

Michael's Sound Reasoning

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C O N N E X I O N S

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Chapter 1

Sound Reasoning: A New Way to Listen¹

IMPORTANT: You must have the latest version of Macromedia's free Flash plugin² to play the musical examples. The course works best using Internet Explorer 6³ on Microsoft Windows, Apple's Safari⁴ on Macintosh OS X, or Mozilla⁵ on any platform. If you experience difficulties, please contact our technical support⁶.

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

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

²http://www.macromedia.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash&application/x-shockwave-flash

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

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

⁵<http://www.mozilla.org>

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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.

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.

Chapter 2

How Music Makes Sense¹

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.

¹This content is available online at <<http://cnx.org/content/m12953/1.22/>>.

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 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.

2.1 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 2.1

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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.

2.2 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 2.2

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 2.3

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 2.4

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 2.5

Here is the phrase by itself:

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Here is the phrase with its repetition:

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http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Mozart_2.mp3

Notice that, in the approximately the same amount of time that Beethoven (Example 2.3) is able to repeat his motive eleven times and Wagner (Example 2.4) six, Mozart (Example 2.5) is only able to repeat his longer **phrase** twice.

Example 2.6

Here is a similar example from Igor Stravinsky's ballet *Pétrouchka*. Similar to the Mozart (Example 2.5), notice that the phrase is repeated in a slightly new form.

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Example 2.7

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 2.8

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 2.9

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.

2.3 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 2.10

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" (Chapter 12) 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 2.10) has internal repetition of short patterns and longer phrases, and also eventually recurs in its entirety.

2.4 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 2.11

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 a 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 2.12

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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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 2.13

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

Out of the eight times the rhythmic pattern is played, it only occurs the same way twice. As in the Bach (Example 2.12), **varied repetition** helps to make the music both intelligible and dynamic.

Example 2.14

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

In the Chopin (Example 2.13), 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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http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Stravinsky_Akahito_4.mp3

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

In Bach (Example 2.12) and Chopin (Example 2.13) examples, the basic pattern is treated **dynamically**: Almost every reappearance is new in some way. In the Stravinsky (Example 2.14) 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 2.15

In his work *Piano Phase*, Steve Reich takes Stravinsky's procedure (Example 2.14) 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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http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Reich_PianoPhase_1.mp3

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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http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Reich_PianoPhase_2.mp3

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

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http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Reich_PianoPhase_3.mp3

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

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http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Reich_PianoPhase_4.mp3

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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http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Reich_PianoPhase_5.mp3

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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http://cnx.org/content/m12953/latest/http://music.cnx.rice.edu/Brandt/sense/Reich_PianoPhase_6.mp3

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 2.12), Chopin (Example 2.13), Stravinsky (Example 2.14) and Reich (Example 2.15) 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**.

2.5 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.

2.6 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.

Chapter 3

Listening Gallery: How Music Makes Sense¹

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 3.1: 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 3.2: Contour

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

Definition 3.3: 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 3.4: Dynamics

The loudness of the music

Definition 3.5: Fragmentation

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

Definition 3.6: Orchestration

The instruments that are playing the pattern.

Definition 3.7: 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 3.8: 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 3.1

Listen to Bach's *Invention no. 14 in B-flat Major*.

(*Solution on p. 18.*)

¹This content is available online at <<http://cnx.org/content/m12954/1.7/>>.

This is an unsupported media type. To view, please see
http://cnx.org/content/m12954/latest/http://music.cnx.rice.edu/Brandt/sense/Bach_Invention14.mp3

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 3.2

(Solution on p. 18.)

From the following list, what **most** contributes to varying the repetition in Chopin's *Prelude No. 23 in F-Major*?

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http://cnx.org/content/m12954/latest/http://music.cnx.rice.edu/Brandt/sense/Chopin_Prelude23.mp3

(select one)

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

Exercise 3.3

(Solution on p. 18.)

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?

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http://cnx.org/content/m12954/latest/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 3.4

(Solution on p. 18.)

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 3.5**(Solution on p. 18.)**

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.

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http://cnx.org/content/m12954/latest/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 3.6**(Solution on p. 18.)**

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.

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http://cnx.org/content/m12954/latest/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.

Solutions to Exercises in Chapter 3

Solution to Exercise 3.1 (p. 15)

The pattern always occurs at the same speed. Otherwise, Bach uses all of the other means of varying the repetition: The melody is played high and low. It is turned right side up and upside down. It is sometimes in one hand alone, sometimes in both together. It is fragmented, creating passages of greater momentum.

Solution to Exercise 3.2 (p. 16)

Register. The pattern constantly shifts register, getting higher and higher until finally sinking at the ending.

Solution to Exercise 3.3 (p. 16)

0. It is never repeated the same way twice.

Solution to Exercise 3.4 (p. 16)

The melody is always played with the same contour and at the same speed. Holst uses all of the other means to create variety: The accompaniment to the melody changes from a gentle pulse to a more passionate underpinning. The dynamics get gradually louder, then softer. The orchestration changes with almost every appearance of the melody: It begins in the violin, then it is played by the oboe, flute and glockenspiel. Register is also used to vary the melody: The glockenspiel plays it very high; later in the excerpt, the lower strings take over the melody.

Solution to Exercise 3.5 (p. 17)

All of the above! Ives uses speed, register and dynamics to vary how the chord is played. In the middle section of the song, for instance, the chords become quite spaced apart (speed). At the opening, the chords are low and loud; when the voice enters, they get higher and softer.

Solution to Exercise 3.6 (p. 17)

All of the above! Thanks to all of these means, Ligeti is able to create a very vibrant and dramatic piece using only one note!

Chapter 4

Musical Emphasis¹

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.

4.1 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 4.1

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

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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc1/bach_chorale_daswort.mp3

Example 4.2

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

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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc1/Schoenberg_raub.mp3

¹This content is available online at <<http://cnx.org/content/m13861/1.7/>>.

Example 4.3

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc1/Chopin_etudeA.mp3

Example 4.4

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

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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc1/stravinsky_riteofspring.mp3

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 4.5

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

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Example 4.6

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc1/carter_eightetudes.mp3

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.

4.2 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 4.7

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 4.8

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc1/penderecki_threnody.mp3

Example 4.9

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc1/tchaikovsky_sym2.mp3

Example 4.10

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 4.11

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc1/schnittke_grosso.mp3

4.3 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 4.12

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

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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc1/beethoven_violin_1.mp3

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

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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc1/beethoven_violin_2.mp3

Example 4.13

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

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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc1/ligeti_desordre_1.mp3

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

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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc1/ligeti_desordre_2.mp3

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

4.4 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 4.14

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 4.15

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

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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/mozart_dongiovanni_1.mp3

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/mozart_dongiovanni_2.mp3

Example 4.16

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/poulenc_dialogue.mp3

Exercise 4.1

(Solution on p. 28.)

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 4.17

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/beethoven_sym2_2.mp3

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 4.18

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

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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/bartok_concerto_1.mp3

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/bartok_concerto_2.mp3

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.

4.5 The Reinforcement of Extremes

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

Example 4.19

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

Example 4.20

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

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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/boulez_rituel_1.mp3

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/boulez_rituel_2.mp3

4.6 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 4.21

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

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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/stravinsky_dissolution_1.mp3

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/stravinsky_dissolution_2.mp3

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

Example 4.22

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/berg_wozzeck.mp3

4.7 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 4.23

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

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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/schubert_quintetC_1.mp3

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

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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/schubert_quintetC_2.mp3

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/schubert_quintetC_3.mp3

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/schubert_quintetC_4.mp3

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 4.24

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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http://cnx.org/content/m13861/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/feldman_whypatterns.mp3

4.8 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.

Solutions to Exercises in Chapter 4

Solution to Exercise 4.1 (p. 23)

4.1

No musical training or theory is required to hear that the note is strongly emphasized. Just by ear, it is possible to analyze how the rhetorical reinforcement was created.

- It is the **longest** note so far.
- It is the **highest** note so far.
- It is the **loudest** note so far.
- The timpani and brass enter.
- As the note is held, there is a dramatic change in texture from full orchestra to the violins alone.

By aligning emphases of duration, register, dynamics and orchestration, Beethoven has used a **compounding of emphases** to stress the arrival pitch. The pitch's importance is impossible to miss, because Beethoven has put so much musical muscle behind it.

Chapter 5

Listening Gallery: Musical Emphasis¹

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

Exercise 5.1

(Solution on p. 33.)

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

This is an unsupported media type. To view, please see
http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/graham_astree.mp3

(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 5.2

(Solution on p. 33.)

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

This is an unsupported media type. To view, please see
http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/ives_rutledge.mp3

"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 5.3

(Solution on p. 33.)

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

¹This content is available online at <<http://cnx.org/content/m13862/1.4/>>.

This is an unsupported media type. To view, please see
http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/ives_rutledge.mp3

“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 5.4

(Solution on p. 33.)

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

This is an unsupported media type. To view, please see
http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/harbison_simple.mp3

(select one)

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

Exercise 5.5

(Solution on p. 33.)

In Exercise 5.4, how is the climax created?

This is an unsupported media type. To view, please see
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 5.6

(Solution on p. 33.)

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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http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/mahler_sym4_1.mp3

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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http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/mahler_sym4_2.mp3

(select one)

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

Exercise 5.7

(Solution on p. 33.)

In Exercise 5.6, how is this return 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 5.8

(Solution on p. 33.)

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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http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/bartok_concertorch_1.mp3

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

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http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/bartok_concertorch_2.mp3

(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 5.9

(Solution on p. 33.)

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

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

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http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/stravinsky_orpheus_2.mp3

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http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/stravinsky_orpheus_3.mp3

This is an unsupported media type. To view, please see
http://cnx.org/content/m13862/latest/http://music.cnx.rice.edu/Brandt/emphasis/disc2/stravinsky_orpheus_4.mp3

(select one)

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

Exercise 5.10

(Solution on p. 33.)

In the most emphasized sound clip from Exercise 5.9, what is the principle means of emphasis?

(select one)

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

Solutions to Exercises in Chapter 5

Solution to Exercise 5.1 (p. 29)

5.1

The first answer and the last two answers are accurate; the second is not. One other feature intensifies the second line. In the first line of text, some words occur only once and others—“am laid” and “no trouble” are repeated as the text gradually unfolds. Then the entire line of text repeats. In the second line (“Remember me, but forget my fate”), the repetition is **compressed**: Two **full** statement of the entire line occur in the same time it took to sing the first line once, making the singer’s plea even more poignant.

Solution to Exercise 5.2 (p. 29)

The first, second, and last are accurate; the third and fourth are not.

Solution to Exercise 5.3 (p. 29)

All of the above are true.

Solution to Exercise 5.4 (p. 30)

“Wakes me.”

Solution to Exercise 5.5 (p. 30)

All of the above are true.

Solution to Exercise 5.6 (p. 30)

5.1

Stronger rhetorical reinforcement places a greater emphasis on the return of the **contrasting** section.

Solution to Exercise 5.7 (p. 31)

5.1

Stronger rhetorical reinforcement places a greater emphasis on the return of the **contrasting** section, due to the first, the second and the fourth answer. This is an example of how different degrees of rhetorical reinforcement can make a return more obvious or more indirect.

Solution to Exercise 5.8 (p. 31)

All of the above are true, making the contrasting theme’s return very emphatic.

Solution to Exercise 5.9 (p. 31)

Sound clip A.

Solution to Exercise 5.10 (p. 32)

5.1

Sound clip A’s primary means of emphasis is **duration**: The harp and string texture endures the longest.

Chapter 6

Musical Form¹

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

6.1 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.

¹This content is available online at <<http://cnx.org/content/m11629/1.13/>>.

6.2

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.

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 travels 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 6.1

(Solution on p. 38.)

What is the form?

This is an unsupported media type. To view, please see
http://cnx.org/content/m11629/latest/http://music.cnx.rice.edu/Brandt/musical_form/Schumann__Piano_Quartet_in_flat_Major_I.mp3

(select one)

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

Exercise 6.2

(Solution on p. 38.)

What is the form?

This is an unsupported media type. To view, please see
http://cnx.org/content/m11629/latest/http://music.cnx.rice.edu/Brandt/musical_form/Bach__Prelude_in_G_major_W

(select one)

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

Exercise 6.3

(Solution on p. 38.)

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

This is an unsupported media type. To view, please see
http://cnx.org/content/m11629/latest/http://music.cnx.rice.edu/Brandt/musical_form/Boulez__Notations_4th_Movement

(select one)

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

6.3 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 6.1

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.

This is an unsupported media type. To view, please see
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.

6.4 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.

Solutions to Exercises in Chapter 6

Solution to Exercise 6.1 (p. 36)

Solution to Exercise 6.2 (p. 36)

Solution to Exercise 6.3 (p. 36)

Chapter 7

Listening Gallery: Musical Form¹

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 7.1

(Solution on p. 41.)

This is an unsupported media type. To view, please see
http://cnx.org/content/m11630/latest/http://music.cnx.rice.edu/Brandt/musical_form/Schubert__An_den_Mond.mp3

Exercise 7.2

(Solution on p. 41.)

This is an unsupported media type. To view, please see
http://cnx.org/content/m11630/latest/http://music.cnx.rice.edu/Brandt/musical_form/Chopin__Prelude_in_C_major.r

Exercise 7.3

(Solution on p. 41.)

This is an unsupported media type. To view, please see
http://cnx.org/content/m11630/latest/http://music.cnx.rice.edu/Brandt/musical_form/Carter__Moto_Perpetuo.mp3

Exercise 7.4

(Solution on p. 41.)

This is an unsupported media type. To view, please see
http://cnx.org/content/m11630/latest/http://music.cnx.rice.edu/Brandt/musical_form/Powell__Thigamagig.mp3

¹This content is available online at <<http://cnx.org/content/m11630/1.7/>>.

Exercise 7.5*(Solution on p. 41.)*

This is an unsupported media type. To view, please see
http://cnx.org/content/m11630/latest/http://music.cnx.rice.edu/Brandt/musical_form/Schumann__Piano_Quartet_in_

Solutions to Exercises in Chapter 7

Solution to Exercise 7.1 (p. 39)

This is an A-B-A form. The A-section is in the minor mode. It opens with a brief introduction, establishing the piano accompaniment's undulating rhythm; the voice then enters. The A-section concludes with a long stopping point—the first interruption of the steady rhythm.

The B-section is in the contrasting Major mode. It introduces a new melody and accompanying rhythm. Just as the A-section, the B-section ends with a long stopping point.

The A-section then returns, beginning immediately at the entrance of the voice. The original vocal line is reprised with minor changes.

Solution to Exercise 7.2 (p. 39)

This is an A-form: The rhythm and texture remain constant throughout the composition.

Solution to Exercise 7.3 (p. 39)

This is an A-form: As in the Chopin Prelude, the rhythm and texture remain constant throughout the composition. (In this case, the texture is the oscillation between two timpani notes.) The dynamic (loud/soft) is varied, but these fluctuations are too brief to create a strong contrast.

Solution to Exercise 7.4 (p. 39)

There are two plausible ways of reading the form of this jazz composition. The first is an A-B-A: The A-section is the song's main material, presented by all three instruments as an ensemble. The B-section consists of improvisatory solos. Then the A-section returns in its entirety.

A-B-C-D-A is another possible reading of the form. This reading takes into account that there are three improvisations: first, the piano solo; second, the trumpet solo, accompanied by the piano; third, the drum solo, periodically punctuated by the other two instruments.

Throughout the solos, the rhythmic drive is steady. The link between solos are carefully blurred: The piano keeps playing when the trumpet enters; both trumpet and piano play repeatedly during the drum solo. As a result, a large A-B-A, in which the B-section is divided into three sub-sections, would be my preferred reading.

Solution to Exercise 7.5 (p. 40)

The sections in this movement are strongly contrasting and well-differentiated from each other. The A-section is energetic and bold, with repeated upward scalar figures traded among the instruments. The B-section is lyrical and softer. The C-section is aggressive and turbulent, ratcheting up the tension to its highest peak.

The A-section is played three times. The final time, it is extended to create a closing section or coda.

Chapter 8

Expository and Developmental¹

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 8.1

This is an unsupported media type. To view, please see
http://cnx.org/content/m13842/latest/http://music.cnx.rice.edu/Brandt/expository/mozart_piano.mp3

Example 8.2

This is an unsupported media type. To view, please see
http://cnx.org/content/m13842/latest/http://music.cnx.rice.edu/Brandt/expository/saintsaens_organ.mp3

Example 8.3

This is an unsupported media type. To view, please see
http://cnx.org/content/m13842/latest/http://music.cnx.rice.edu/Brandt/expository/stravinsky_firebird.mp3

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**.

¹This content is available online at <<http://cnx.org/content/m13842/1.7/>>.

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 8.1*(Solution on p. 51.)*

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

This is an unsupported media type. To view, please see
http://cnx.org/content/m13842/latest/http://music.cnx.rice.edu/Brandt/expository/beethoven_violin.mp3

Which comes first?

(select one)

- a) Expository
- b) Developmental

Exercise 8.2*(Solution on p. 51.)*

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

This is an unsupported media type. To view, please see
http://cnx.org/content/m13842/latest/http://music.cnx.rice.edu/Brandt/expository/schoenberg_fantasy.mp3

Which comes first?

(select one)

- a) Expository
- b) Developmental

8.1 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 8.4

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 8.5

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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http://cnx.org/content/m13842/latest/http://music.cnx.rice.edu/Brandt/expository/bartok_quartet2_1.mp3

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 8.6

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 8.7

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 8.8

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 8.9

In the brief Intermède from Olivier Messaien'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 8.10

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 8.11

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 8.12

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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http://cnx.org/content/m13842/latest/http://music.cnx.rice.edu/Brandt/expository/dukas_sorcerer_3.mp3

Example 8.13

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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http://cnx.org/content/m13842/latest/http://music.cnx.rice.edu/Brandt/expository/berg_lyric_4.mp3

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.

8.2 The Balance Between Expository and Developmental

Example 8.14

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 8.15

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 8.16

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 8.17

The balance between expository and developmental helps to create strong contrasts in Beethoven's Bagatelle, opus 126, no. 4. [See also: Musical Form (Chapter 6)] 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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http://cnx.org/content/m13842/latest/http://music.cnx.rice.edu/Brandt/expository/beethoven_bagatelle_2.mp3

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

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Example 8.18

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.

Solutions to Exercises in Chapter 8

Solution to Exercise 8.1 (p. 44)

The first portion of the excerpt is highly active and fast changing. This leads to an arrival point that is much more relaxed and stable. Therefore, a developmental section leads to an expository one.

Solution to Exercise 8.2 (p. 44)

Schoenberg's musical language is far removed from Beethoven's. However, the same distinction between expository and developmental exists. Just as in Beethoven, a mercurial, forward moving section leads to a calmer, more grounded one: A developmental section is followed by an expository one.

Chapter 9

Listening Gallery: Expository and Developmental¹

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

Exercise 9.1

(Solution on p. 56.)

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

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http://cnx.org/content/m13843/latest/http://music.cnx.rice.edu/Brandt/expository/rachmaninoff_piano3_2.mp3

(select one)

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

Exercise 9.2

(Solution on p. 56.)

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/>

¹This content is available online at <<http://cnx.org/content/m13843/1.5/>>.

(select one)

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

Exercise 9.3**(Solution on p. 56.)**

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

This is an unsupported media type. To view, please see
http://cnx.org/content/m13843/latest/http://music.cnx.rice.edu/Brandt/expository/anderson_legato.mp3

(select one)

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

Exercise 9.4**(Solution on p. 56.)**

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

This is an unsupported media type. To view, please see
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 9.5**(Solution on p. 56.)**

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

(select one)

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

Exercise 9.6**(Solution on p. 56.)**

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/chopin_prelude18.mp3

(select one)

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

Exercise 9.7

(Solution on p. 56.)

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/messiaen_liturgie.mp3

(select one)

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

Solutions to Exercises in Chapter 9

Solution to Exercise 9.1 (p. 53)

The first excerpt is expository. The solo piano presents a lyrical melody, supported by the orchestra. The second excerpt is developmental: It is fast changing, with an intricate dialogue between the piano and the orchestra.

Solution to Exercise 9.2 (p. 53)

The first excerpt is expository: It is repetitive, presenting successive statements of the theme. The second excerpt presents overlapping entrances of the theme in rapidly changing instruments and registers. It is developmental.

Solution to Exercise 9.3 (p. 54)

Exposition predominates: The entire piece is characterized by uninterrupted phrases, repetitions of large sections and consistency of texture.

Solution to Exercise 9.4 (p. 54)

Exposition predominates. A short developmental section separates the opening thematic statement and its closing restatement.

Solution to Exercise 9.5 (p. 54)

Development predominates. The etude traverses the entire range of the piano, is fleet, fragmentary and non-repetitive.

Solution to Exercise 9.6 (p. 54)

The Prelude barely stands still. Therefore, development predominates. The music's virtuosic character is created by its thorough, rapid progress and lack of extensive repetition.

Solution to Exercise 9.7 (p. 55)

Exposition predominates. The music is strongly grounded. The violin and piano play a repetitive, rhythmically continuous accompaniment that "shimmers" as the clarinet's unfurls a long, constantly evolving tune. The Liturgie certainly has developmental attributes: The improvisatory nature of the clarinet's line keeps the music from sounding redundant or predictable. However, the underlying stability of the accompaniment and the persistent prominence of the clarinet make this primarily an expository statement.

Chapter 10

Overall Destiny¹

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 (Chapter 6), 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 10.1

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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http://cnx.org/content/m11607/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/Copland__At_the_River.mp3

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,

¹This content is available online at <<http://cnx.org/content/m11607/1.22/>>.

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**.

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

Example 10.2

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 10.3

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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 10.4

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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10.1 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 10.5

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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10.2 Local Details and Overall Destiny

Example 10.6

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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http://cnx.org/content/m11607/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/ives_6b.mp3

Example 10.7

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.

10.3 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.

Chapter 11

Listening Gallery: Overall Destiny¹

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 11.1

(Solution on p. 64.)

This is an unsupported media type. To view, please see
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 11.2

(Solution on p. 64.)

This is an unsupported media type. To view, please see
http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/Messiaen_-_Intermede_Quartet.mp3

¹This content is available online at <<http://cnx.org/content/m11631/1.9/>>.

How would you describe the overall destiny?

(select one)

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

Exercise 11.3

(Solution on p. 64.)

This is an unsupported media type. To view, please see
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 11.4

(Solution on p. 64.)

This is an unsupported media type. To view, please see
http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/Chopin__Ballade_no_2_in_F

How would you describe the overall destiny?

(select one)

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

Exercise 11.5

(Solution on p. 64.)

This is an unsupported media type. To view, please see
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 11.6

(Solution on p. 64.)

How would you describe the overall destiny?

This is an unsupported media type. To view, please see
http://cnx.org/content/m11631/latest/http://music.cnx.rice.edu/Brandt/overall_destiny/Hindemith__Argwohn_Josephs

(select one)

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

Exercise 11.7

(Solution on p. 64.)

This is an unsupported media type. To view, please see
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 11.8

(Solution on p. 64.)

This is an unsupported media type. To view, please see
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 11.9

(Solution on p. 64.)

This is an unsupported media type. To view, please see
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 potently 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.

Solutions to Exercises in Chapter 11

Solution to Exercise 11.1 (p. 61)

Solution to Exercise 11.2 (p. 61)

Solution to Exercise 11.3 (p. 62)

Solution to Exercise 11.4 (p. 62)

Solution to Exercise 11.5 (p. 62)

Solution to Exercise 11.6 (p. 62)

Hindemith's song "Argwohn Josephs" from *Das Marienleben* ends with an unequivocal return to the opening. It is a strong roundtrip.

Solution to Exercise 11.7 (p. 63)

Solution to Exercise 11.8 (p. 63)

Solution to Exercise 11.9 (p. 63)

Chapter 12

Time's Effect on the Material¹

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

12.1 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.

¹This content is available online at <<http://cnx.org/content/m11434/1.38/>>.

Example 12.1

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

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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/01_Bach_Brandenburg_No_5_op

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

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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/02_Bach_Brandenburg_No_5_har

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/03_Bach_Brandenburg_No_5_rep

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 12.2

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/04_Stravinsky_Elegy_opening.mp3

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

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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/05_Stravinsky_Elegy_continuation

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

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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/06_Stravinsky_Elegy_close.mp3

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 12.3

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/36_Beethoven_Symphony_9_I_ex

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/37_Beethoven_Symphony_9_I_re

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 12.4

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/42_Feldman_Coptic_Light_opening

Nearly twenty minutes later, the opening is revisited.

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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/43_Feldman_Coptic_Light_return

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.

12.2 Measuring Time's Effect

12.2.1 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 12.5

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/12_Beethoven_Bagatelle_opus_126.mp3

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/13_Stravinsky_Rite_of_Spring.mp3

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 12.6

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/07_Schubert_Quintet_for_Strings_section.mp3

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/08_Schubert_Quintet_for_Strings_section.mp3

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/09_Schubert_Quintet_for_Strings_section.mp3

Example 12.7

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

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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/10_Bartok_Music_for_Strings_op

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/11_Bartok_Music_for_Strings_ret

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 12.1), 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.

12.2.2 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 12.1

(Solution on p. 76.)

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 to be confident of your answers.

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(select all that apply)

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

Exercise 12.2

(Solution on p. 76.)

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/17_Boulez_Rituel.mp3

(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 12.8

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/18_Brahms_Intermezzo_In_A-Major_opening.mp3

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

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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/19_Brahms_Intermezzo_In_A-Major_reprise.mp3

Example 12.9

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/Poulenc__Flute_Sonata_opening.m

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/Poulenc__Flute_Sonata_reprise.m

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

Example 12.10

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/24_Wagner_Siegfrieds_Death_and

This is an unsupported media type. To view, please see
http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/25_Wagner_Siegfrieds_Death_and

12.2.3 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 12.11

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

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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/schubert_great_1.mp3

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

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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/schubert_great_2.mp3

Example 12.12

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 12.13

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/beethoven_sym5_1.mp3

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/beethoven_sym5_2.mp3

Example 12.14

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/schoenberg_nacht_2.mp3

Exercise 12.3

(Solution on p. 76.)

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/lernerloewe_camelot_1.mp3

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.

12.3 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 12.15

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/31_Beethoven_Bagatelle_opus_126

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

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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/32_Beethoven_Bagatelle_opus126

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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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/33_Beethoven_Bagatelle_opus_126

Example 12.16

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

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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/34_Schoenberg_opus_33a_opening.m

This is an unsupported media type. To view, please see
http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/35_Schoenberg_opus_33a_recap.m

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.

12.4 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.

Solutions to Exercises in Chapter 12

Solution to Exercise 12.1 (p. 70)

All are true!

Solution to Exercise 12.2 (p. 70)

Again, all are true.

Solution to Exercise 12.3 (p. 73)

12.1

Here is Arthur's refrain:

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http://cnx.org/content/m11434/latest/http://music.cnx.rice.edu/Brandt/times_effect/lernerloewe_camelot_2.mp3

This time, Arthur speaks rather than sings. The melody is played in the background. The music is slower, with a less insistent beat. Time has weakened the material.

Chapter 13

Listening Gallery: Time's Effect¹

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

Exercise 13.1

(Solution on p. 80.)

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

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http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/Bach__Hochster.mp3

(select one)

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

Exercise 13.2

(Solution on p. 80.)

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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http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/38_Earl_Kim_Now_and_Then_I

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http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/38_Earl_Kim_Now_and_Then_II

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http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/38_Earl_Kim_Now_and_Then_III

¹This content is available online at <<http://cnx.org/content/m11625/1.12/>>.

(select one)

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

Exercise 13.3

(Solution on p. 80.)

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.

This is an unsupported media type. To view, please see
http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/Beethoven__Piano_Sonata_C_mi

Exercise 13.4

(Solution on p. 80.)

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

This is an unsupported media type. To view, please see
http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/Mozart__Piano_Sonata_C_minor

Exercise 13.5

(Solution on p. 80.)

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

This is an unsupported media type. To view, please see
http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/Rochberg__String_Quartet_no_6

Exercise 13.6

(Solution on p. 81.)

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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http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/schubert_quartet_1.mp3

This is an unsupported media type. To view, please see
http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/schubert_quartet_2.mp3

(select one)

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

Exercise 13.7

(Solution on p. 81.)

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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http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/shostakovich_quartet.mp3

(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.

Solutions to Exercises in Chapter 13

Solution to Exercise 13.1 (p. 77)

The opening section is reprised exactly and in its entirety. Time does not have an effect.

Solution to Exercise 13.2 (p. 77)

13.1

The second movement song, *Thither*, is replayed identically. Time does not have an effect.

Solution to Exercise 13.3 (p. 78)

The first refrain of the A-section is literal. The only change is that, this time, the melody is played only once and then proceeds directly into the C-section, rendering the connection more impulsive.

The C-section is characterized by a new, faster underlying rhythm. When the A-section once again returns, the accompaniment does **not** revert to its earlier speed as expected. Instead, the C-section's faster rhythm **continues**, blurring the distinction between the two sections. Instead of reverting to the original A-section, Beethoven's ending is gently **progressive**.

Solution to Exercise 13.4 (p. 78)

The first refrain of the A-section is literal and complete. The second begins identically, but then a haunting transformation takes place: The theme, which had been continuous, is broken up into fragments, separated by silences.

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http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/Mozart__Piano_Sonata_C_minor

Time has had an effect! Where do the silences come from? Compare the starting and stopping nature of the A'-section with this passage from earlier in the work:

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http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/Mozart__Piano_Sonata_C_minor

Mozart never returns to the original A-section: The fragmented version is the last one we hear.

Solution to Exercise 13.5 (p. 78)

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http://cnx.org/content/m11625/latest/http://music.cnx.rice.edu/Brandt/times_effect/Rochberg__String_Quartet_no_6

At the first refrain, time does have an effect. The opening rhythmic patterns return only in the lower strings, juxtaposed against a lyrical melody in the first violin. As the section is prolonged, the rhythmic patterns and melodic fragments circulate among the instruments.

At the final refrain, time does not have an effect. The ending is a literal restatement of the opening passage. It is, however, cut short and ends unexpectedly in the middle of a phrase. If you chose that "time does have an effect" for this reason, then you have a valid argument.

The second half of this movement is filled with fragmentary refrains of earlier passages. These fragments are relatively equal in length; the final refrain of the A-section fits the expected proportion. So, although it is abbreviated, the final refrain is not shockingly short: The music has never offered a complete restatement; it has taught us to expect only excerpts. In all other respects, the final refrain's identity is secure. That is

why, in my opinion, the listener will consider that time has not had an effect—or has had a negligible one—at the movement's close. Nevertheless, the movement ends suspensively, preparing the way for the quartet to continue.

Solution to Exercise 13.6 (p. 78)

13.1

Yes, time has an effect. The refrain has a very different character than the opening: It is more gentle and lyrical. Plucked sounds take the place of the aggressive chords. The dotted rhythms of the opening are smoothed out. The melody hesitates where it didn't before and adds embellishments. All of these changes support a remarkable feature: The original version begins with a sustained G-Major triad that is replaced by a sharply accentuated g-minor chord. The refrain does the **reverse**: It is the minor that enters first, only to be replaced by the Major one, this time gracefully plucked! Even if the tonal contrast between Major and minor is unfamiliar or hard to hear, you won't miss the other transformations that support this switch.

Solution to Exercise 13.7 (p. 78)

Yes, time has an effect. In the return, the theme is mainly plucked, rather than bowed. There are sudden interjections. The rhythms are also subtly changed.

Chapter 14

Summary: A Quick Guide for Listening¹

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 (Chapter 2)]

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 unrhetorical works tend not to have a climax, because their emphases are out-of-phase from each other. [Musical Emphasis (Chapter 4)]

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 (Chapter 6)]

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 (Chapter 8)]

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 (Chapter 10)]

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

¹This content is available online at <<http://cnx.org/content/m13848/1.12/>>.

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 (Chapter 12)]

14.1 Advice for Listening

14.1.1 First Hearings

14.1.1.1 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.

14.1.1.2 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.

14.1.1.3 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.

14.1.2 Closer Study

14.1.2.1 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.

14.1.2.2 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.

14.1.2.3 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.

14.1.3 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.

Chapter 15

Making Music Modern¹

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

15.1 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

¹This content is available online at <<http://cnx.org/content/m13845/1.15/>>.

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.

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.

15.2 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.

15.3 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.

15.4 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.

15.5 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.

15.6 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.

15.7 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?

15.8 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.

15.9 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 15.1

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 15.2

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/schoenberg_monde.mp3

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

Example 15.3

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/carter_quartet1.mp3

This is an unsupported media type. To view, please see
http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/cage_quartet.mp3

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

Example 15.4

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/reich_phase.mp3

This is an unsupported media type. To view, please see
http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/boulez_structures.mp3

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 15.5

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/partch_vanity.mp3

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 15.6

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/davidovsky_synch9.mp3

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 15.7

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/ives_discussion.mp3

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

Example 15.8

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/harrison_quetz.mp3

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 15.9

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/carter_var.mp3

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.

15.10 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 15.10

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/barry_miami.mp3

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

Example 15.11

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/tchaikovsky_flowers.mp3

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 15.12

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/stravinsky_dance.mp3

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 15.13

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/boulez_eclat.mp3

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

15.11 Unpredictable Continuity

Exercise 15.1

(Solution on p. 103.)

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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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/bach_prelude7_1.mp3

(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 15.14

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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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/stravinsky_three_1.mp3

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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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/stravinsky_three_2.mp3

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.

15.12 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 15.15

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/bach_contapunctusIX.mp3

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 15.16

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/babbitt_postpart.mp3

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.

15.13 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 15.17

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/tchaikovsky_canes.mp3

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 15.18

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/babbitt_allset.mp3

15.14 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 15.19

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/mahler_sym1_1.mp3

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 15.20

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/mahler_sym1_2.mp3

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

Example 15.21

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/cowell_tiger.mp3

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

Example 15.22

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/kurtag_microludes.mp3

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 15.23

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/beethoven_sym5IV.mp3

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 15.24

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/boulez_derive.mp3

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

15.15 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 15.25

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/ligeti_kyrie.mp3

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.

15.16 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 15.26

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/beethoven_sym9.mp3

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 15.27

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/berio_sinfonia.mp3

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.

15.17 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 15.28

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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 15.29

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/dutilleux_ainsilanut.mp3

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.

15.18 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 15.30

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/mozart_sym40I.mp3

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 15.31

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/kim_thither.mp3

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.

15.19 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 15.32

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/tchaikovsky_1812.mp3

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 15.33

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/cage_roaratorio.mp3

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 15.34

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/crumb_blackangels.mp3

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

15.20 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 15.35

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/beethoven_bag_chodak.mp3

This is an unsupported media type. To view, please see
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 15.36

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/brown_december_blum.mp3

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

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 15.1 (Brown's December).

Brown's December

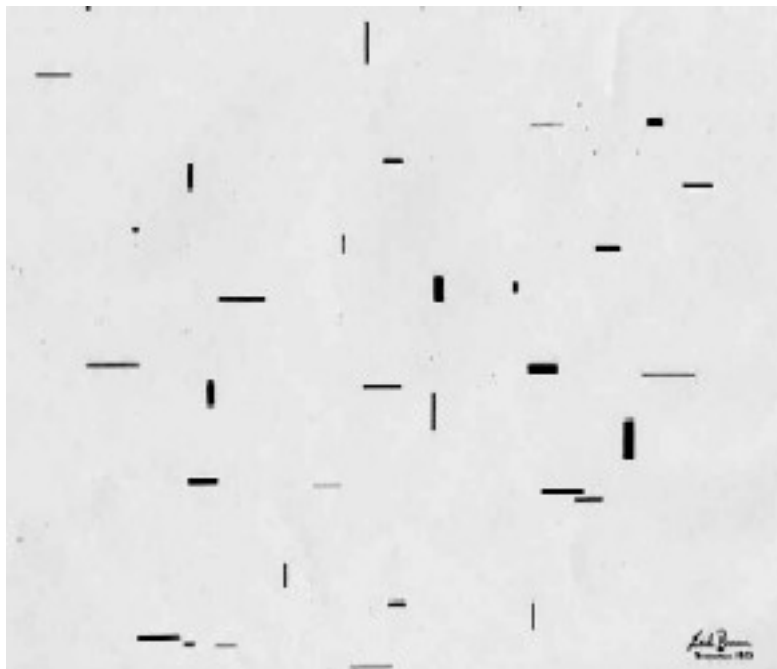


Figure 15.1

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.

15.21 Listening to Ambiguity

15.21.1 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**.

15.21.2 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.

15.21.3 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 (Chapter 6)]
- 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 (Chapter 10)]
- 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 (Chapter 12)]

15.21.4 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.

15.21.5 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.

Solutions to Exercises in Chapter 15

Solution to Exercise 15.1 (p. 92)

15.1

Now, listen to the actual continuation.

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http://cnx.org/content/m13845/latest/http://music.cnx.rice.edu/Brandt/musicmodern/bach_prelude7_2.mp3

The first few exchanges between upper and lower registers created the expectation that the lower register will continue to imitate the upper. Sure enough, the lower register answers in fast motion, confirming our prediction.

Chapter 16

Listening Gallery: Making Music Modern¹

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

Exercise 16.1

(Solution on p. 107.)

How is ambiguity created in the following excerpt?

This is an unsupported media type. To view, please see
http://cnx.org/content/m13844/latest/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 16.2

(Solution on p. 107.)

How is ambiguity created in the following excerpt?

This is an unsupported media type. To view, please see
http://cnx.org/content/m13844/latest/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

¹This content is available online at <<http://cnx.org/content/m13844/1.5/>>.

Exercise 16.3**(Solution on p. 107.)**

How is ambiguity created in the following excerpt?

This is an unsupported media type. To view, please see
http://cnx.org/content/m13844/latest/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
- e) Heightened dissonance
- f) Absence of literal repetition
- g) Weak rhetorical reinforcement

Exercise 16.4**(Solution on p. 107.)**

How is ambiguity created in the following excerpt?

This is an unsupported media type. To view, please see
http://cnx.org/content/m13844/latest/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

Solutions to Exercises in Chapter 16

Solution to Exercise 16.1 (p. 105)

All of the above contributed to the movement's ambiguity.

Solution to Exercise 16.2 (p. 105)

All of the above are true except for the absence of literal repetition: An oscillation between two notes in the low register occurs twice during the piece. However, many sonic events occur once only; and the recurrence of the oscillation is hard to foretell.

Solution to Exercise 16.3 (p. 106)

16.1

Carter writes in a personal musical language. His second etude for winds consists of a rapid passage that is played over and over by each of the four winds. However, each starts on a different note, leading to dissonant combinations; and the voices are out-of-phase, leading to weak rhetorical reinforcement.

Silence does not play a role. The flute begins alone, establishing an expository statement. Each instrumental part consists only of literal repetition—so these three choices are less accurate.

Solution to Exercise 16.4 (p. 106)

All are true.

Chapter 17

Conclusion: What is Music Trying to Express?¹

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.

¹This content is available online at <<http://cnx.org/content/m13846/1.8/>>.

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

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

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.

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Michael's 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.

- "Sound Reasoning" is completely listening based. No ability to read music is required.
- The course assumes little or no musical background. A minimum of terminology is invoked.
- Musical examples are interpolated directly into the text.
- The course is interactive. A "listening gallery" with exercises follows each module, so that you may practice and refine your listening skills.
- The modules may be studied in sequence or individually.
- 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 of Connexions, his primary advisor throughout the creation and implementation of the course. He is extremely grateful for her expertise, insight and 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. 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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