
THE MUSIC OF J.S. BACH

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INTRODUCTION



This is the Bach Book.

PART I

FORM

CHAPTER 1

PHRASES

ANALOGOUS to spoken or written language, music must be structured and organized to convey a coherent message. One of the most basic organizational units of music, to continue the (loose) grammatical analogy, is the **phrase**, which we define as a unit possessing a certain level of structural “completeness”. Each phrase must be delimited in some way, so that the listener may easily distinguish between them; this can be likened to how the comma or the period functions to delineate clauses in written language. Generally, one observes certain harmonic formulae and melodic tendencies at these musical “commas”. uh bluh **cadences**. We therefore shall start with a brief review of common cadential patterns(see Chapter ?? for a more detailed study).

1.1 CADENCES

A cadence is largely characterized by the final motion in its (implied) harmonic progression, as this terminates the phrase. Accordingly, we describe the common cadences first by the final bass motion and then by the harmonies over this bass motion. Typical cadences can be divided into two classes: one from a dominant harmony to a tonic harmony, and another from a non-dominant(predominant) harmony to a dominant harmony. The “strength” of a cadence refers to the degree of separation between adjacent phrases the cadence provides; this can be likened to the difference between a comma and semicolon or period. The strength of a cadence is related to its frequency of occurrence—weak cadences are used infrequently, moderately strong ones are used most frequently, and especially strong ones are reserved for particular points in a piece.

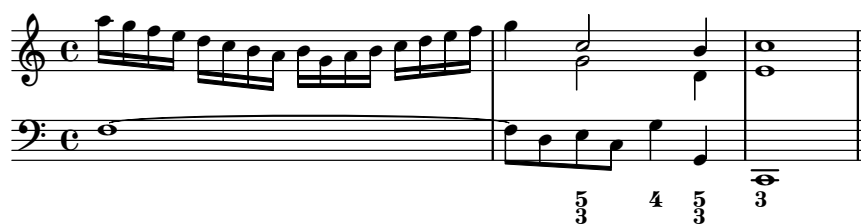
DOMINANT – TONIC

The first class of cadences, the **authentic cadences**, consist of motion from a dominant harmony to a tonic harmony. These form a typically strong group of cadences, as the motion to the final harmony either reaffirms the local key or introduces a new one. When a bass is present, the possible bass motions are(roughly in order of decreasing strength): $\hat{5} - \hat{1}$, $\hat{7} - \hat{1}$, $\hat{2} - \hat{1}$, $\hat{4} - \hat{3}$, $\hat{5} - \hat{3}$, and $\hat{2} - \hat{3}$.

The $\hat{5} - \hat{1}$ bass motion may be harmonized by giving $\frac{5}{3}$ or $\frac{7}{3}$ to $\hat{5}$ and $\frac{5}{3}$ to $\hat{1}$. This type of harmonization is referred to as a **simple cadence**. Another possible harmonization gives

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$\frac{6-5}{4-3}$ to $\hat{5}$ (with the seventh being optional as well); as two harmonies are given to a single bass note, this is referred to as a **compound cadence**. Since the harmonic rhythm is typically steady up until the final harmony (which may have an extended duration), the compound cadence usually has $\hat{5}$ articulated for twice the duration than the other bass notes. Both of these cadences are given a stronger sense of finality by having the highest voice articulate $\hat{1}$ by the end of the cadence; following proper voice-leading implies that it must also take the third or fifth of $\hat{5}$. When this occurs (which is usually at the end of a piece or section), the cadence is said to be **perfect**. The $\hat{7} - \hat{1}$ bass motion may be harmonized by giving $\frac{5}{3}$,



Excerpt 1.1: A perfect compound cadence. [BWV 939]



Excerpt 1.2: An imperfect simple cadence. By the time the suspensions resolve, the bass is no longer articulating $\hat{1}$, but the tonic harmony remains. [BWV 880a]

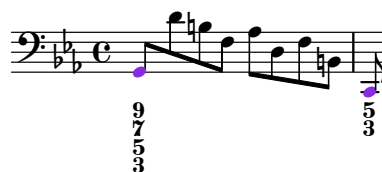
$\frac{6}{3}$ or $\frac{6}{4}$ (yielding the strongest cadence) to $\hat{7}$ and $\frac{5}{3}$ to $\hat{1}$. Almost invariably, the leading tone resolves in the expected fashion, moving up by step to $\hat{1}$. In cases where the bass appears to leap down a seventh, $\hat{7}$ is almost invariably preceded by $\hat{5}$ or $\hat{2}$ (from underneath) on a stronger beat, suggesting a $\hat{5} - \hat{1}$ or $\hat{2} - \hat{1}$ cadence instead. The $\hat{2} - \hat{1}$ bass motion yields the weakest of the cadences ending on $\hat{1}$. One gives $\frac{6}{3}$ or $\frac{6}{4}$ to $\hat{2}$ and $\frac{5}{3}$ to $\hat{1}$. Typically, this cadence is found when the bass is already engaged in a larger scalar motion down to $\hat{1}$.

The $\hat{4} - \hat{3}$ bass motion is typically harmonized by giving $\frac{6}{2}$ to $\hat{4}$ and $\frac{6}{3}$ to $\hat{3}$. This motion is the strongest of the cadences ending on $\hat{3}$, and is roughly comparable in strength to the $\hat{2} - \hat{1}$ cadence. When used, it is sometimes an example of **evasion**; this occurs when a potential $\hat{5} - \hat{1}$ cadence is forgone in favor of a $\hat{5} - \hat{4} - \hat{3}$ cadence. The $\hat{5} - \hat{3}$ bass motion must be harmonized by giving $\frac{5}{3}$ to $\hat{5}$ and $\frac{6}{3}$ to $\hat{3}$. Although this cadence places the dominant in the bass, it is weaker than the $\hat{4} - \hat{3}$ cadence, as it is impossible to have the seventh of $\hat{5}$ in an upper voice (which would strengthen the cadence) without causing both direct octaves and

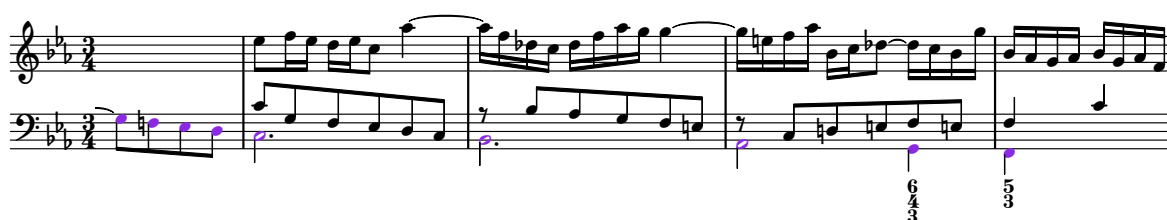
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Excerpt 1.3: A $\hat{7}-\hat{1}$ cadence. [BWV 819]



Excerpt 1.4: A $\hat{5}-\hat{1}$ cadence containing a leap by seventh from $\hat{7}$ to $\hat{1}$. [BWV 1010]



Excerpt 1.5: A descending bass line starting from $\hat{5}$ in c minor and descending by step, ending in a $\hat{2}-\hat{1}$ cadence in f minor. [BWV 813]

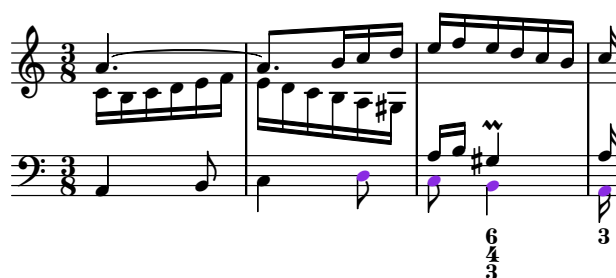
doubling of the third, an unsatisfactory result. However, the impression of a $\hat{4}-\hat{3}$ cadence can be created by having the bass step through $\hat{4}$ on a weaker beat; this is virtually always done by Bach. The $\hat{2}-\hat{3}$ bass motion yields the weakest of the authentic cadences for several reasons. One may give $\frac{6}{3}$, $\frac{6}{4}$, or $\frac{6}{3}$ to $\hat{2}$ and $\frac{6}{3}$ to $\hat{3}$. If one gives the third to $\hat{2}$, it will either must rise by step (which is not its melodic tendency) or result in a doubling of the third. Furthermore, since the sixth of $\hat{2}$ must resolve up by step and both chords share $\hat{5}$, the overall harmonic motion is parallel. Finally, neither $\hat{2}$ or $\hat{3}$ is the root of their respective harmony.

The reader may wonder why certain bass motions were omitted. After all, if four notes of the key can contribute to a dominant harmony and two to a tonic harmony then there should be 8 possible bass motions. However, the bass motions $\hat{4}-\hat{1}$ and $\hat{7}-\hat{3}$ do not obey the typical melodic tendencies of $\hat{4}$ and $\hat{7}$ to a tonic harmony. The latter bass motion does not exist as a cadence and the former is simply too uncommon to warrant discussion here.

PREDOMINANT – DOMINANT

The second class of cadences consists of motion to a dominant harmony. These are referred to as **half cadences**, as they are generally weaker and set up an expectation for a stronger authentic cadence from dominant back to tonic. When a bass is present, the two most typical bass motions are $\hat{4}-\hat{5}$ or $\hat{6}-\hat{5}$, with the former generally being more frequent.

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Excerpt 1.6: A ascending–descending bass line starting at $\hat{1}$ and “peaking” at $\hat{4}$, ending in a $\hat{2} - \hat{1}$ cadence [BWV 799]



Excerpt 1.7: A $\hat{5} - \hat{4} - \hat{3}$ cadence. The listener’s expectations are not subverted by the “evasion” as the bass restates the fugue subject. [BWV 870b]

The $\hat{4} - \hat{5}$ bass motion may be harmonized in a multitude of ways. One gives $\frac{5}{3}$, $\frac{6}{3}$, or $\frac{6}{5}$ to $\hat{4}$, the latter usually yielding the most desirable cadence. In a major key, it is sometimes permissible to sharpen $\hat{4}$ to strengthen the harmony, thereby creating the same resolution as a $\hat{7} - \hat{1}$ cadence in the dominant key. If the local key is minor, $\hat{4}$ may be sharpened only if the third is as well; if so, one may use $\frac{7}{\flat 3}$ in place of $\frac{5}{3}$.

The $\hat{6} - \hat{5}$ bass motion is typically harmonized by giving $\frac{6}{3}$ or $\frac{6}{4}$ to $\hat{6}$ and $\frac{5}{3}$ to $\hat{5}$. In a major key one typically improves the harmony by sharpening the sixth of $\hat{6}$, thereby creating the same resolution as a $\hat{2} - \hat{1}$ cadence in the dominant key. In a minor key, $\hat{6}$ is occasionally sharpened; if so, then the sixth of $\sharp\hat{6}$ may be sharpened as well.

IDENTIFYING CADENCES

A few characteristics of baroque music should be kept in mind when identifying cadences. It is commonplace for motoric rhythms to prevent the sense of any rhythmic “pause” at a cadence, as the music seamlessly transitions from one phrase to the next. This is to say that cadences in Bach’s music are often **elided**, which is a weakening of the cadence by introducing the next phrase precisely at (or before) the cadence. Typically, a phrase is dominated by one or two motifs; when an elided cadence occurs a new motif is typically introduced during the cadence to be used during the next phrase. Another possible concern arises when the bass line is complex and touches on many essential notes, or is not present at all, making identification more difficult. In the first case, the cadence can not be neatly

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Excerpt 1.8: A $\hat{5} - \hat{3}$ cadence, in which $\hat{4}$ is introduced as a passing tone. [BWV 794]



Excerpt 1.9: A $\hat{4} - \hat{\sharp 4} - \hat{5}$ cadence, followed by a $\hat{5} - \hat{4} - \hat{3}$ bass motion(not a cadence) into the next phrase. [BWV 811]

categorized as one the the previously mentioned types; however, the strongest impressions are made by the bass on the strong beats, which may be used to determine the overall impression of the cadence. Common examples of these ambiguities include a $\hat{5} - \hat{7} - \hat{1}$ bass motion where $\hat{7}$ is on a weaker beat than $\hat{5}$, or a $\hat{6} - \hat{4} - \hat{5}$ bass motion where $\hat{4}$ is on a weaker beat than $\hat{6}$. If the bass is absent, one may use the implied harmonic progression, or fit an implied bass line to determine the type and strength of a cadence. Finally, as general note, one should check that a tentative phrase does not render a following unit of music “incomplete”. Usually, this means that if a stronger cadence immediately proceeds a potential cadence, then one should consider the latter as closing off the entire phrase.



Excerpt 1.10: A $\hat{6} - \hat{5}$ cadence in a minor key. [BWV 789]



Excerpt 1.11: A $\hat{6} - \hat{5}$ cadence in a major key with a sharpened sixth of $\hat{6}$. [BWV 850a]

Example 1.1 (BWV 862a). To illustrate the deconstruction of a piece into its constituent phrases, consider the prelude in $f\sharp$ minor from the Well Tempered Clavier I. The prelude

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is written in $\frac{4}{4}$ and consists of 24 measures. Table 1.1 shows each of the individual phrases and the cadences which demarcate them. One should also note that there is much more structure to this piece than the simple division into basic phrases. Often phrases are part of a hierarchical structure, with groups (usually pairs) of phrases forming a larger phrase.

Three perfect cadences are found in the piece: one in the middle confirming the minor dominant key, $c\sharp$ minor, and two at the end confirming the home key, $f\sharp$ minor. The two perfect cadences at the “coda” are an example of a typical pattern of **strengthening** or **prolongation** used to close a piece of music—one perfect cadence confirms the home key, and a stronger cadence in the home key follows shortly to conclude the piece. Generally, the first cadence is used to set up a tonic pedal point and/or is preceded by a dominant pedal point. The idea of strengthening a cadence may apply elsewhere in a piece to other types of cadences; one will note two other cadences as marked on Table 1.16 are strengthenings. In these particular cases, the material between the internal cadence and the end of the phrase can’t stand alone as a phrase (one might say that it is an *incomplete* subphrase).

measures	cadence	remarks
1 – 2		authentic cadence; bass pedal point on $\hat{1}$
2 – 3	$\hat{4} - \hat{3}$	
3 – 5	$\hat{4} - \hat{3}$	
5 – 7	$\hat{2} - \hat{1}$	compound bass; $\hat{7}$ on weak beat following $\hat{2}$
7 – 8	$\hat{4} - \hat{3}$	
8 – 10	$\hat{2} - \hat{1}$	compound bass; $\hat{7}$ on weak beat following $\hat{2}$
10 – 12	$\hat{5} - \hat{1}$	preceded by deceptive $\hat{5} - \hat{6}$ cadence
12 – 13	$\hat{2} - \hat{1}$	
13 – 14	$\hat{4} - \hat{3}$	
14 – 15	$\hat{2} - \hat{3}$	
15 – 16	$\hat{2} - \hat{1}$	
16 – 19	$\hat{6} - \hat{5}$	strengthening of $\hat{4} - \hat{5}$ half cadence at mm. 18
19 – 20	$\hat{4} - \hat{3}$	upper voices absent on first beat of mm. 20, weakening cadence
20 – 22	$\hat{5} - \hat{1}$	begins a (thematic) pedal point on $\hat{1}$
22 – 23	$\hat{2} - \hat{1}$	
23 – 24	$\hat{5} - \hat{1}$	strengthening of $\hat{4} - \hat{3}$ cadence at mm. 24

Table 1.1: The phrases and cadences of the $f\sharp$ minor prelude of WTC I. Due to the descending motif found throughout the piece, there are more $\hat{2} - \hat{1}$ cadences than typical. [BWV 862a]

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1.2 PHRASE STRUCTURE

The phrases(or incomplete subphrases) in a given piece of music tend to form small hierarchies with groups of ideas forming phrases, and groups of phrases forming larger, more complex structures. Phrases or subphrases that can be grouped together in this way often are related to each other according to one of a few common structural devices. Generally, any structure can be described in terms of a subphrase referred to as the **basic idea**(denoted by a bold **X**). This may be thought as the “seed” or “generator” for the entire phrase. The basic idea is generally stated at least twice in the phrase, although it may be “transformed” in a number of ways. Typically, a **complementary idea**(denoted by a bold **Y** or **Z**) is usually featured in addition to the basic idea. The most basic device does not utilize any repetition of the basic idea and simply pairs it with a complementary idea, which we represent as

$$\text{I: } \mathbf{X} \quad \mathbf{Y} \parallel.$$

We informally refer to such a structure as a *pair*. In the above diagram, the Roman numeral refers to a voice or a group of voices, and the boldface letters represent phrases or subphrases. The double vertical line at the end signals the end of the phrase, and usually an implied cadence.

IMITATION

An imitative phrase structure involves a restatement(called the **imitation**) of the basic idea in another voice. The basic idea may be a complete phrase on its own, or a fragment of a phrase. When the basic idea is a phrase, the most common imitative structure is

$$\begin{array}{l} \text{I: } \mathbf{X} \quad \mathbf{Y} \\ \text{II: } (\mathbf{Z}) \quad \mathbf{X}^* \end{array} \parallel. \quad (\star)$$

In this diagram, the asterisk typically represents transposition in a different voice, generally by octave or a fifth. The vertical line represents the division between the **X** and **Y** phrases, at which point there may be an internal cadence. If present, **Y** may be related to **Z** by transposition as well. If **X** is an incomplete subphrase, then a common structure used to build a phrase from **X** is

$$\begin{array}{l} \text{I: } \mathbf{X}_1 \quad \mathbf{Y}_1 \\ \text{II: } (\mathbf{Z}_1) \quad \mathbf{X}_1^* \end{array} \parallel \begin{array}{l} \mathbf{X}_2 \quad \mathbf{Y}_2 \\ (\mathbf{Z}_2) \quad \mathbf{X}_2^* \end{array} \parallel. \quad (\star\star)$$

The change in subscript ($1 \rightarrow 2$) typically represents transposition by unison or fifth in the same voice. This type of structure is characteristic of inventions; see Chapter 1.16 for more information. Often an imitative phrase structure is used to open a piece; when this happens the basic idea **X** is generally *thematic*. In such cases we call **X** the **subject**, its imitation **X**^{*} an **answer**, and **Y** a **countersubject**(which may not be thematic). Not every musical idea can

yield a viable subject; while it is hard to say when an idea is open to imitation, we can in some circumstances rule out poor contenders.



Excerpt 1.12: A subject-answer structure of the form ($\star\star$), in which the subject starts and ends on $\hat{5}$, leading to a half cadence at the end of the first phrase. The end of the subject is altered in the second phrase in order to end on an authentic cadence. [BWV 778]

For example, suppose one has a structure of the form (\star), involving an internal cadence. If the end of the subject and the start of the answer coincide on the same beat, then it follows that they must contribute to the same harmony. As the subject must open the piece¹, it must begin by implying a dominant or tonic harmony to confirm the key, usually through the use of degrees $\hat{1}$, $\hat{3}$, or $\hat{5}$. These conditions restrict what possible subjects are permissible, depending on the interval of imitation. For example, consider what happens in a two-voice texture when the answer is in the bass, an octave below the subject. It would be unusual for the subject to end in a half cadence, as this creates the expectation for the answer to end on an authentic cadence, which is not possible given the interval of imitation. Thus, the subject should end with an authentic cadence, so the answer (and thus the subject) must begin² with $\hat{1}$ or $\hat{3}$. If the subject begins with $\hat{1}$, then it may end on either $\hat{1}$, $\hat{3}$, or $\hat{5}$. However, if the subject begins on $\hat{3}$, it should end on $\hat{1}$, for ending on $\hat{3}$ would double the third, and ending $\hat{5}$ may leave the root omitted in a two-voice texture. Similar deductions may be made if the answer is an octave above.

If the subject does not satisfy these conditions, then the subject-answer structure is usually modified so that there is a “gap” between subject and answer; in this way one may reach a desirable harmony by the time the answer is introduced. The gap between subject and answer is either filled by the start of the countersubject, or a short fragment of notes we refer to as a *link*. The most natural way to create such a gap is by starting the subject on a weak beat, and ending the subject on a strong beat (typically the first beat of a measure); the length of the gap between subject and answer is equal to the amount of time “stolen” from the subject. When the length of this gap is larger than half a measure, the piece is usually written as beginning with an anacrusis.

¹Rarely, in fugues immediately succeeding another movement in a larger piece, the subject may begin on a different scale degree, as the key has been previously established.

²One must exercise some caution in determining this; typically this is the first essential note in the subject.

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Excerpt 1.13: A subject starting partially through the first measure, allowing for a link between the subject and answer. In this instance, the link is necessary, as the subject ends with an authentic cadence in $f\sharp$, while the start of the answer emphasizes the key of $c\sharp$. [BWV 883b]



Excerpt 1.14: An irregular subject-answer structure consisting of three subphrases, in which the subject starts and ends on $\hat{1}$. Two separate countersubjects are introduced. [BWV 1015]

✿ ANTECEDENT – CONSEQUENT

The **antecedent-consequent** structure involves a typically symmetrical division of a large phrase into two smaller phrases; the former called the **antecedent** and the latter the **consequent**. The antecedent and consequent phrases both begin with an incomplete subphrase stating the basic idea, followed by a complementary idea. The two statements of the basic idea are typically identical, while the complementary idea is either altered significantly or entirely different. The antecedent phrase usually is concluded with a weaker cadence than the consequent phrase, which typically ends with a perfect authentic cadence. Like the subject-answer structure, the antecedent-consequent structure is typically used to open a piece; this is most commonly seen in dance forms. The structure can be represented as

$$I: \quad X \quad Y \mid X' \quad Z \parallel.$$

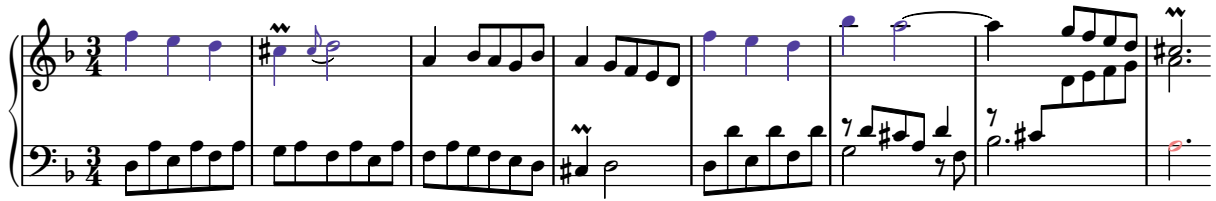
The prime symbol in the above diagram typically represents an exact restatement.

✿ PRESENTATION – CONTINUATION

Occasionally, one is presented with two consecutive statements of a basic idea—the **presentation**—followed by a **continuation** leading to a cadence. This structure may be diagrammed as

$$I: \quad X_1 \quad X_2 \mid Y_{(X)} \parallel.$$

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Excerpt 1.15: An antecedent-consequent phrase structure used in the opening of a menuet. [BWV 809]

The change in subscript ($1 \rightarrow 2$) represents some transformation of the basic idea restated in the same voice, typically transposition by a step up or down. The parenthetical subscript on Y reflects the fact that the continuation often incorporates the basic idea in some fashion. It is not necessary (and usually is not the case) for the basic idea X to constitute a complete phrase. The dashed vertical line represents the possibility for a cadence (typically weak) separating the presentation from continuation, even if X is incomplete. Generally, the structure is symmetric, meaning Y occupies twice the amount of time as X .



Excerpt 1.16: A presentation-continuation structure, in which the restatement X^* is essentially a transposition up by step. The continuation Y_X makes use of the basic idea once more. [BWV 900]

SEQUENCES & FIGURATIONS

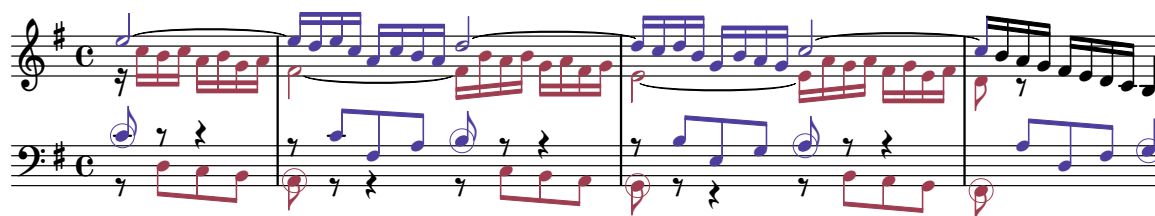
The last (and most common by far) structure we will discuss involves multiple consecutive repetitions of a basic idea. If with each repetition, the underlying harmony changes in a “predictable” manner, we call the structure a (harmonic) **sequence**, which may be diagrammed as

$$I: \quad X_1 \mid X_2 \mid \cdots \mid (Z_{(X)}) \parallel. \quad (\dagger)$$

The subscripts represent a different iteration of the basic idea, usually being related by transposition by a fixed interval. The dashed vertical line represents the possibility for a weak cadence after each iteration. This is typically the case for *modulating* sequences; for

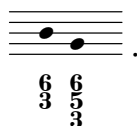
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such sequences if a cadence occurs after X_1 , each subsequent iteration will be followed by a cadence as well. The sequence typically ends with an cadential idea Z which is based on X . Typically, there are two or three iterations of the basic idea; greater than three iterations runs the risk of being too repetitive.



Excerpt 1.17: A sequence of the form (\dagger) built from a pair of ideas (blue, red) with three iterations. The phrase ends with a modification of the basic idea. [BWV 902]

The overall harmonic progression of a sequence depends on the “relative” or “abstract” bass progression within X , and the interval of transposition between successive iterations. By “relative”, we refer to the series of bass motions within X , not making reference to any any particular note. Such progressions can be diagrammed on a clefless staff; for example, the abstract progression in Excerpt 1.17 is of the form



The most common progressions involve two essential harmonies, in which case X may be thought as comprising a pair of subunits, often related by imitation, each corresponding to one of the harmonies in X .

If the underlying harmony accompanying each repetition does not follow such harmonic formulae, but instead outlines a more “typical” harmonic progression, one may be able to say that the phrase simply consists of a *melodic* sequence or **figuration** based on X , provided X carries a distinct melodic character.



Excerpt 1.18: A figuration outlining a typical harmonic progression. [BWV 846a]

❖ COMPOUND STRUCTURES

It is instructive to look through some short pieces and determine the types of structural devices used.

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Example 1.2 (BWV 933). Consider the Little Prelude in **d** minor from the Six Little Preludes, a *binary* form prelude written in $\frac{3}{8}$. Table 1.16 shows the deconstruction the **A** section, which consists of 24 measures, into its constituent phrases. We first analyze the “small-scale” phrase structure.

	measures	cadence	remarks
1	1 – 4 ⁺	$\hat{4} - \hat{3}$	
2	5 – 9	$\hat{7} - \hat{1}$	cadence on m. 8; no elision
3	9 – 13	$\hat{7} - \hat{1}$	cadence on m. 12; no elision; $e\flat$ introduced to tonicize B
4	13 – 17	$\hat{4} - \hat{3}$	cadence on m. 16; no elision
5	17 – 21 ⁺	$\hat{7} - \hat{1}$	
6	21 – 24		authentic cadence; scalar motion from $\hat{5}$ to $\hat{1}$ in the bass

The first phrase is simultaneously an example of an antecedent–consequent structure and an imitative structure, which may be diagrammed as

$$\begin{array}{l} \text{I:} \quad \mathbf{X}_1 \quad \mathbf{X}_2 \quad \left| \quad \mathbf{Y} \text{ — } \right. \\ \text{II:} \quad \quad \quad \left| \quad \mathbf{X}_1 \quad \mathbf{X}_2 \right. \end{array} \parallel.$$