He then retraces his steps back to the work’s starting point.

**Example 2.123**

In the excerpt that follows, you will hear the two penultimate **inverted** entries, which overlap, followed by the return to the original transposition. At the return, Bartok plays the theme right side up and inverted simultaneously. To reinforce the return, the celeste—a bell-like keyboard instrument—enters for the first time.

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**Example 2.124**

At the close of the movement, the texture thins. Finally, the second phrase of the theme is played right side up and upside down, note against note in slow motion:

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By doing so, Bartok makes explicit an implicit feature of his theme: The second phrase is made up of a chromatic cluster that spans half of an octave. Its mirror is made up of the other half of the octave. Play the two clusters together and you get the complete chromatic scale. Not only that, but the note-against-note voices are combined so that they reproduce exactly the paired transpositions of the theme. Thus, this final statement reproduces the entire movement in microcosm.

Describing the ending, Joseph Kerman writes: “When the celesta fades away, all that remains is a thinning group of string instruments...They seem to be searching or yearning for a resting point. In the cadence at the very end, which has become famous for its sense of simple, hushed relief, they find just that.”

The soft dynamic, as well as the slowness and sparseness of the music contribute to the feeling of “simple, hushed relief.” The fact that the final phrase begins and ends on the pitch with which the movement opened—A-natural—contributes to the sense of a final “resting point.”

But what about Kerman’s word “famous”? Cadences in classical music tend to follow well-established formulas. For this work, Bartok has designed a cadence that applies **uniquely** to this work. If the final phrase began and ended on a different pitch than A, it might seem arbitrary:

**Example 2.125**

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**Example 2.126**

If the phrase were played in unison rather than in mirror, it might sound incomplete:

---

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---

Bartok's ending is a perfect summary of the musical action that has preceded it. The final phrase even expands to the pitch E-flat—the same note with which the whole movement climaxed. Consciously or unconsciously, we acknowledge the union of material and form in our emotional response. If the concluding cadence were different, it would not seem as true.

Bartok adopted a traditional technique—**fugue**—but applied it with an unusual way. The more chromatic nature of his theme altered the way the fugue would normally progress. As in the Mozart, the **identity** of the material had an impact on the **life** of the material: The theme engendered its form. Bartok encapsulates this correspondence in his final cadence.

Thus, form can amplify the identity of a material, projecting it on a larger time-scale. It can magnify irregularities, making them more tangible. It can allow time for the implicit to become explicit.

A fulfilling piece of music is a model for a fulfilling life: In showing us how identity can shape form, music can give us direction about how to compose own destinies.

Throughout “Sound Reasoning,” we have focused on how much you can hear, even at a first listening. Connecting material to form requires repeated listening and careful reflection. This topic thus places us on the threshold of more advanced study, where analysis takes place outside of time and studying the score is a great aid. One of the best motivations for close analysis is that it can reveal how material and form are interconnected.

### 2.8.1 Conclusion

In the Introductory portion of “Sound Reasoning,” we postulated that musical intelligibility is rooted in repetition. The most basic popular music is primarily expository: Repetition is literal and complete. Art music tends to be much more developmental: Repetition is often varied and transformed. Therefore, in order to understand more fully understand the content of music that develops, you must be conversant in the “language of transformation.” The preceding modules have explored the means with which dynamic repetition is created.

To write music that is primarily expository, composers take on the challenge of creating memorable material; that takes great skill and inspiration. To write music that develops, composers must not only work to create compelling material: Like Dr. Frankenstein trying to breathe life into inanimate matter, they strive to bring the material more actively to life. Dr. Frankenstein pinned his hopes on a bolt of lightning; composers depend on dynamic repetition. The larger features of a piece of music—its balance of expository and developmental sections, its continuities and contrasts, the placement and character of its recurrences, its overall destiny—are all produced through the layout, progress and effect of dynamic repetition. In the final module of this section, “How Material Engenders Its Form,” we studied how the “fate” of the material—what happens to it in the course of the composition—can be drawn from the nature of the material itself.

Once you speak the language of transformation, you will be able to follow the action in music that develops. Alert to the intensity of its motion and change, this music should never again sound dull or staid.

## Solutions to Exercises in Chapter 2

### Solution to Exercise 2.1.1 (p. 158)

If you can recognize which excerpts fit with Paganini's theme, you are already speaking the language of transformation. Hopefully, you were able to discriminate that the fourth excerpt was "not Paganini:" It is a work by Robert Schumann based on another Paganini Caprice.

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### Solution to Exercise 2.6.1 (p. 186)

Except for a small alteration near the end, the second passage replays the same harmonic progression as the first, but with new surface activity.

### Solution to Exercise 2.6.2 (p. 186)

The second passage tersely echoes the rhythm, contour and texture of the tears and shortens the silences between the gestures.

### Solution to Exercise 2.6.3 (p. 186)

The passage leaves off the head motive, and develops an interior motive of the theme. The interior motive is eventually rhythmically modified, becoming more martial and assertive.

### Solution to Exercise 2.6.4 (p. 187)

The second excerpt with chorus and orchestra develops the theme through fragmentary repetition, particularly dwelling upon the head motive.

### Solution to Exercise 2.6.5 (p. 187)

When the clarinet and piano trade roles, the resultant rhythm is initially identical. However, when the harmony departs from the original progression, so too does the rhythm.

### Solution to Exercise 2.6.6 (p. 188)

The motive is played twice more at a faster speed: Once by the low brass, once by the timpani.

### Solution to Exercise 2.6.7 (p. 188)

**Solution to Exercise 2.6.8 (p. 188)****Solution to Exercise 2.6.9 (p. 189)**

The second excerpt presents an embellished version of the repeating rhythm that underlies the Mission Impossible theme.

**Solution to Exercise 2.6.10 (p. 189)**

Although they differ in details, both excerpts share the same contour as the head motive of the flute melody: Each falls and then rises back to its starting pitch.

## Glossary

### **A Accompaniment**

The support underlying a melody. For instance, in a typical show tune, the singer performs the melody, while the band provides the accompaniment.

### **C Contour**

Whether the basic pattern is played right side up or upside down

### **D Density**

How many notes are played at the same time. For instance, if a pianist plays a chord with all ten fingers, that sound is of higher density than if she or he were to just play with a single finger.

### **Dynamics**

The loudness of the music

### **F Fragmentation**

Smaller segments of the basic pattern are repeated, rather than the whole

### **G Grouping**

The number of notes in a pattern. For instance, the pattern "da-da-dum,

da-da-dum, da-da-dum " consists of a series of three note groupings, whereas "da-da-da-dum, da-da-da-dum, da-da-da-dum" is made up of four note groupings. "Da-dum, da-da-da-dum, da-da-dum" consists of mixed groupings.

### **O Orchestration**

The instruments that are playing the pattern.

### **R Register**

How "high" or "low" the pattern is played. Men sing in the low register, women in the upper. The pianist's left hand generally plays in the low register, the right hand in the upper.

### **S Speed**

How fast the pattern is played

### **T tremolo**

The rapid repetition of a single note or the rapid alternation between several notes.

## Index of Keywords and Terms

**Keywords** are listed by the section with that keyword (page numbers are in parentheses). Keywords do not necessarily appear in the text of the page. They are merely associated with that section. *Ex.* apples, § 1.1 (1) **Terms** are referenced by the page they appear on. *Ex.* apples, 1

- . ., 194
- 2** 20th century music, § (1)
- A** A-form, 34
  - A/B-form, 34
  - Accompainment, 15
  - amplifies, 193
  - atonal, § 1.9(110), 111
  - atonality, 111, 111
  - A', 64, 64
  - A'', 64
- C** cadence, § 1.7(108), 108, 108, § 1.8(109), § 1.14(117), § 1.18(123), § 1.19(125), § 1.20(127), 142, § 1.31(148)
  - Cadences, 108, 108, 108, 108, 108, 108, 108, 108, 118, 124, 141, 142, 142
  - cadencing, 108
  - canon, 173, 194
  - canon., 173
  - chaconne, § 1.10(111), § 1.11(112)
  - chamber music, § (1)
  - Change, 75
  - chant, § 1.2(100)
  - chant., 99
  - chord, 101
  - chord progression, 101, 102
  - chromatic, § 1.22(130), 130, 130, 130, 130, 130, 130, 131, 131, § 1.23(132), § 1.33(150)
  - chromatic scale, 130, 132, 138
  - Chromaticism, 130, 131, 131, 131, 131, 131, 132, 132, 132, 132, 132, 137, 137, 137, 144
  - circle of fifths, 139, 140, 141, 142, 143
  - circular, § 1.10(111), § 1.11(112), 112
  - circular progression, 111, 112
  - Circular progressions, 111, 112, 112, 112
  - classical music, § (1)
  - closure, § 1.20(127), § 1.30(146), § 1.31(148)
  - Coda, 145, 145, 145, 145, 192
  - Codas, 145
  - common practice, § 1.12(114), 114, 114
  - Common Practice harmony, 114, 115
  - Common Practice tonality, 114, 114
  - consonance, 86, § 1.24(134)
  - Consonant, 135
  - Contour, 15
  - contrast, 144
  - counterpoint, 102
  - cycle, § 1.10(111)
  - D** deceptive cadence, 128, 128, 128, 128, 128, 128, 128, 131
    - deceptive cadences, 128
    - Density, 15
    - destiny, § (51)
    - development, § (1), 39, 39, 45, 45, 86, 192, 192, 194
    - development passages, 41
    - developmental, § (39), 39, 39, 45, 46, § (47)
    - developmental passages, 40
    - diatonic, § 1.17(122), 122, § 1.23(132), 152
    - diatonic progression, 121
    - diatonic progressions, 121, 121, 122
    - dissonance, 86, § 1.24(134), 134, 134, 134, 135, 135, 135, 136, 137, 137, 137, 137, 137, 137, 137
    - Dissonances, 134, 134, 134, 134, 134, 134, 135
    - dissonant, 136
    - dissonant chords, 135
    - distance, § 1.28(142)
    - dominant, 124, 124, 124, 144, 144
    - duration, 75
    - dynamic repetition., 168
    - Dynamics, 15
  - E** emphasis, § (19), § (29)
    - ending, § 1.30(146)
    - episodes, 194
    - exposition, § (1), 39, 45, 192, 192
    - expositions, 194
    - expository, § (39), 39, 39, 44, 45, 45, 46, § (47)
    - expository passages, 41
    - expository statements, 40
    - expression, § (97)

- Extremes, 75
- F** figuration, 101  
 final, § 1.30(146)  
 fixed, 109  
 form, § (33)  
 Fragmentary repetition, 184  
 fragmentary repetition., 179  
 Fragmentation, 15  
 fugue, 192, 192, 194, 194, 194, 196  
 fugue subject, 194, 194  
 full cadence, 124, 124, 124, 124, 124, 125, 127, 127, 127, 128  
 full cadences, 124, 125  
 full tonic cadence, 125
- G** Grouping, 15  
 guide, § (75)
- H** half, 125, 125  
 half cadence, 124  
 half-cadence, 124, 124, 124, 124, 125  
 half-cadence., 127  
 half-cadences, 124  
 half-step, 115  
 half-steps, 115  
 harmonic, § 1.3(101), 101, § 1.4(104), § 1.6(106), § 1.13(115), § 1.28(142), 192  
 harmonic coordination, 88, 88  
 harmonic distance, 141, 142, 143, 143, 144, 152  
 harmonic goals, 142, 144  
 harmonic music, 99  
 harmonic progression, 101, 102, 102, 102, 103, 103, 103, 103, § 1.10(111)  
 harmonic progressions, 102  
 Harmonic rhythm, 105, 105, 106, 106, 106, 106, 106, 106, 106, 107  
 harmonic rhythms, 106  
 harmonic structure, 100, 100  
 harmonization, 149, 149, 149, § 1.33(150)  
 harmonizations, 149, 150  
 harmony, § (1), 88, § 1.2(100), 101, 104, § 1.4(104), § 1.7(108), § 1.9(110), § 1.13(115), § 1.14(117), § 1.20(127), § 1.22(130), § 1.25(137), § 1.27(140), § 1.32(149), § 1.33(150)  
 Heterophony, 168
- K** key, § 1.9(110), § 1.16(121), 121, 121, 121, § 1.18(123), § 1.19(125), § 1.22(130), § 1.25(137), 138, 138, 138, § 1.26(139), § 1.27(140)  
 keys, 138
- L** linear, § 1.10(111), § 1.11(112), 112  
 linear progression, 112, 112  
 Linear progressions, 112  
 listening, § 1.15(118), § 1.19(125), § 1.23(132)  
 listening gallery, § (95)  
 literal repetition, 86, 86, 167
- M** major, § 1.12(114), 114, 114, 114, 114, 114, 115, 115, 115, § 1.13(115), § 1.14(117), 118, § 1.15(118), § 1.25(137), 152  
 Major mode, 114  
 Major-minor contrast, 114, 115  
 melodic, § 1.13(115)  
 melody, § (1), § 1.32(149), 149, 149  
 Middle Ages, § 1.2(100)  
 minor, § 1.12(114), 114, 114, 114, 114, 114, 115, 115, 115, 115, § 1.13(115), § 1.14(117), 118, § 1.15(118), § 1.25(137), 148  
 minor mode, 114  
 minor modes, 152  
 minor scale, 115  
 mode, § 1.13(115), 116, § 1.14(117), § 1.15(118), 119, § 1.16(121), 121, 121, 121, 138  
 modern music, § (1), § (79), § (95)  
 modulate, 143, 145  
 modulates, 142  
 modulating, 121, 122, § 1.17(122), 122, 142, 144  
 modulation, 121, 121, 121, 121, 122, 122, 122, § 1.25(137), 137, 137, 137, § 1.26(139), 139, § 1.27(140), 140, 141, 142, 142, § 1.28(142), 142, 143  
 modulations, 121, 140, 141  
 modulatory, 121  
 modulatory progressions, 152  
 monophonic music, 99  
 monophonically, 101  
 motive, 6  
 music, § (1), § (3), § (15), § (19), § (29), § (33), § (47), § (51), § (75), § (79), § (95), § (97)  
 music appreciation, § (1)  
 music theory, § (1), § (3), § (19), § (29), § (47), § (75), § (79), § (95), § (97)  
 musical analysis, § (59)  
 musical form, § (1), § (33)  
 musical identity, 157, 159, 159
- N** natural, § 1.13(115)
- O** Octave equivalence, 115  
 one-way progression, 52, 52



- orchestra, § (1)
- Orchestration, 15, § 1.33(150)
- organum, 100
- ostinato, ??
  
- P** parallel, 121, § 1.26(139)
- parallel organum, 100
- passacaglia, § 1.10(111), § 1.11(112)
- phrase, 6, 6, § 1.7(108)
- picardy, § 1.31(148)
- Picardy third, 147
- polyphony, 100, 102
- progression, § 1.3(101), § 1.4(104)
  
- R** recap, § 1.29(144)
- recapitulation, 192, 194, 194
- recapitulation., 192
- recurrence, 8
- Register, 15
- registers, 9
- reharmonization, 149, 150, 150
- reharmonize, § 1.32(149)
- reharmonizing, 149
- relative, § 1.25(137)
- repetition, 4, § (15), 75
- resolution, § 1.24(134), § 1.29(144)
- return, § 1.29(144)
- Rhetorical reinforcement, 75
- rhythm, § (1), 34, § 1.6(106)
- roaming, 109
- Rondo, 35
- round, 167, 167, 167
  
- S** scale, § 1.13(115), 116
- scales, 118
- semi-tone, 115
  
- Sonata Form, 192, 192, 192
- Speed, 15
- strong round-trip, 51, 51
- structure, § 1.28(142)
  
- T** tala, 13
- tendency tone, 86
- texture, 34, § 1.3(101), 103, 103, 103
- thematic transformation, 143, 144
- theme, § (1), § 1.3(101), § 1.4(104)
- time, § (59)
- tonal, § 1.22(130)
- tonality, § 1.12(114), 114
- tonic, § 1.9(110), 110, 110, 110, 110, 110, 110, 110, 111, 111, 111, 111, 111, 111, 116, § 1.14(117), § 1.16(121), 121, 121, 121, § 1.18(123), 124, § 1.19(125), § 1.20(127), 138, § 1.29(144), 144, 144, 144, § 1.30(146), 146, § 1.31(148), 192
- tonic cadence, 110, 117, 127
- tonic cadences, 110
- transposition, 138, 168
- travel, § 1.27(140)
- tremolo, 63
  
- V** variation, § 1.3(101)
- variations, § 1.4(104)
- voice-leading, § 1.3(101), 103, 103
- voice-led, 103
- voicing, § 1.3(101), 102, 102, 102
  
- W** weak round-trip, 51, 52, 52
- whole step, 115
  
- —, 180
- “ “Picardy third.”, 147

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Module: "Modes and Scales"  
 By: Anthony Brandt  
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 Pages: 115-117  
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Module: "Hearing the Mode"  
 By: Anthony Brandt  
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 Pages: 117-118  
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Module: "Listening Gallery: Hearing the Mode"  
 By: Anthony Brandt  
 URL: <http://cnx.org/content/m35163/1.3/>  
 Pages: 118-120  
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Module: "Tonic, Mode and Key"  
 By: Anthony Brandt  
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 Pages: 121-122  
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Module: "Listening Gallery: Tonic, Mode and Key"  
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 Pages: 122-123  
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Module: "Listening Gallery: Music Within a Key"  
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Pages: 127-129

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Pages: 129-130

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Pages: 130-132

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Pages: 132-134

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Pages: 134-137

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Pages: 137-138

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Pages: 140-142

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 By: Anthony Brandt  
 URL: <http://cnx.org/content/m35108/1.1/>  
 Pages: 142-144  
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Module: "The Return to the Tonic"  
 By: Anthony Brandt  
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 Pages: 144-146  
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Module: "Final Closure"  
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 URL: <http://cnx.org/content/m35101/1.2/>  
 Pages: 146-148  
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Module: "Listening Gallery: Final Closure"  
 By: Anthony Brandt  
 URL: <http://cnx.org/content/m35160/1.2/>  
 Pages: 148-149  
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Module: "Reharmonizing a Melody"  
 By: Anthony Brandt  
 URL: <http://cnx.org/content/m35130/1.1/>  
 Pages: 149-150  
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Module: "Listening Gallery: Reharmonizing a Melody"  
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 Pages: 150-151  
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 Pages: 151-152  
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Module: "Part II: The Language of Transformation"  
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 Pages: 157-158  
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Module: "Musical Identity"

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Pages: 158-167

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Pages: 167-168

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Pages: 168-178

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Module: "Building on Identity through Fragmentary Repetition"

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Pages: 179-185

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Module: "Listening Gallery: Building on Identity"

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Pages: 186-190

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Module: "Speaking the Language of Transformation"

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Pages: 190-191

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Module: "How Identity Shapes Form"

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Pages: 191-196

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## Sound Reasoning

“Sound Reasoning” is a web-based, introductory music appreciation course. It offers a new approach to music appreciation for adults, focusing on style-independent concepts. While the course concentrates primarily on Western classical and modern music, the concepts that are introduced apply to music of any style or era. The goal of “Sound Reasoning” is to equip you with questions that you may ask of any piece of music, thereby creating a richer and more comprehensive understanding of music both familiar and unfamiliar. Here are some additional features of the course. 1) “Sound Reasoning” is completely listening based. No ability to read music is required. 2) The course assumes little or no musical background. A minimum of terminology is invoked. 3) Musical examples are interpolated directly into the text. 4) The course is interactive. A “listening gallery” with exercises follows each module, so that you may practice and refine your listening skills. 5) The modules may be studied in sequence or individually. 6) You may easily print a .pdf of any module.. “Sound Reasoning” is designed as both a stand-alone, self-paced course as well as a supplement to existing university classes. Thanks to Connexions, “Sound Reasoning” is available free of charge twenty-four hours a day in a cross-platform format. “Sound Reasoning” was created thanks to an Access to Artistic Excellence Grant from the National Endowment for the Arts and an Innovation Grant from Rice’s Computer and Information Technology Institute. The author wishes to thank Richard Baraniuk, the founder of Connexions; Geneva Henry, Joey King, Katie Cervenka and Elvena Mayo of the Connexions staff; and Jan Odegard and Moshe Vardi of CITI. He wishes to extend his great gratitude to the Connexions technical team with whom he collaborated: Brent Hendricks, Scott di Pasquale, Charlet Reedstrom and Max Starkenburg. He would especially like to thank Elizabeth Gregory and Brian Nelson, who were his primary technical assistants and provided invaluable support. The author welcomes your comments about all aspects of the course, from its contents to its ease-of-use. Please send any correspondence to Associate Professor Anthony Brandt at [abrandt@rice.edu](mailto:abrandt@rice.edu). You must have the latest version of Macromedia’s free Flash plugin to play the musical examples. The course works best using Internet Explorer 6 on Microsoft Windows, or Mozilla on any platform.

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