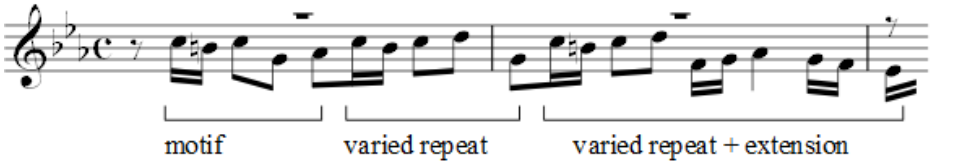
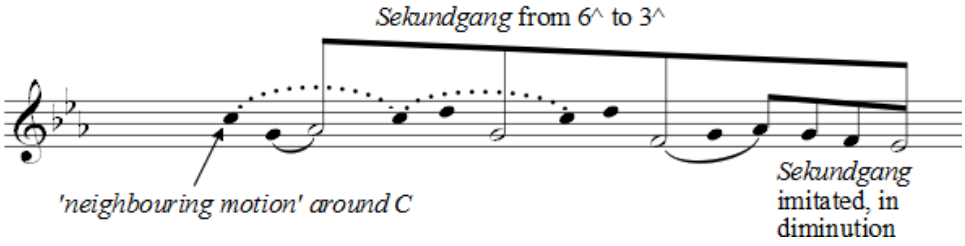
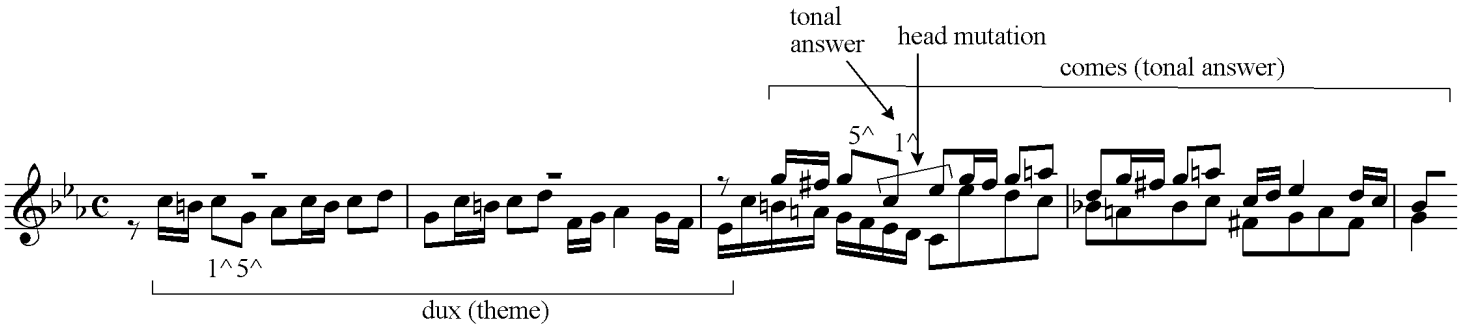
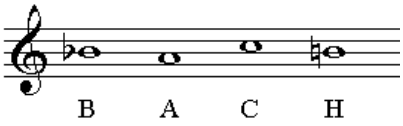
Martijn Hooning

FUGUE









March 2010 / December 2013 - February 2014

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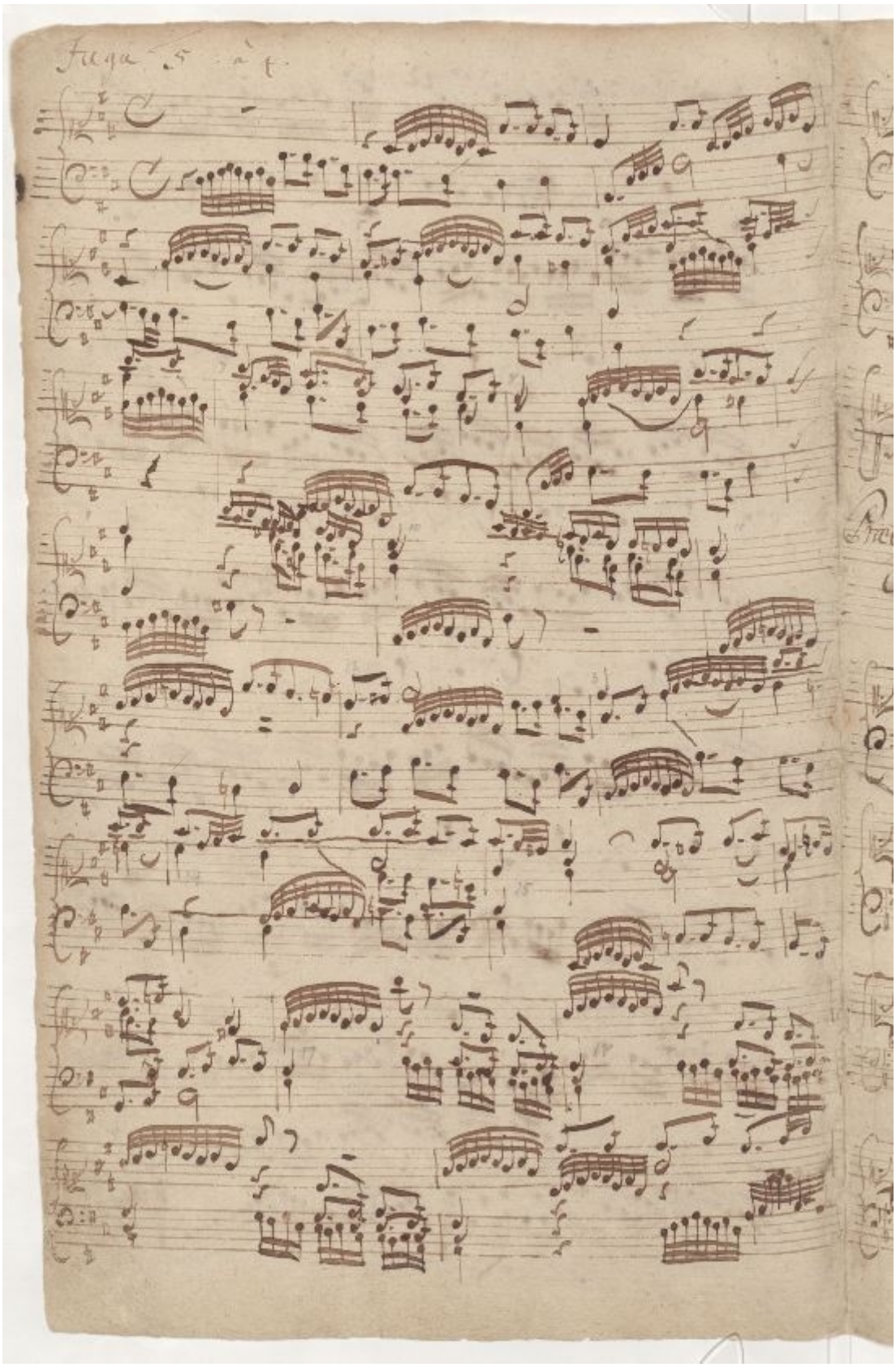


Beginning of the Fugue in D major, Well-Tempered Clavier, first book,
in the handwriting of Bach (fair copy of the first book of the WTC, 1723)
- *compare example 57* -

(INTRO)

This text is an extended, and largely revised translation of a text I wrote in Dutch on the same subject in 2009. Probably this text will by no means be a final version: revision may be necessary, and it is my intention to add more information *after* the text as it is now. So, some chapters will follow later...

I will translate the text (back) to Dutch in the near future, as I believe this new version offers better and more complete information than the Dutch version of (almost) five years ago. I would like to advice my Dutch students to mainly use this English text, and to use the old Dutch version eventually adjacent (and then primarily because of the differences in terminology).

This is about what I want to add in the future:

- Example(s) of analyses of complete fugues (perhaps together with:)
- Example(s of harmonic analysis of fugue(s)
- Example of a fugue in the Classical period (probably Mozart)
- Fugue as part of another form, after Bach (for example: in a development section) or with another 'aim' than contrapuntal elaboration as such (possible examples: Beethoven String Quartet Op. 59.1, Piano Sonate Op. 110, Franck: String Quartet, Reger: ?)
- Fugue / counterpoint in the Twentieth century (Bartok, Hindemith, Shostakovich..)

When translating, I had to make a few decisions concerning terminology:

1. It seems that in the more recent textbooks in English the terms *subject* and *answer* are preferred over *dux* and *comes*. Because I am convinced that the terms dux and comes are convenient, and more appropriate when describing (and understanding) fugal imitation technique, I stick to these. In practice, I use *dux* and *comes* in order to make the precise distinction between entrances in 'original' and transposed form, and *subject* in a more general sense, to label *any* entrance of the subject. In the examples though, I mostly mention the alternative lables *subject* and *answer* as well.
2. In many English texts no clear distinction is made between *interludes* and *episodes*[1] But: the non-thematic measures *within* groups of entrances of the subject often clearly have a different function than sections without the subject outside such groups. I therefore believe it makes prefect sense to make a clear distinction:
   a. Sections in which the subject is used should not be labeled episodes or interludes
   b. Interludes stand *within* a group of entrances of the subject
   c. Episodes stand *after* a group of entrances of the subject.

In most places where I mention the Well-Tempered Clavier, I use the abbrevation *WTC*.

Please feel invited to observe errors and omissions in this text, to suggest additions etc.!

Amsterdam, February 22, 2014

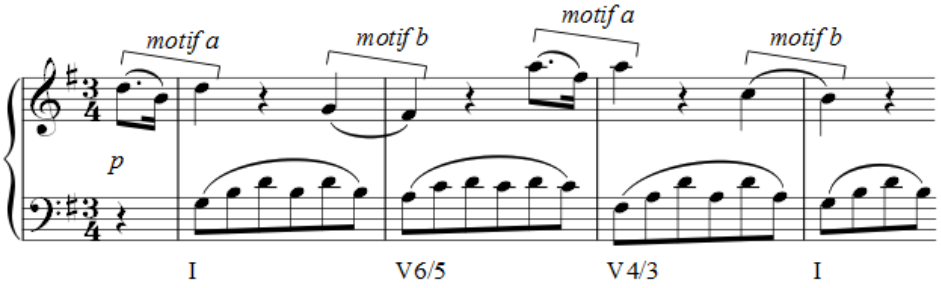
1 Up to the nonsensical use of the term *episode* for sections of fugues in which the subject recurs. See the English wikipedia, for example!

SOME GENERAL OBSERVATIONS ABOUT POLYPHONY

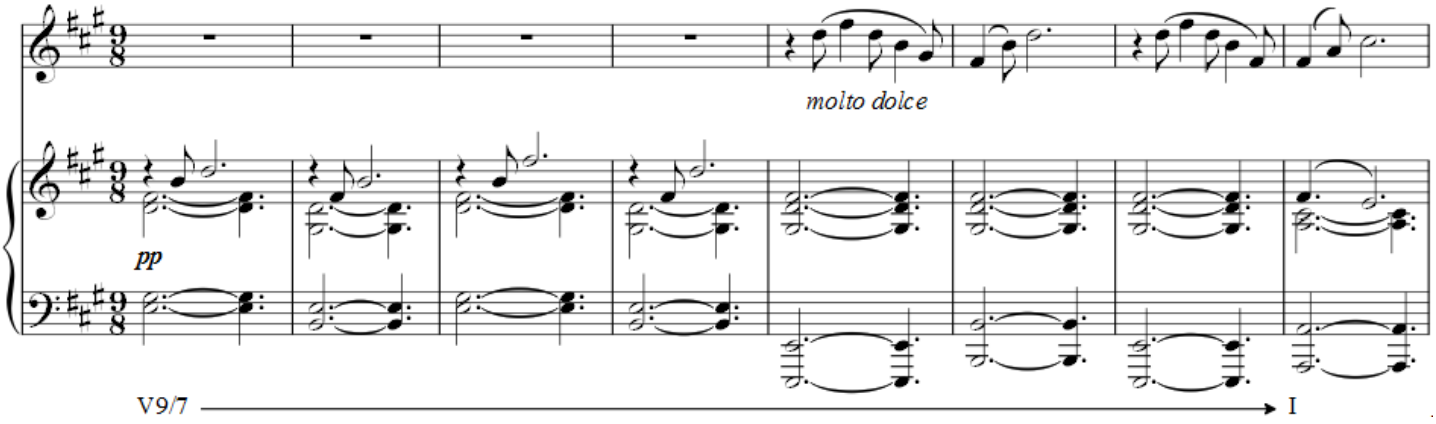
polyphony versus homophony

In music, homophony[2] is a texture in which two or more parts move together in a harmonuous way, the relationship between them creating intervals or, more commonly, chords. This is distinct from monophony, in which *all* parts (if there are multiple parts) move in parallel rhythm and pitch. A homophonic texture is in principle also homorhythmic (or uses a 'very similar rhythm'). Often, in homophonic music one voice is melodically predominant throughout a composition. The other voices 'support' this main voice, thus forming the accompaniment: they work together to form an underlying harmony. In such situations, we can speak of: melody-dominated homophony. In the Classicism and Romanticism compositions often bear the character of such 'melody with accompaniment'. These homophonic compositions usually are largely determined by the harmony, the 'verticality' in a composition. Often even the melody is (at least partly) determined by the harmony, as it clearly contains arppegiations of the underlying harmonies - see examples 1 and 2. Repetitions, whether or not varied, often take place *within* a voice or group of voices, so that the music is often to a large extent characterized by repetition, sequencing and/or development of *motifs*.

Example 1
Mozart, Piano Sonata in G major, K 283, beginning of the first movement



Example 2
Franck, Violin Sonata, beginning of the first movement



As opposed to monophony and homophony, polyphony is a texture consisting of two or more simultaneous, (more or less) independent lines, as opposed to monophony and homophony. In polyphony voices are rhythmically more independent, and often *all* voices are melodically relevant - although they need not to be 'important' *at the same time*. Repetition of motives or themes, whether or not varied, often takes place *between voices:* they imitate each other. So, we have a lot of good reasons to say that voices in polyphonic music tend to be of more equal value than in homophonic music, and that the lines *in all voices* are of great importance. Apart from that, melodies in polyphonic compositions often tend to be less determined by the harmony than in homophonic music.

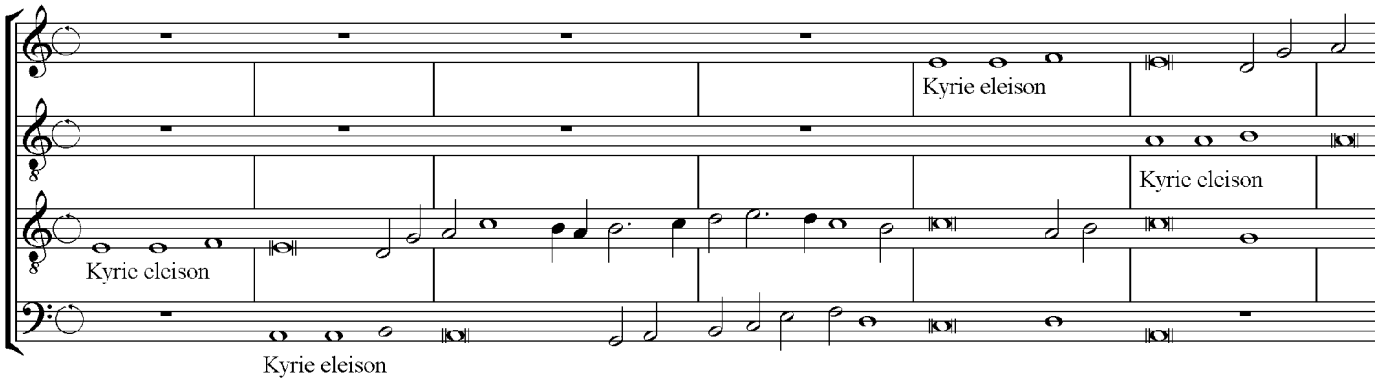
2 (/həˈmɒfəni/; Greek: ὁμόφωνος, homóphōnos, from ὁμός, homós, "same" and φωνή, phōnē, "sound, tone"). Initially, in Ancient Greece, homophony indicated music in which a single melody is performed by two or more voices in unison or octaves, i.e. monophony with multiple voices.

Melodies in polyphonic music often are not structured periodical ('symmetrical'); they can have, on the contrary, a pretty irregular structure. Repetitions or elaborations of motifs not necessarily play a major role in these melodies. In certain places in a polyphonic composition two or more voices can play different roles *simultanuously* - which also shows that they are melodically 'independent'. For example: one voice ascends while another descends simultanuously (contrary motion), two voices have different melodies simultaneously (melodic contrast), two or more voices form a rhythmic contrast (in which the voices often complement each other to a continuous rhythmic motion: complementary rhythm).

In two periods in music History polyphony plays an important role. In the Renaissance (late 15th and 16th century, think of composers as Josquin, Lassus, Palestrina) we find the so-called modal counterpoint.[3] In the second important period, the Baroque (especially the High and Late Baroque), we encounter the so-called harmonic counterpoint, or tonal counterpoint (Bach, Händel etc.), as in that period the major and minor keys have become well established, and we thereefore can speak of *tonal* music (as opposed to the *modal* music of the Renaissance and the Middle Ages).[4]

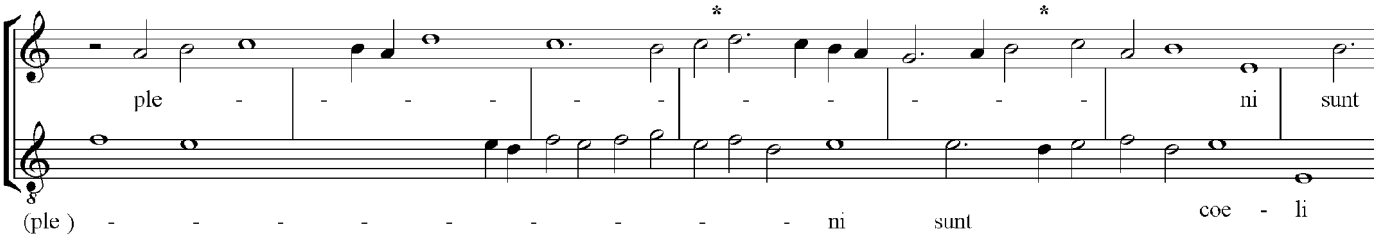
Some examples:

Example 3
Josquin des Prez, Missa pange lingua, beginninng of the Kyrie



In example 3 the voices move clearly independently, and form rhythmic contrasts several times. At the beginning the bass imitates the tenor (a perfect fifth lower)[5], and from measure 5 the alto imitates the soprano; all voices start with the same melodic material. In this way, imitation in pairs is created: both tenor and bass, and soprano and alto form *pairs of voices.*

Example 4
Josquin des Prez, Missa pange lingua, Sanctus (measures 29-34)



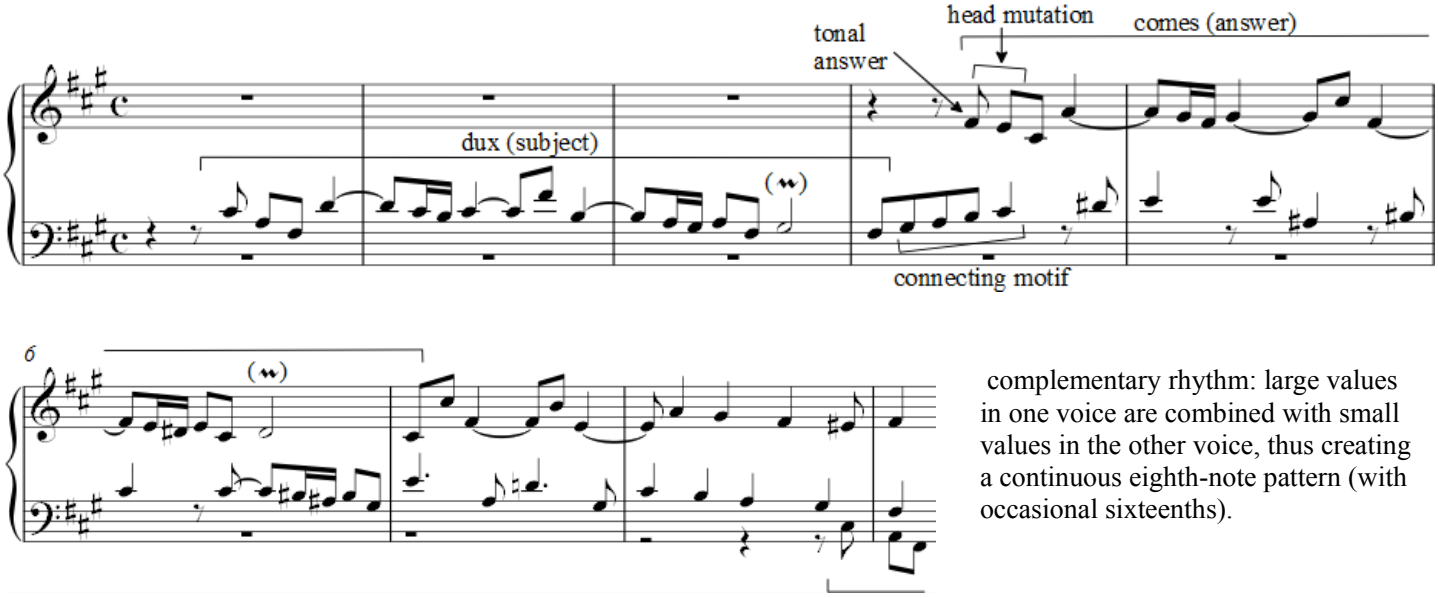
3 'modal' because at that time the later major and minor keys did not exist yet; composers composed in one of the modes: Dorian, Phrygian, Lydian and Mixolydian, and from 1550 also in Eolian, Ionian. Sometimes these modes are called: 'church modes').

4 Instead of 'harmonic counterpoint' we can use the term *tonal counterpoint,* as in the Baroque, especially in the late Baroque, the 'modern' major-/minor-tonality is already largely in place - together with the figured-bass practice. We therefore rightly can speak of *tonal* music, as opposed to the *modal* music of the Renaissance and before.

5 The third note of the bass has to be sung as Bb instead of B. This is called *musica ficta:* we have to perform an accidental, though it is not notated. Then the imitation in the bass is literally the same as the first entrance in the tenor.

In the example from Josquin's *Missa Pange Lingua, Sanctus* (example 4) the two voices are entirely in contrary motion[6], except at the spots marked with *. In the first measures of Bach's Fugue in F# minor, WTC II (example 5) the voices form complementary rhythm from measure 4:

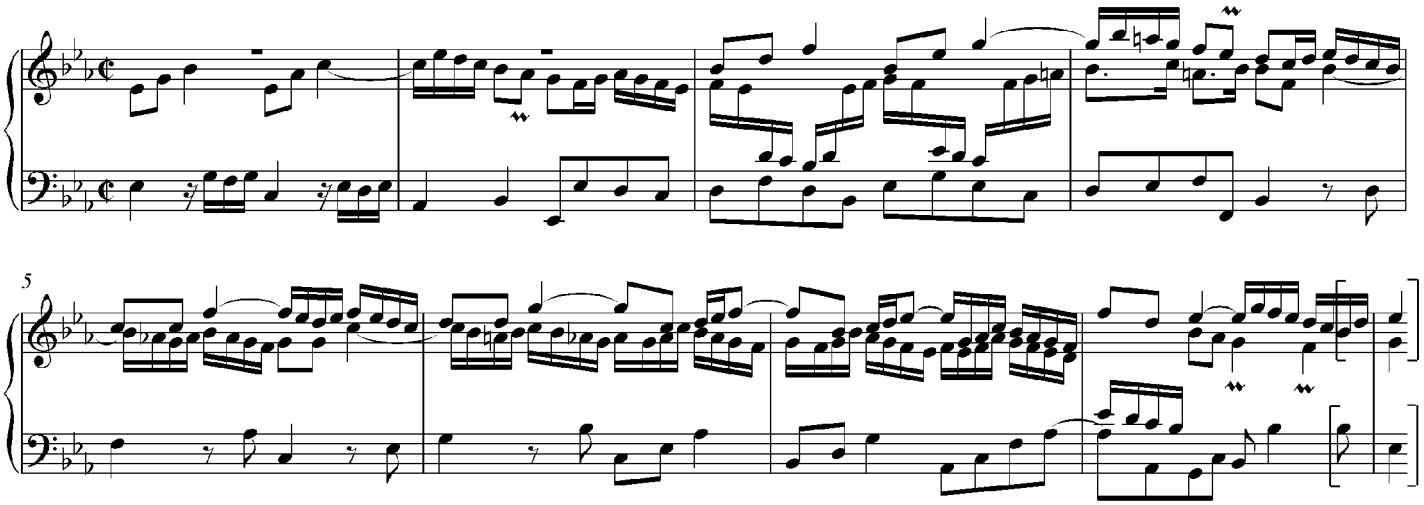
Example 5
Bach, Fugue in F# minor, WTC II



complementary rhythm: large values in one voice are combined with small values in the other voice, thus creating a continuous eighth-note pattern (with occasional sixteenths).

Example 6
Bach, beginning of the Organ Sonata in E major

This is a clear example of rhythmic contrast and complementary rhythm, along with imitation (compare the top voice from measure 3 with the middle voice from measure 1).



polyphonic techniques

With the tems 'counterpoint' and 'contrapuntal' we usually describe music in which 'horizontal' has precedence over 'vertical', and in which polyphony is used.[7] In another, more concrete and technical sense the term 'counterpoint' is used to label a *voice* that is *added* to a voice that is already there (a

6 Contrary motion: See page 11.

7 Interestingly, this use of the term counterpoint is in fact historically incorrect. Originally 'counterpoint' described which notes (in fact: which *vertical intervals)* could be written in a second voice against a note in the main voice. The technique of writing certain intervals was described as *punctus contra punctum* ('note against note'); the term *contrapunctus* is a derivation from this Latin term. This means that *counterpoint* originally described the *verticality* in music (which intervals can be used in which situations?), and not the melody or melodies.

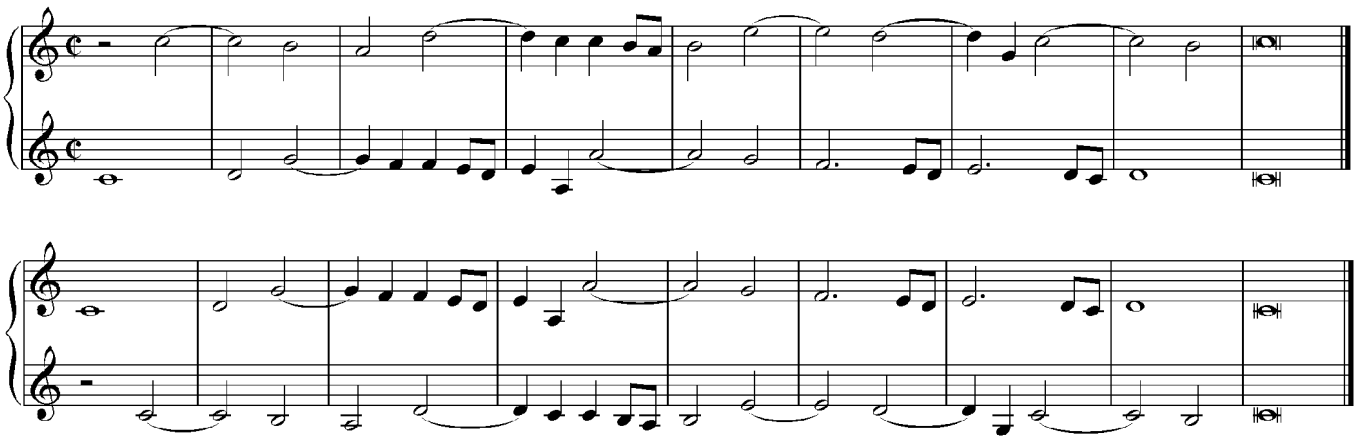
given voice), for instance a cantus firmus, or to a voice that is considered as the more important voice, for instance a subject in a fugue[8]. Instead of counterpoint we can use the term counterpart in such situations.

Composers often design such counterpoints or counterparts, in such a way that the voices can be *exchanged:* the counterpoint can then be placed either *under* or *on top of* the given voice. In other words, when two voices are involved, the higher voice can be given the melody of the lower voice and vice versa, wherein at least one of the melodies is moved up or down. When doing this, the composer takes into account that the *intervals between the voices change.* If two or more voices actually can 'change places' we speak of: invertible counterpoint. In so-called simple counterpoint on the other hand, voices can *not* be exchanged.

And, when applying invertible counterpoint (when we design two or more voices so that they can change places) various *intervals* can be used. Imagine that, when using two voices, we move the higher voice down, so that it becomes the lower voice. It is then normally moved down either an octave, or a tenth, or a twelfth. The idea is of course that, when doing this, the two (or more) voices still sound well together, and no mistakes (like parallel perfect consonants) arise. When *two* voices are written so that the composition would be still 'all right' when one of the voices is moved down or up an *octave* (and then becomes the higher voice instead of the lower voice, or vice versa) these two voices are written in double counterpoint at the octave. Such displacements at the octave are the commonest, especially in fugues. Displacements at other intervals, especially at the tenth and twelfth, are also possible though. We then logically speak of double counterpoint at the tenth and double counterpoint at the twelfth. When *three* voices are involved, and they all can be interchanged, we speak of triple counterpoint (at the octave, tenth, or twelfth); when *four* voices can be displaced we have quadruple counterpoint (at the octave, tenth, or twelfth). Quadruple counterpoint is rarely used, and more than four voices are hardly ever involved.

Examples 7, 8 and 9 below are taken from the probably most famous counterpoint-textbook of all times: *Gradus ad Parnassum* by Johann Josef Fux; it was published in 1725. These examples show what will happen when double counterpoint at the octave, at the tenth or at the twelfth is applied:

Example 7
double counterpoint at the octave: the lower voice in the first system (the *cantus firmus)* reappears in the second system as the higher voice. To achieve this, the counterpoint is displaced an octave down; it reappears in the lower voice:



Logically, when applying double counterpoint at the octave, the intervals between the two voices change according to this scheme (compare the scheme with example 7):

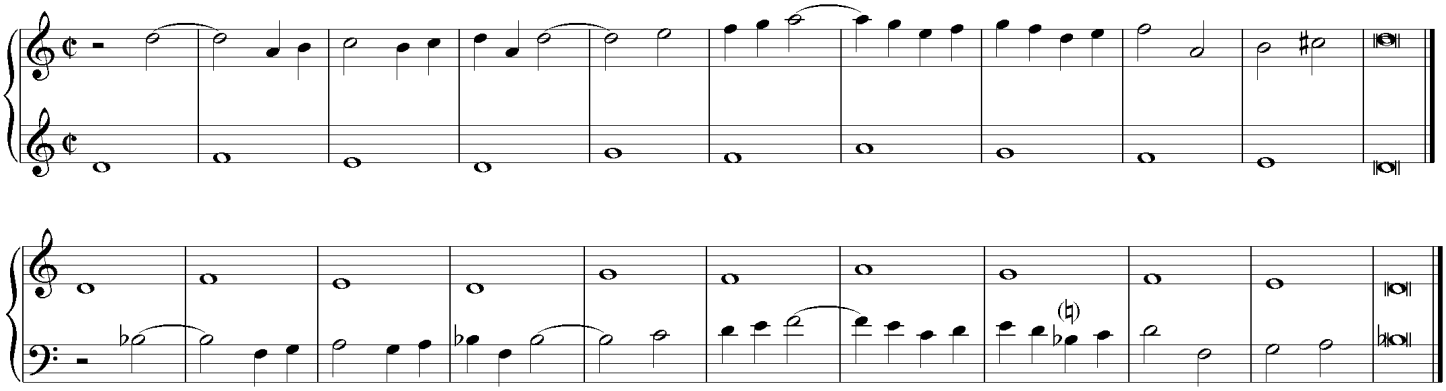
1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1

8 Subject in fugues: see from page 27.

This results in the exclusion of certain situations, for example

- we can not write parallel fourths between the two voices (because, when these parallel fourths are inverted they become parallel fifths)
- we have to treat a fifth between the voices as a dissonant (the inversion of the fifth is the fourth, which is in two-part counterpoint always *dissonant ,* a 'quarta dissonans').

Example 8
Double counterpoint at the tenth: the lower voice in the first system (the *cantus firmus)* reappears in the second system as the lower voice. To achieve this, the counterpoint is displaced a tenth down; it reappears in the lower voice:



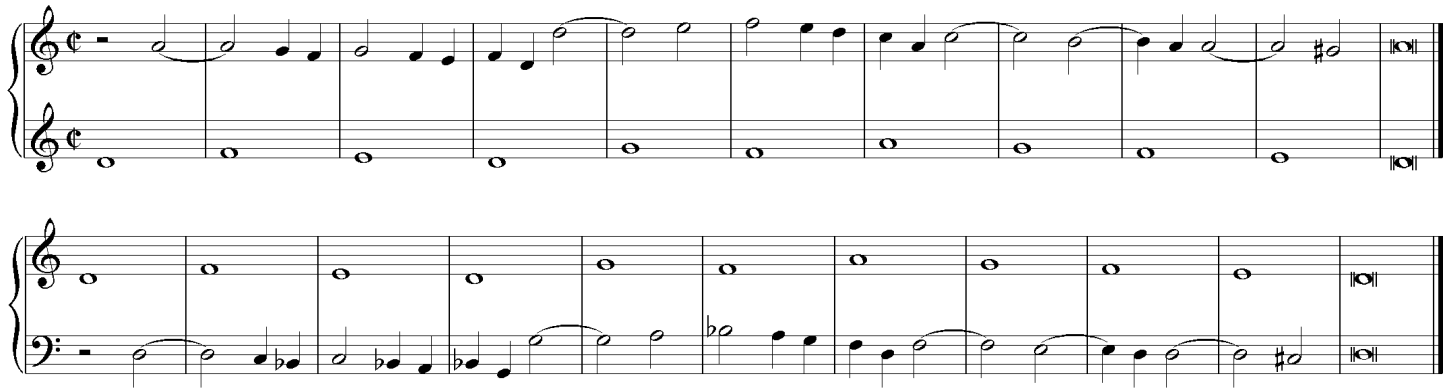
Logically, when applying double counterpoint at the tenth, the intervals between the two voices change according to this scheme (compare the scheme with example 8):

1	2	3	4	5	6	7	8	9	10
10	9	8	7	6	5	4	3	2	1

Here as well, some situations have to be avoided, for example

- we can not write parallel thirds, tenths or sixths between the two voices (because, when these are inverted they become parallel octaves, secunds and fifths respectively)
- the fourth is a 'dangerous' interval, as it becomes a seventh when inverted.

Example 9
Double counterpoint at the twelfth:.the lower voice in the first system (the *cantus firmus)* reappears in the second system as the higher voice. To achieve this, the counterpoint is displaced a twelfth down; it reappears in the lower voice:



Logically, when applying double counterpoint at the twelfth, the intervals between the two voices change according to this scheme (compare the scheme with example 9):

1	2	3	4	5	6	7	8	9	10	11	12
12	11	10	9	8	7	6	5	4	3	2	1

Observe, for example, that a sixth becomes, when it is inverted, a dissonant interval (seventh). Therefore sevenths *resolving* to a sixth are here not useable.[9]

In polyphonic compositions imitations are common practice: then a melodic topic appears successively in different voices. Thereby, imitations are not always at the same pitch as the 'original.'[10] So, we have to distinguish between imitations according to the interval between the 'original' and the imitation: in the beginning of Josquin's *Missa Pange Lingua*[11] the imitation is a *fifth lower;* in Bach's Fugue in F# minor, WTC II[12] the imitation is a *fifth higher.*[13] We can then label these situations as*: imitation at the lower fifth,* and *imitation at the higher fifth.* (Similarly, when we imitate an octave higher, we speak of *imitation at the higher octave,* etc.)

When an imitation forms a precise 'copy' of the original (when it is *literal*, at the same, or at another pitch), we could label it, with a Latin term: motus rectus, or (better) speak of: imitation in similar motion. In this situation all directions in the melody (up or down), all intervals, and the rhythmic structure are precisely quoted from the original. This is for instance the case in Josquin's *Missa Pange Lingua*[14]*,* where the first five notes of the bass are repeated in all other voices, and in Bach's Organ Sonata in E major[15], where the imitation is much longer.

We speak of augmentation (Latin: *augmentatio*) as all note values are extended equally; usually this involves doubling all note values[16] For example:

We speak of diminution (Latin: *diminutio)* as all note values are reduced equally, usually this involves halving all note values (for example:

We speak of inversion (Latin: *motus inversus)* as all intervals in a melody are replaced by equal intervals in the opposite direction; the size of the intervals remains unchanged: An ascending minor third becomes a descending minor third, a descending major second becomes an ascending major second, etc. In modal and tonal music such precise inversions are not very common, because of the structure of modes and keys (in which whole tones and half tones occur in an irregular pattern). A freer variant is much more commonly used: contrary motion (Latin: *motus contrarius)*: The intervals in a melody are replaced by *eponymous* intervals in the opposite direction: the precise size of intervals can be altered (normally because they are adapted to the key) - this involves mostly changing major intervals into minor intervals, and vice versa. So: an ascending major third may become a descending minor third, a descending major seventh may become an ascending minor seventh, etc. Perfect, augmented and diminshed intervals on the other hand are in principle not changed.

9 Nice examples of applications of double counterpoint at the octave, the tenth and the twelfth are in the Fugue in G minor, WTC II - in the relations between subject and countersubject, and in the episodes.

10 Often even the key varies, as normally in fugues.

11 See example 3.

12 See example 5.

13 Imitations in the prime and the octave: see the Canons and Bach's First Invention in examples 15-20.

14 See example 3.

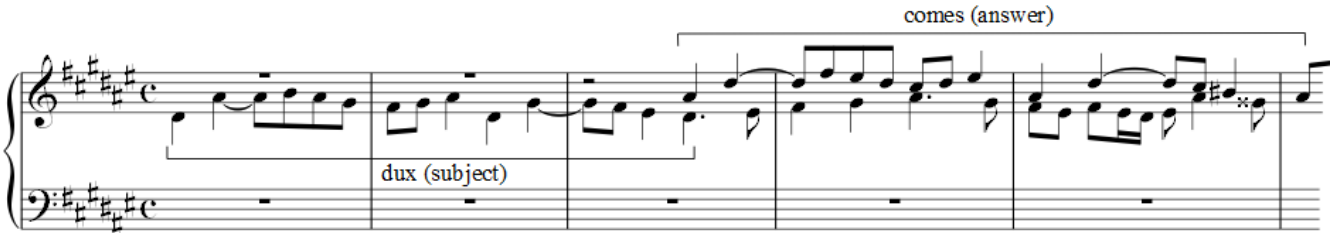
15 See example 6.

16 Other proportions are also possible though, especially in music of the Renaissance and the 20th Century. For example, in the music of Messiaen we find augmentations by one and a half etc. Likewise, we also find diminutions and augmentations in other proportions in his work. Sometimes, also in thework of Bach, we encounter *irregular* augmentations, in which the values are unequally extended - for example in the fugue in D# minor, WTC I.

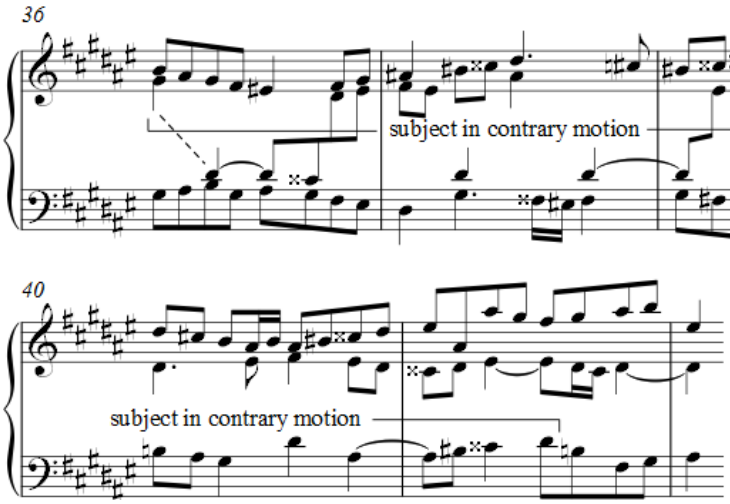
The Fugue in D# minor, WTC I (see example 10)[17] contains beautiful examples of both augmentation and contrary motion. In the Fugue in E major, WTC II the subject appears in diminution at some spots (see example 11):

Example 10
Bach, Fugue in D# minor, WTC I

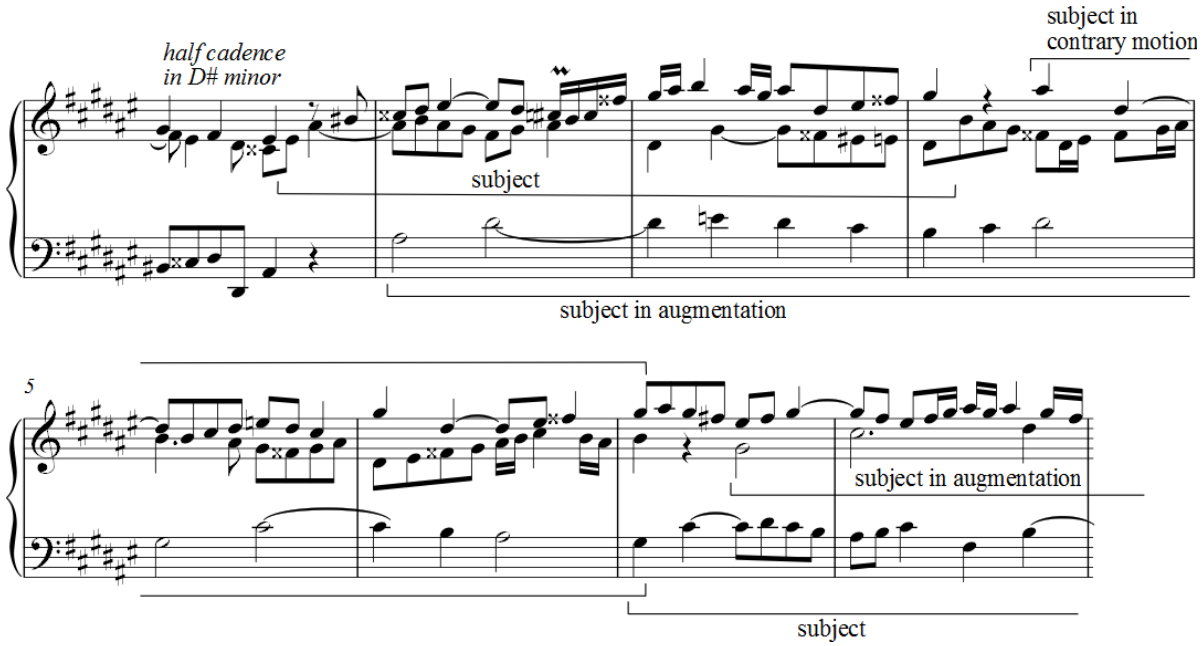
a. subject (dux) and answer (comes)



b. subject in contrary motion (measures 36-41):

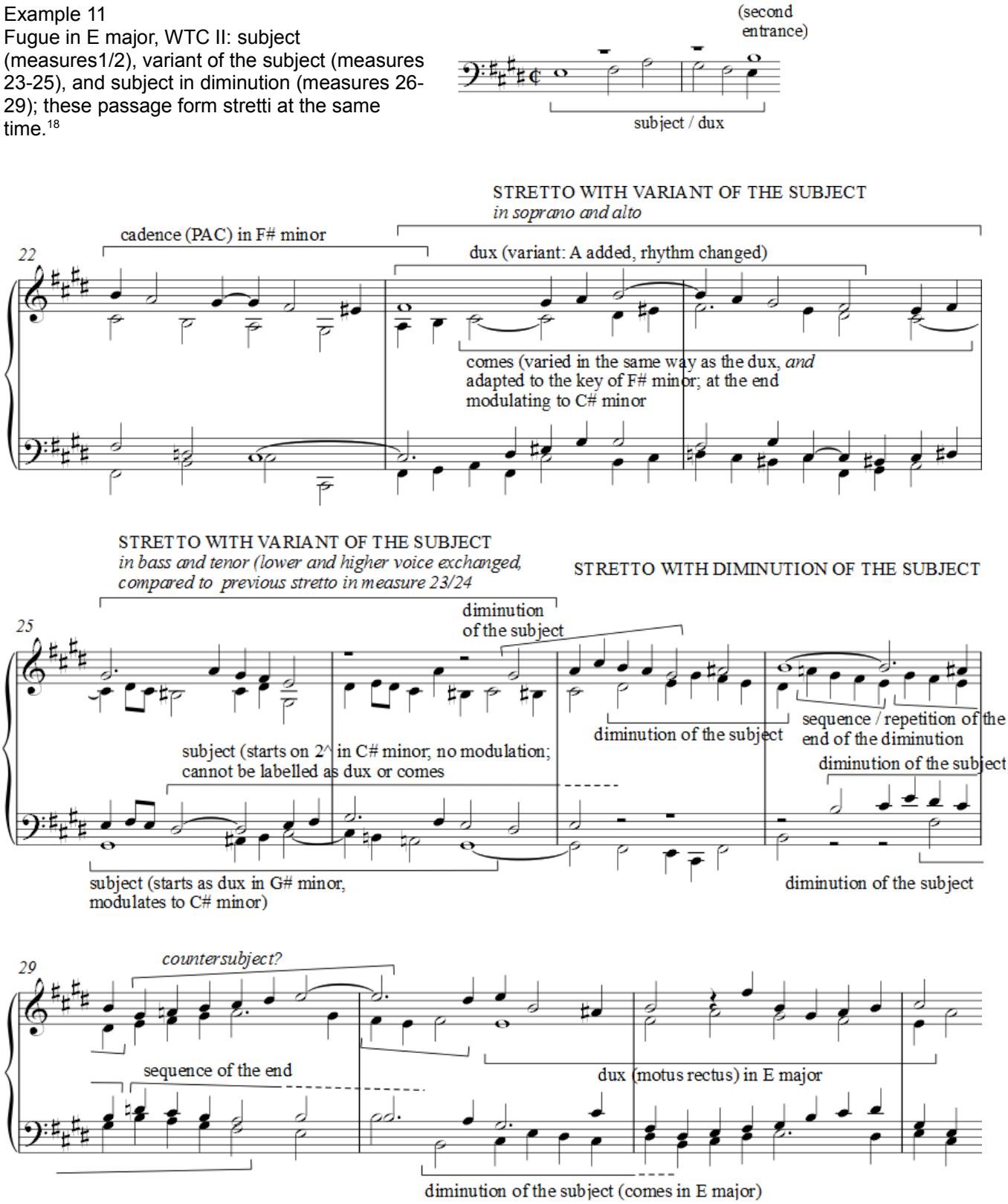


c. subject in augmentation combined with the subject in contrary motion, and with the motus rectus (measures 62-72):



17 See also examples 26 and 56.

Example 11
Fugue in E major, WTC II: subject (measures1/2), variant of the subject (measures 23-25), and subject in diminution (measures 26-29); these passage form stretti at the same time.[18]



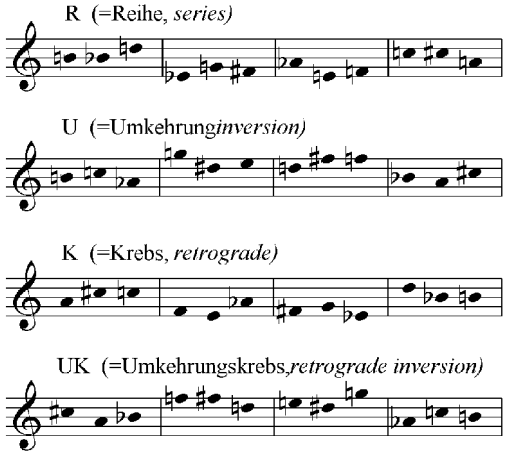
Retrograde (Latin: *motus retrogradus)* means that something is played *from back to front.*[19] And a retrograde, in turn, can be inverted - the result is called: retrograde-inversion. In both these forms the relationship with the original is very difficult to hear: aural perception of the relation between a musical topic and its backwards variant is in general hardly possible. Apart from that, tonal and modal

18 See page 66/67 for an explanation of *stretto.* For an explanation of the terms *dux* and *comes* see page 31.
19 This 'something' is most commonly a single melody, but can also be for instance: a group of voices, a set of chords, a rhythmic pattern.

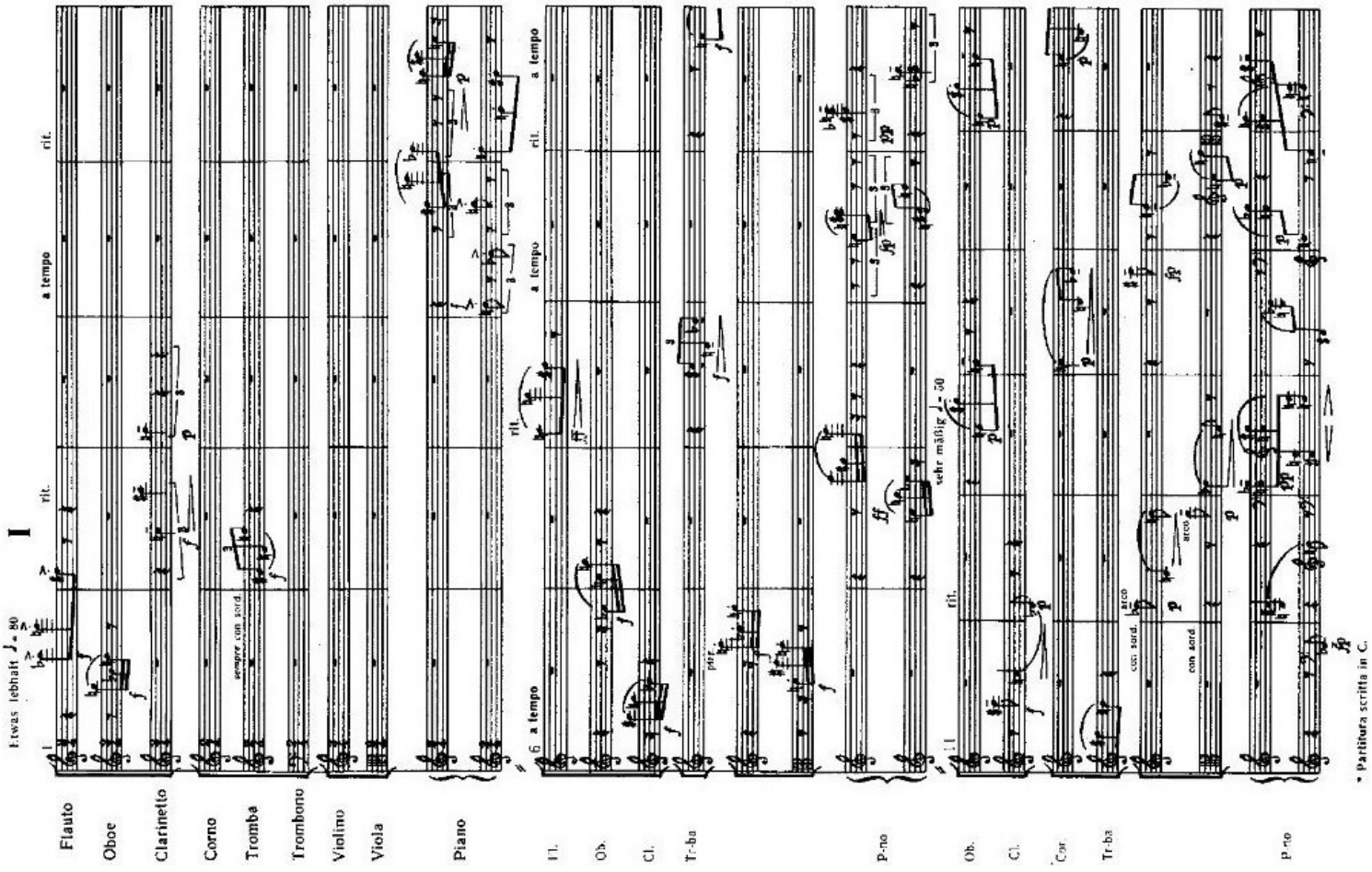
music normally uses certain 'directions' (think of: resolutions of dissonances, and of harmonic patterns, etc.). Mostly inverting these does not create any good music. Therefore, both retrogrades and retrograde-inversions are very uncommon until the Twentieth century. They only get great significance in the twelve-tone music (dodecaphony): in dodecaphonic compositions next to the *series* (or: twelve-tone series: all twelve notes of our system in the order decided by the composer) usually the three *variants* of the series: inversion, retrograde and retrograde-inversion are used. An example:

Example 12

Beginning of Anton Webern's *Konzert Op.24;* at the right you see the series (with inversion, retrograde and retrograde inversion). In thi example you see the *German* words for series, inversion etc. as well, together with their common abbrevations. It is clearly visible that the series consists of four trichords.[20]



Below you see the beginning of the score:



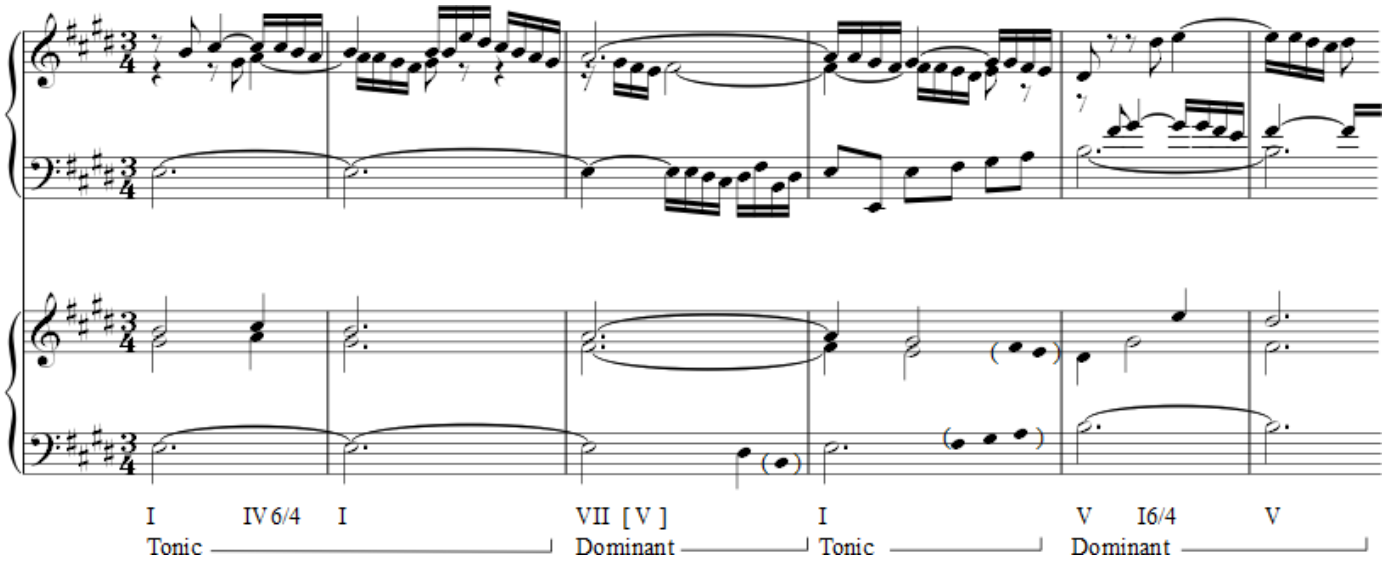
20 Trichord: group of 3 different pitches; likewise, a *tetrachord* is a group of 4 different pitches, a *pentachord* a group of 5 different pitches, and a *hexaxhord* a group of 6 different pitches. In modal or tonal music the pitches in such groups are normally a second apart from each other, minor and major seconds alternating in such a way that the group can be part of a modus or a key. We could name major or minor scales *heptachords* as well, as they consist of 7 notes. Usually we rather speak of heptatonic *keys* or *scales* though (as opposed to, for instance, *pentatonic* and *hexatonic* scales or tone systems.

Of course, the various techniques mentioned to this point can also be combined: an augmentation may appear in inversion, or contrary motion in diminution. In addition, different operations can be applied in various voices *simultaneously.*[21]

tonal counterpoint

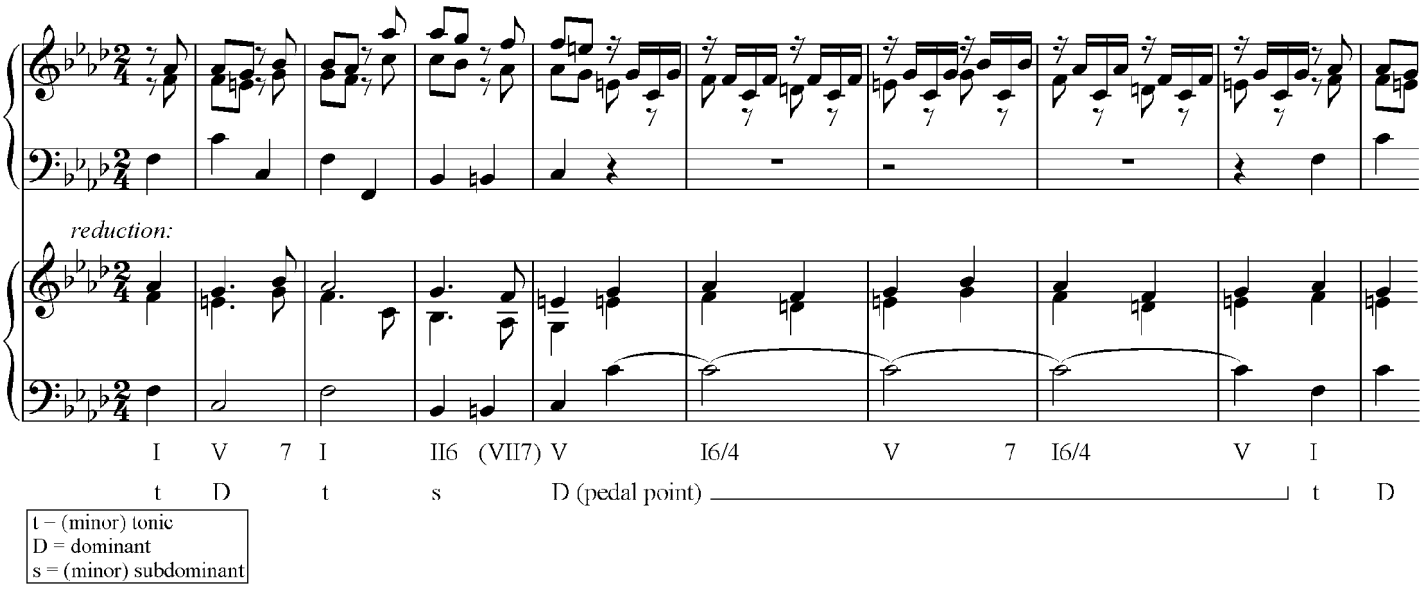
Music of the 16th century is written in the so-called modes[22], and therefore the contrapuntal music of that period logically can be labeled as: modal counterpoint. Harmonically this music is not yet characterized by the in a sense 'compulsive' chord successions of the later tonal music: successions of harmonies are much less fixed than in tonal music. Therefore, modal melodies often are (or: seem to be) 'freer' than melodies in tonal music of the Baroque and thereafter: there the 'freedom of the melodies' is always somewhat 'limited' because all contrapuntal elaborations must be combined with chord successions that make sense in a tonal context. This affects almost all aspects of polyphonic compositions, as the melodies are (at least partly) adapted to the harmonic context and the key(s).[23] And many tones of a melody can be regarded as ornamental: passing tones, neigbouring tones, anticipation or suspensions. The harmonies are as it were the solid columns, between and around which the melodies are played. In a tonal context such 'columns' are needed in cadences, sequences, modulations, and for the 'key design' - and we can say: in this way they form the specific tonal aspect of the composition.[24] The relative freedom of the melodies 'between and around the columns' can lead to highly complex and dissonant situations, even if the underlying harmony is relatively simple. In examples 13 and 14 I added harmonic reductions to to show some of the relationships beween melody and harmony:

Example 13
Bach, Praeludium in E major, WTC II - with harmonic reduction



21 See example 10: the augmentation of the subject appears in combination with the subject in contrary motion, and the motus rectus. See also the fugue in C minor, WTC II (example 65).
22 The modes (or: church modes) are: Dorian, Hypodorian, Phrygian, Hypophrygian, Lydian, Hypolydian, Mixolydian and Hypomixolydian. In the 16th century, the modes are often *numbered:* Dorian is mode 1, Hypophrygian mode 4, etc., until Hypomixolydian/mode 8. In 1550 Glareanus added Aeolian / Hypoaeolian and Ionian / Hypoionian to this system of eight modes. These new modes then are numbered modes 9 through 12.
23 Think for instance of a *tonal answer* in a Fugue. See from page 31.
24 Key design: See chapter: *key design and modulations.*

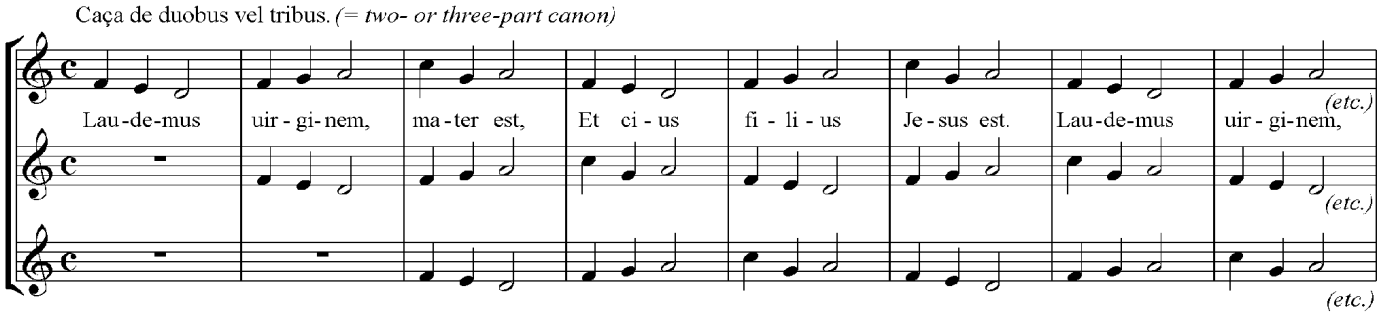
Example 14
Bach, Praeludium in F minor, WTC II - with harmonic reduction:



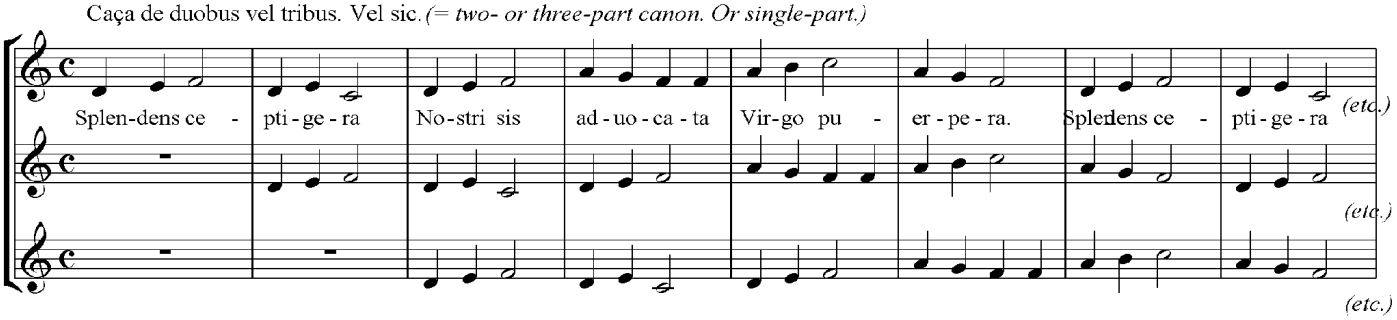
canons and inventions

In a simple canon two or more voices imitate each other from the beginning to the end; in the simplest form all voices follow each other at equal temporal distance (so that for instance every measure a new voice enters). In such simple canons entrances are mostly at the unison or the octave. Moreover, if (ad libitum) can be *repeated* we speak of perpetual canons or circle canons[25] - the simplest examples of these are songs like "Father Jacob" or “Row, row, row your Boat”. Sometimes one or several polyphonic techniques are used in canons: canons in contrary motion, in augmentation, or in diminution do exist. And sometimes imitations are not at the prime and/or octave, but at another interval (in particular at the fourth and the fifth). Some examples:[26]

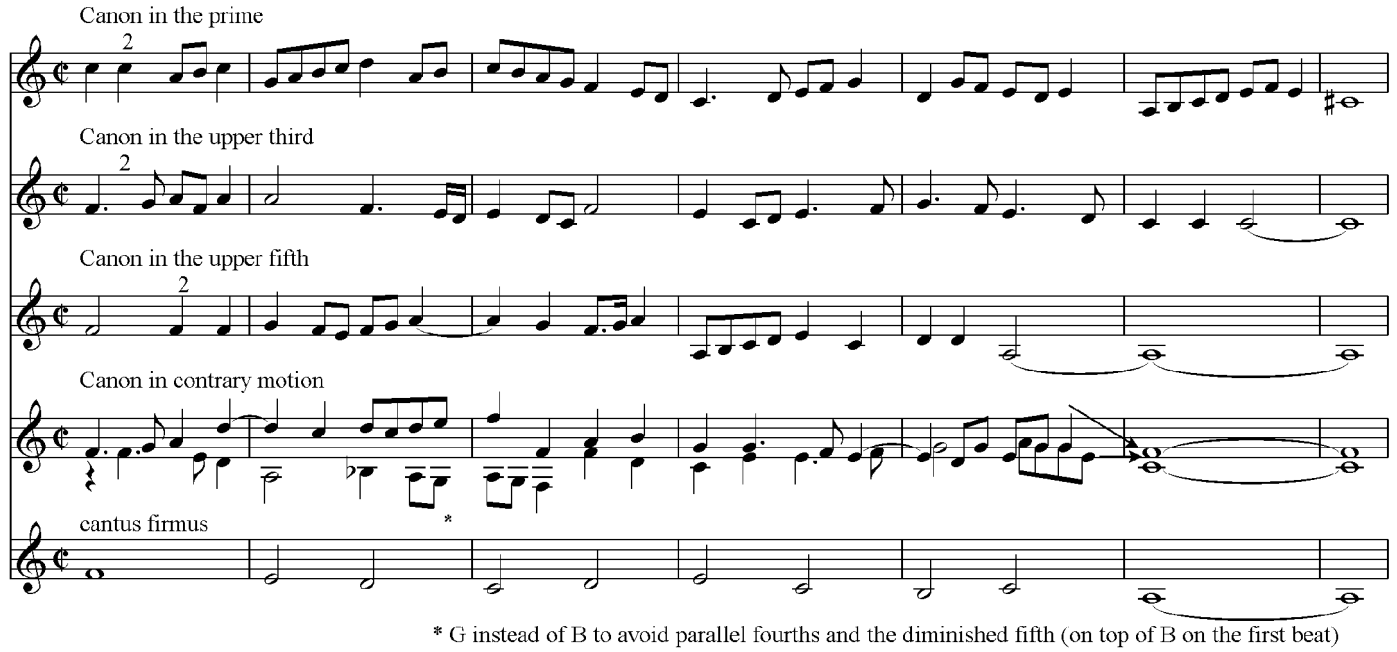
Example 15
Two 'Rondellus'-examples from W. Odington's *De speculatione musices* (ca. 1300).
In fact these examples are perpetual canons with imitations at the unison



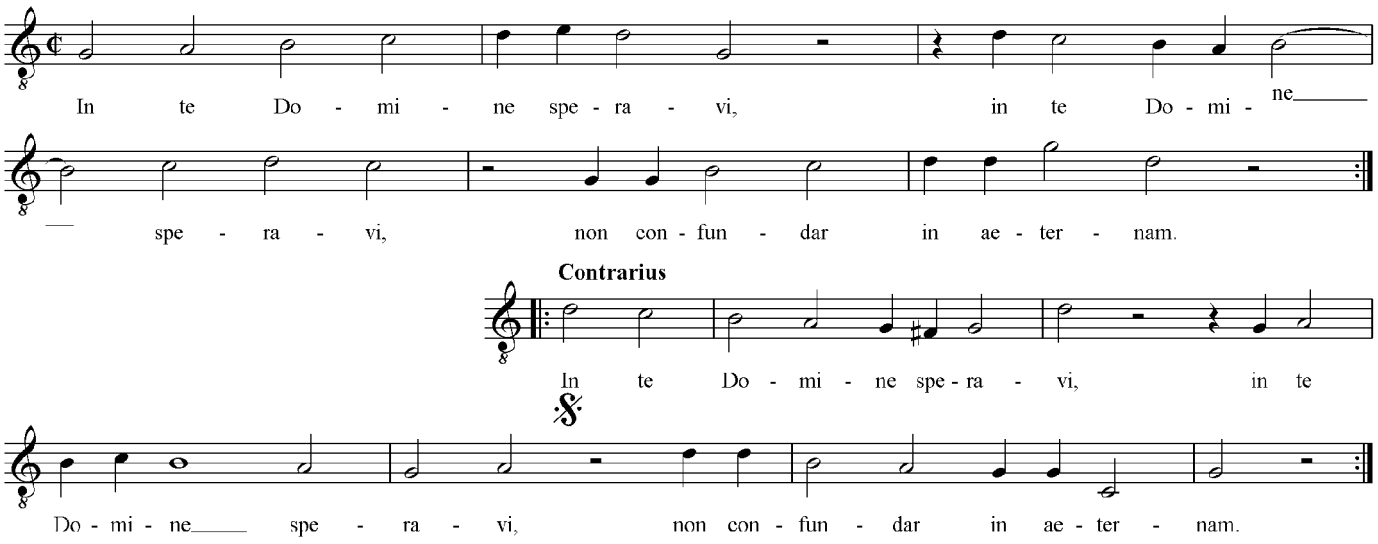
25 Also called: *Round.*
26 In Bach's *Kunst der Fuge* (Art of Fugue) more fine examples of canon-technique can be found.



Example 16
Four extempore-canons[27] on top of a cantus firmus,1592.
The cantus firmus on the lower stave can be combined with each of the canons on one of the four higher staves. Every combination results in a (another) three-part piece.

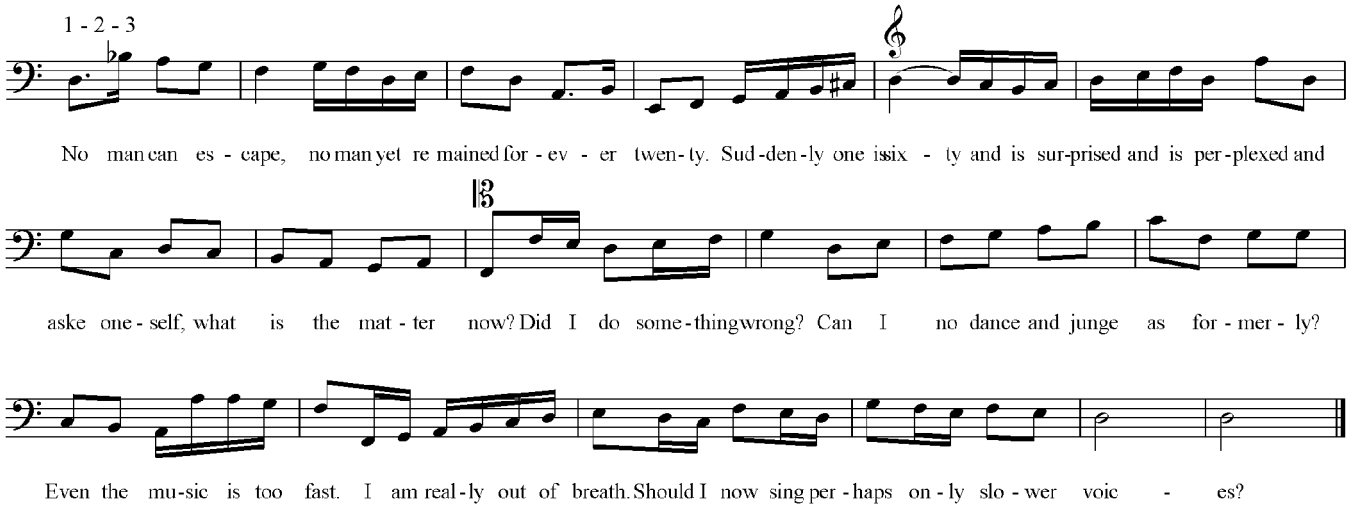


Example 17
S. Scheidt *Tabulatura nova I, Canon contrarius à 4 Voc. In 5.*
Canon in contrary motion

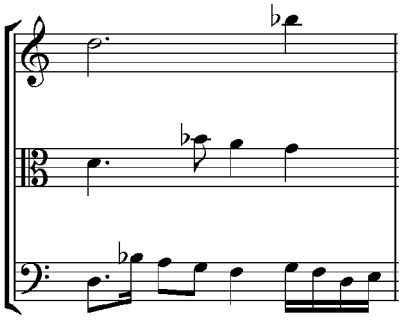


27 Extempore: improvised, made 'on the spot'.

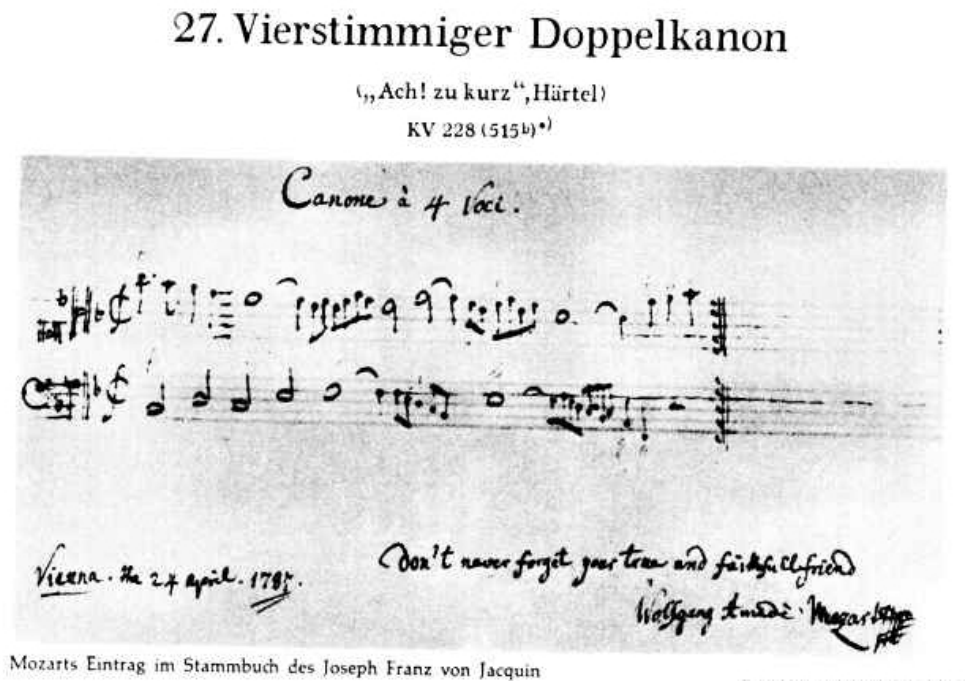
Example 18
Arnold Schoenberg, *Geburtagskanon für Carl Engel* (1943)
canon in augmentation (in double and quadruple note values)



the beginning of the Canon,
notated in a score:

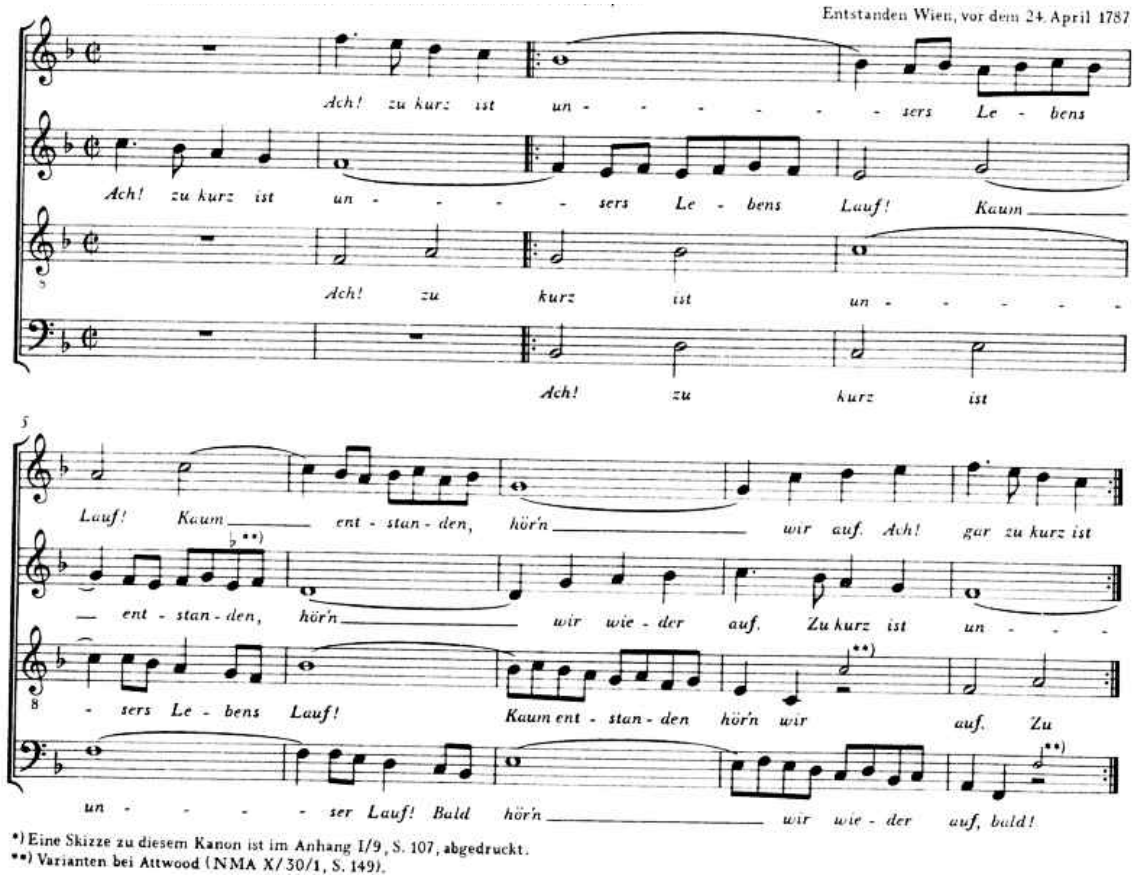


Example 19
Mozart, double canon for two times two voices (in Mozart's handwriting; score on the next page)[28]



Mozarts Eintrag im Stammbuch des Joseph Franz von Jacquin

28 The handwritten score is in the collection of the *Internationale Stiftung Mozarteum, Salzburg.*



The exact meaning of the term Invention (from Latin: *invenire: to discover, to invent; inventio: spontaneous idea)* has never been defined. It has been in use since the middle of the 16th century, and may be used

- as a replacement name for pieces of music whose generic name is not specified, and/or
- an to describe compositions of a novel, progressive character - i.e., compositions that do not fit established categories.[29]

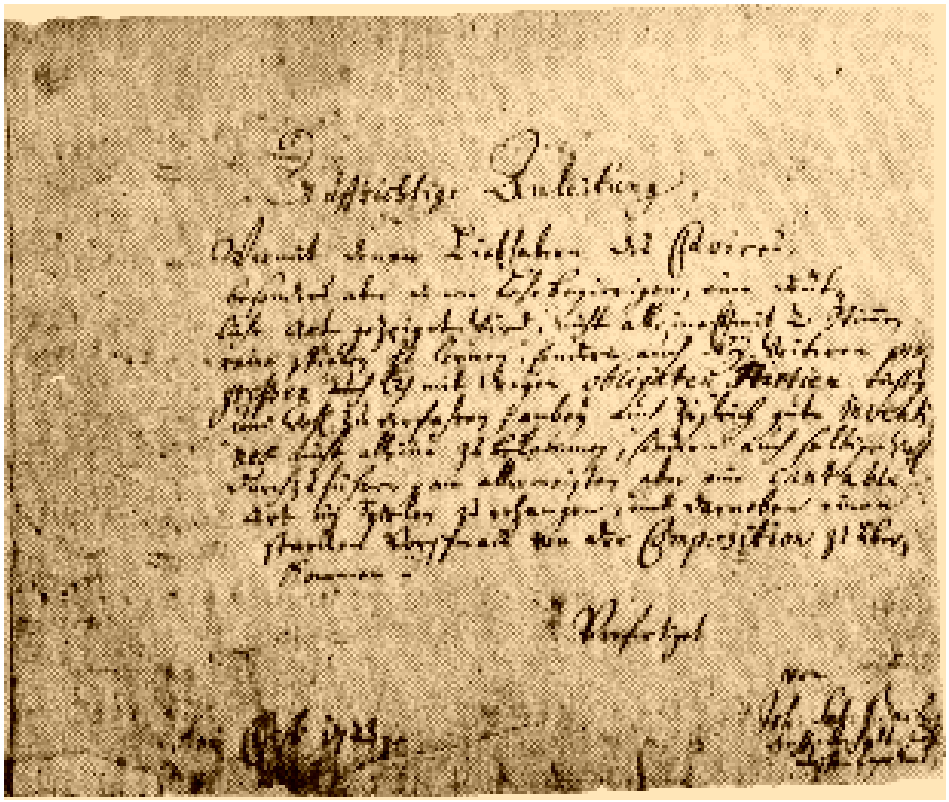
In a narrower sense, the term invention relates to pieces that are based on, and developed from a single musical idea (The *soggetto* or *subject).* So they consist of a basic (linear, often: motivic) idea *(= inventio)* and its subsequent elaboration *(elaboratio)*. The inventio can be processed in different ways, using for example imitations, sequences (repetition of the subject at a different pitch), transposition (the subject reappears at another pitch, or in another key), augmentation, diminution, or elimination (the subject is used only partially). When a voice has *another* melody (whereas the other voice has the theme simultaneously) we can speak of a counterpoint, or eventually: counterpart.

Usually inventions are two-part pieces., though Bach's three-part *Sinfonias* often are called: three-part inventions. Both these two-part and three-part pieces are put together by Bach himself as 'sets' of compositions.

29 The earliest-known use of the term in *Premier livre des inventions musicales* (1555; "First Book of Musical Inventions") by the Frenchman Clément Janequin clearly alludes to the composer's highly original programmatic chansons - secular French part-songs containing extramusical allusions (e.g., imitations of battle sounds and birdcalls). Similarly capricious or novel effects occur in John Dowland's *Invention for Two to Play upon One Lute* (1597); Lodovico da Viadana's *Cento concerti ecclesiastici…Nova inventione* (1602; "One-Hundred Ecclesiastical Concerti… New Invention"), the first sacred collection to require a basso continuo; and Antonio Vivaldi's *Il cimento dell'armonia e dell'invenzione*, Opus 8 (1720; "The Contest Between Harmony and Invention"), which contains, among others, a number of programmatic concerti. [quoted from: http://www.britannica.com/EBchecked/topic/292270/invention]

Originally, the two-voice pieces were titled: "Praeambulum" and the three-part pieces: "Fantasia" and were part of the *Klavierbüchlein* (piano booklet) for Wilhelm Friedemann Bach (1720). Bach re-notated the pieces in 1723 in a fair copy, changed their order, provided a new title, added many ornaments, did some corrections and changed the rhythm here and there.[30]

In his fair copy of 1723 Bach arranged the Inventions and Sinfonias in an order of ascending keys. In contrast with the Well-Tempered Clavier, no at that time uncommon keys are used. These pieces are not primarely meant to be publicly performed; the are rather composed as '*Etudes'* for players, and as exemplary instructions for composing. They contain numerous examples of contrapuntal techniques: In each Invention a specific musical idea (inventio) is processed (elaboratio) in a polyphonic manner. This musical idea generally is a short, initial motif.[31]



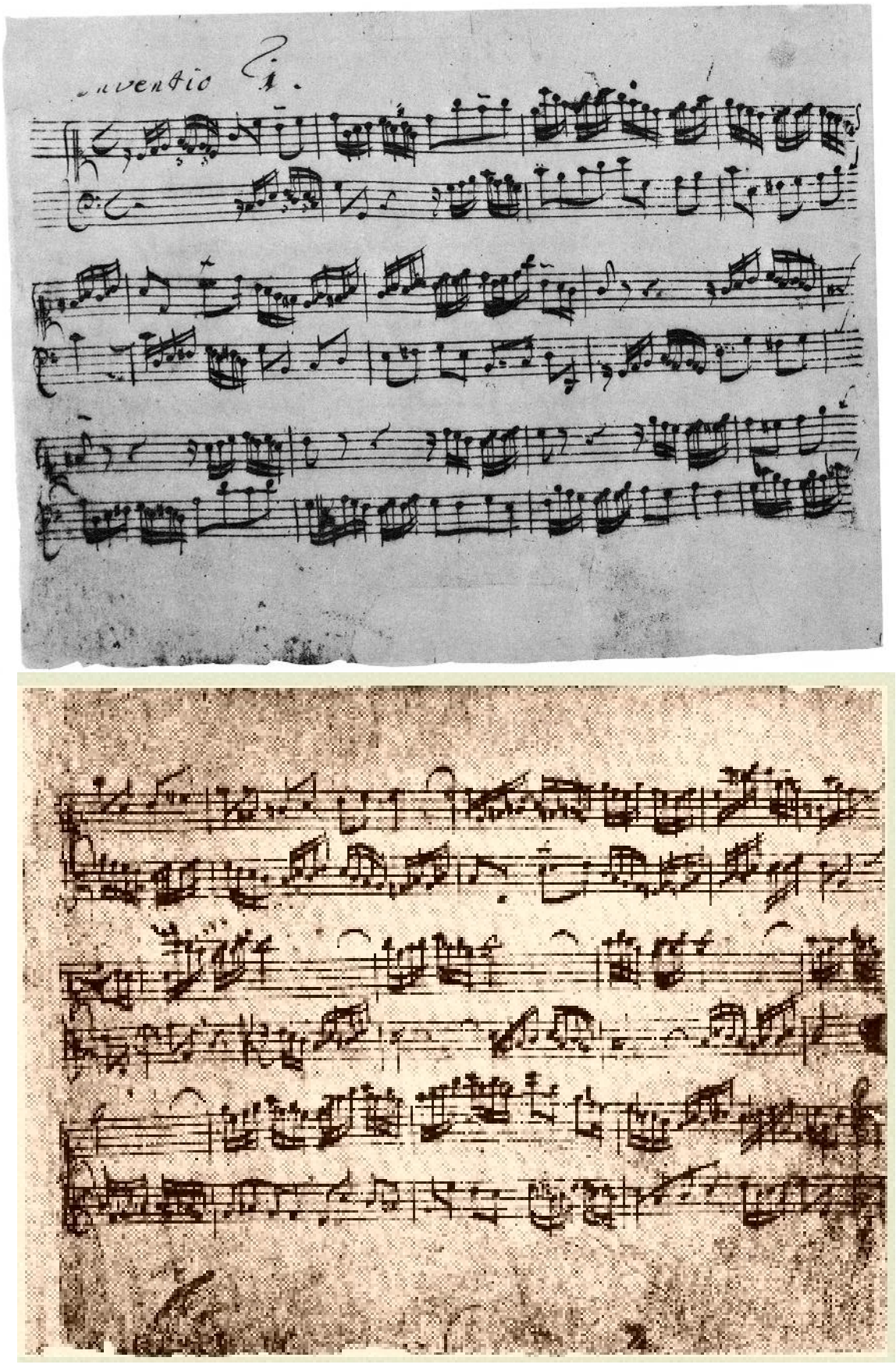
In the 1723 version Bach wrote the following as title and 'instruction':

Auffrichtige Anleitung,
Wormit denen Liebhabern des Clavires,
besonders aber denen Lehrbegierigen, eine deütliche Art gezeiget wird, nicht alleine (1) mit 2 Stimen reine spielen zu lernen, sondern auch bey weiteren progreßen auch (2) mit dreyen obligaten Partien richtig und wohl zu verfahren, anbey auch zugleich gute inventiones nicht alleine zu bekommen, sondern auch selbige wohl durchzuführen, am allermeisten aber eine cantable Art im Spielen zu erlangen, und darneben einen starcken Vorschmack von der Composition zu überkommen.
Verfertiget
Anno Christi 1723
von Joh: Seb: Bach.
Hochfürstlich Anhalt-Cöthenischen Capellmeister

[Honest Instruction,
by which amateurs of the keyboard, especially, however, those desirous of learning , are shown a clear way not only (1) of learning to play cleanly in two voices, but also, after further progress, (2) to handle three *obligato* parts correctly and well; and along with this not only to obtain good inventions (ideas), but developing the same well; above all, however, to achieve a cantabile style in playing and at the same time acquire a strong foretaste of composition.
Produced
Anno Christi 1723
by Joh. Seb: Bach:
Capellmeister to his Serene Highness the Prince of Anhalt-Cöthen]

On the next page you see the first (two-part) Invention in C major, in Bach's handwriting. On the following two pages (example 20) you find an annotated score of the same piece.

30 Two more copies exist, one of an unknown student of Bach (probably from around 1723), and a copy of Heinrich Nicolaus Gerber from 1725. Both have rich ornamentation.
31 See the schematic analysis of Invention 1 on page 22/23.

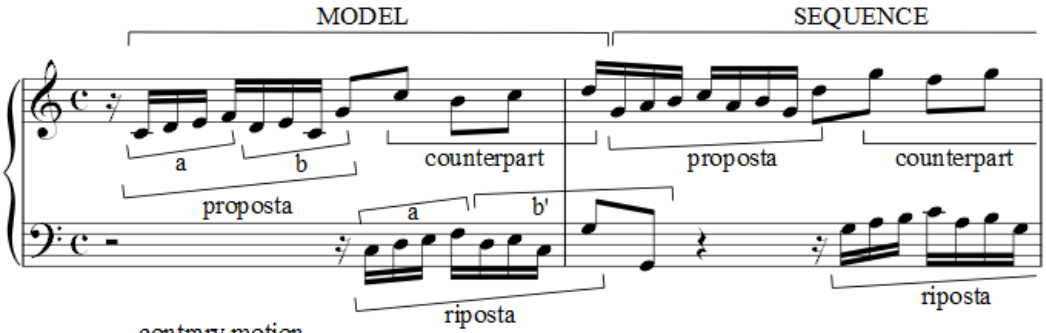


- first Invention, in C major, in Bach's own handwriting -

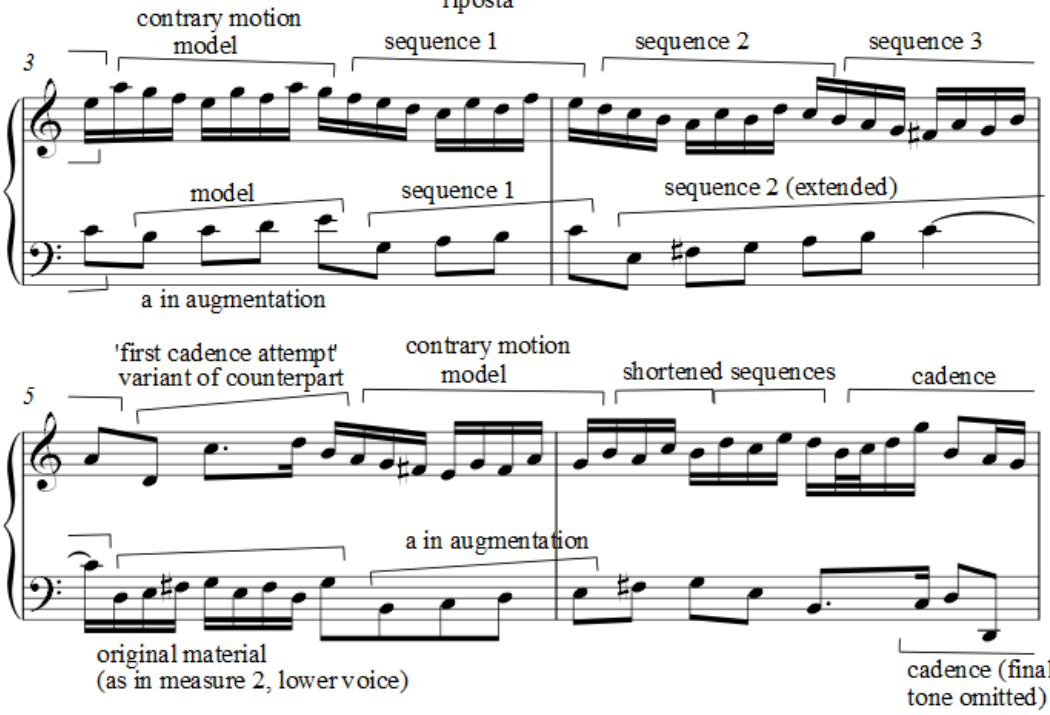
Example 20 Schematic analysis of Bach's first two-part Invention (in C major) – see next page.

Example 20 Schematic analysis of Bach's first two-part Invention (in C major)

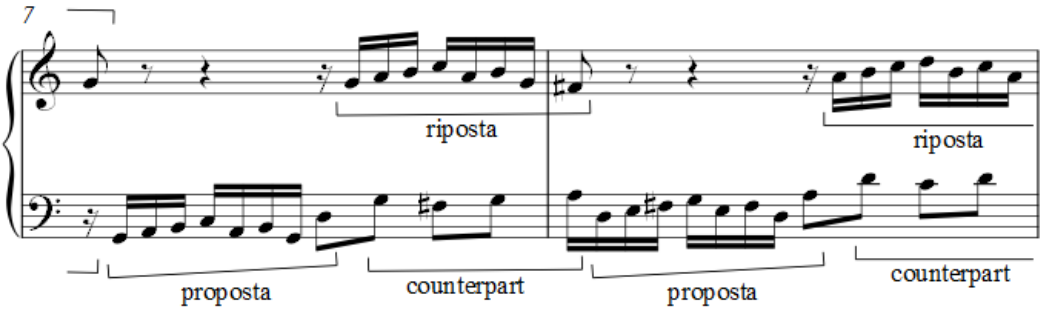
Measures 1 - 3: introduction of the melodic material, in the form of a sequential pattern: model + sequence



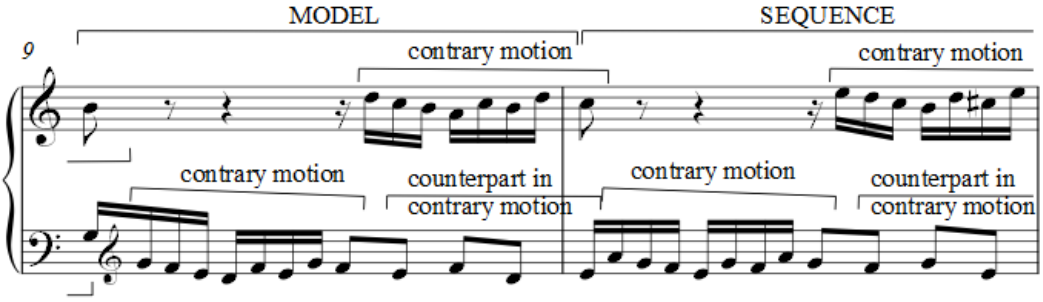
Measures 3 - 7: first elaboration of the initial material, and modulation to G major.
We can distnguish two *phases:*
measures 3 - 5 / third beat, and measures 5 / third beat until 7 / first beat.
Alternatively, the 'division line' between these phases could be drawn right after the *first* beat of measure 5.



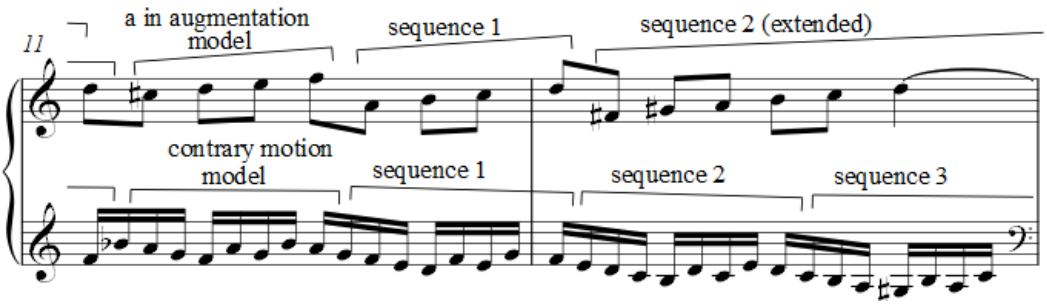
Measures 7 - 9: same pattern as in measures 1-3, with excnanged voices, and noiw in G major



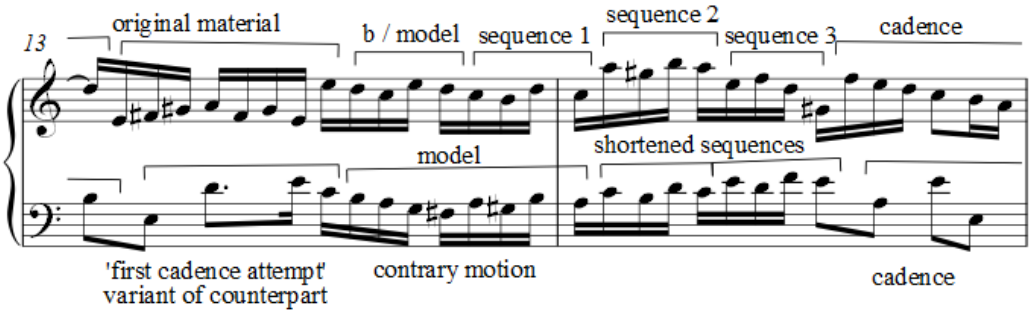
We can label measures 9 and 10 (until the first beat of 11) as (non-literal) repetition of measures 7/8, in *contrary motion.*
We can say that we therefore hear a group of 4 measures (7 - 10) - twice as long as the group in the very beginning of the piece.
Measure 10 is a sequence of the preceding measure (second up), thus creating the modulation to D minor.



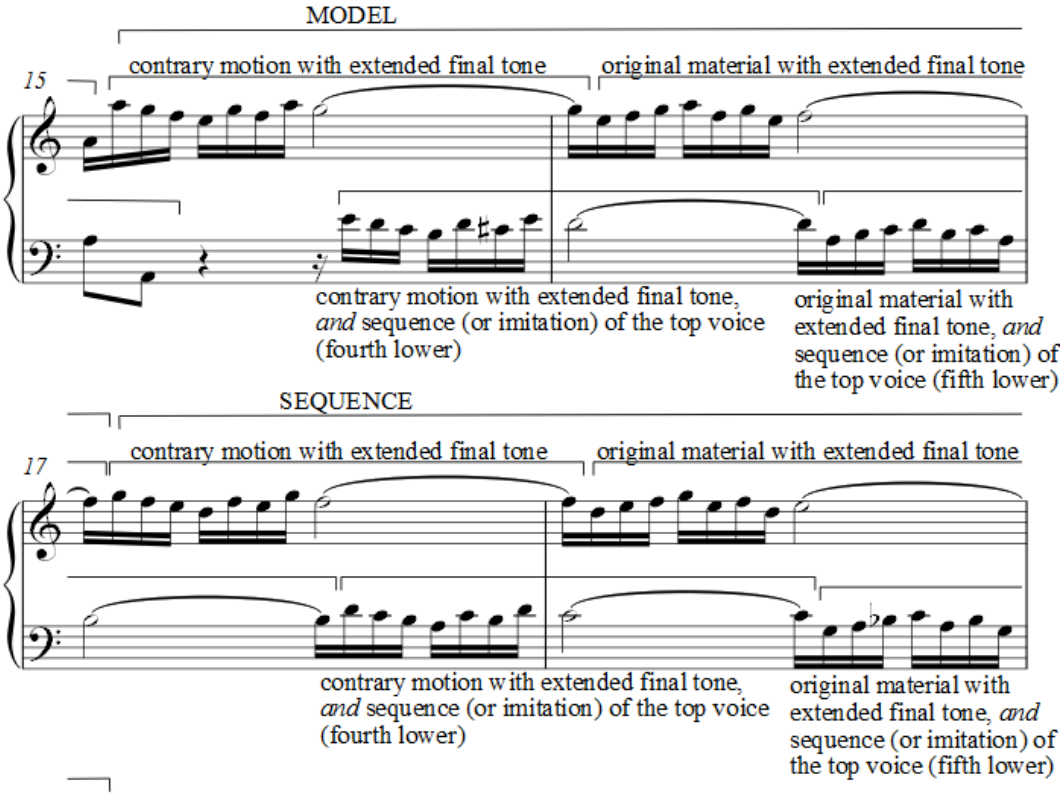
Measures 11 - 15 are similar to 3 - 7. The voices are exchanged, and the close is different. We can divide these measures as follows:



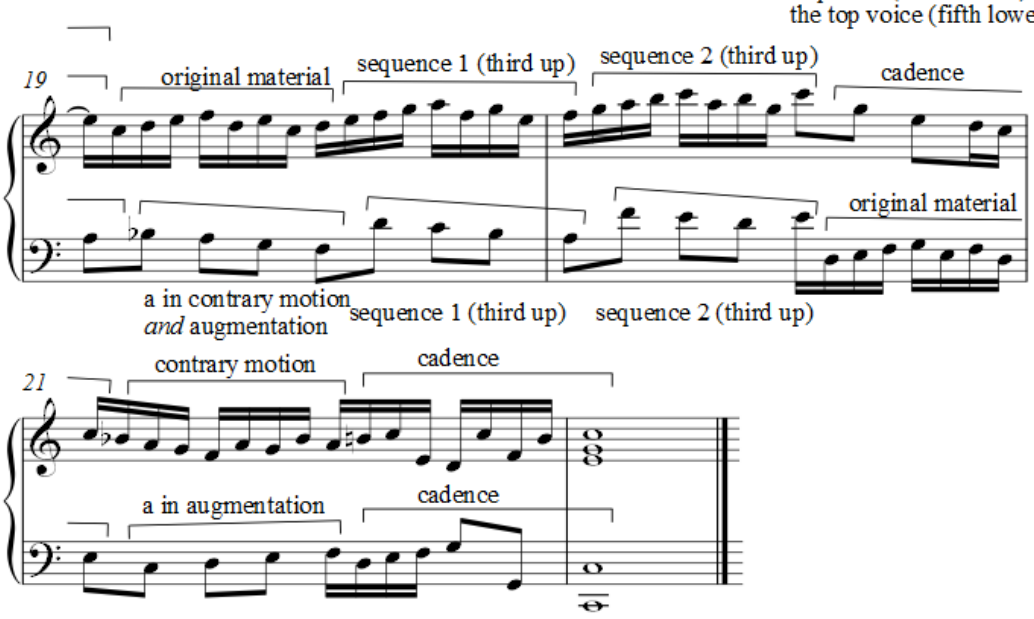
* 11 - 13 / third beat
* 13 / third beat -15 /first beat
We modulate to A minor. From measure 13 the top voice differs from the lower voice in 5 - 7 (which could be a valid reason to say that the division is right after the *first* beat of measure 13).



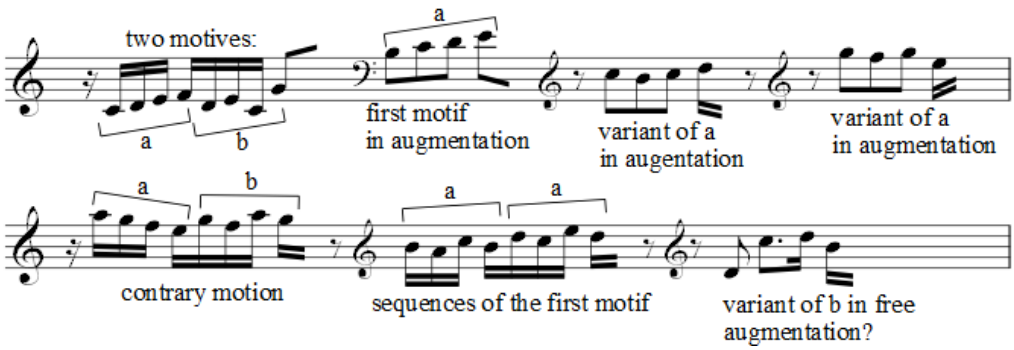
Measures 15 - 19 /first beat: the first material reappears in its original form *and* in contrasy motion. The final tone is getting extended each time - reason why these measures strongly ressemble measures 1 - 3. By combining the original form and the contrary motion in both voices a model and a sequence of two measures each is created.

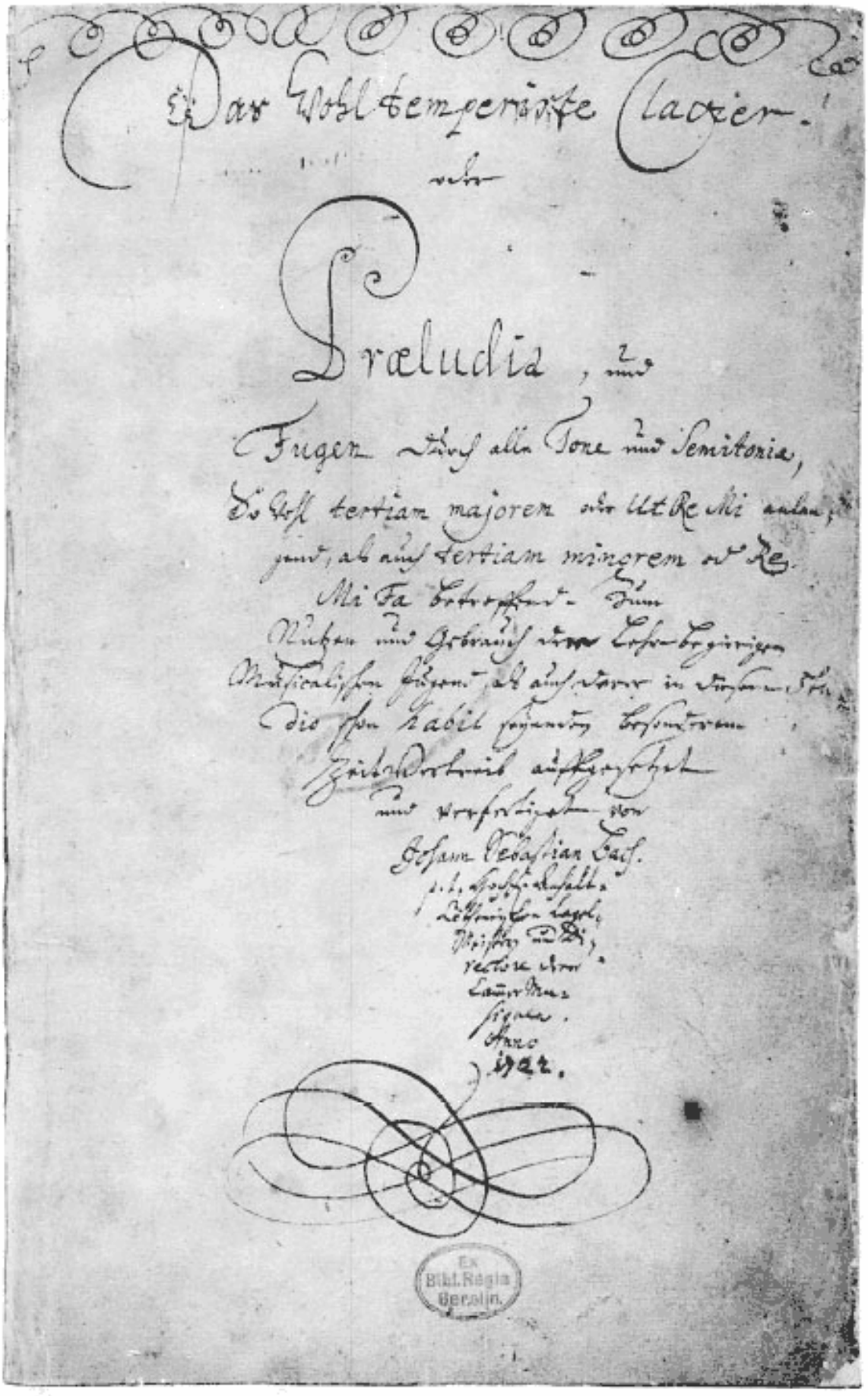


Measures 19 - 22, the final section of the piece, are *contrary motion* of the section from measure 3.



In fact *everything* in this piece is derived from measure 1, first to third beat:





- title page of the Well-Tempered Clavier, in Bach's own handwriting -

FUGUE

the Well-Tempered Clavier

For my description of fugues and fugal techniques I mainly use examples from Bach's Well-Tempered Clavier. Of course, there are many other works of Bach in which the fugue, or fugues play a key role. The first works that come into mind are maybe the Art of Fugue *(Kunst der Fuge)* or the Organ Fugues. But we can also think of the many examples of fugues or fugue-like passages in for example the Masses and Cantatas. On the other hand, the Well-Tempered Clavier was and is over all other of Bach's works *the* great example for all subsequent composers who have written fugues. Therefore, before going to pretty 'technical' aspects of fugal composition, some general information about the Well-Tempered Clavier:[32]

The Well-Tempered Clavier (BWV 846-893, German: *Das Wohltemperierte Klavier)* is a collection of Preludes and Fugues for keyboard in two parts. Bach presented Part I in 1722; Part II was finished around 1740/42. Both parts of the Well-Tempered Clavier contain 48 pieces, arranged in pairs; each pair consists of a Prelude and a Fugue. The order of the pairs is determined by the keys, and is chromatically ascending, starting from C; the minor keys always follow the major keys, so: C major – C minor – C# major – C# minor, etc. In the long title of the first part of the Well-Tempered Clavier Bach[33] described the at the time unusual terms *major* and *minor* with the Italian names of the first three notes of a major scale (Ut - Re - Mi) and minor scale (Re - Mi - Fa) respectively, ie the intervals of a major (Dur-) and minor (Moll-) third:

> *Das Wohltemperirte Clavier oder Præludia, und Fugen durch alle Tone und Semitonia, so wohl tertiam majorem oder Ut Re Mi anlangend, als auch tertiam minorem oder Re Mi Fa betreffend. Zum Nutzen und Gebrauch der Lehrbegierigen Musicalischen Jugend, als auch derer in diesem studio schon habil seyenden besonderem Zeitvertreib auffgesetzet und verfertiget von Johann Sebastian Bach. p. t: Hochfürstlich Anhalt-Cöthenischen Capel-Meistern und Directore derer Camer Musiquen. Anno 1722.*
>
> [The Well-Tempered Clavier, or piano preludes and fugues through all the tones and semitones, concerning major keys or Ut Re Mi as well as minor keys or Re Mi Fa. For the profit and use of musical youth desirous of learning, and especially for the pastime of those already skilled in this study invented (and/or: collected/organized) and manufactured by Johann Sebastian Bach...]

With the term *'piano',* which in the Baroque includes all keyboard instruments, Bach left the choice of instrument for the performance deliberately open. The work is not for organ though, because Bach did not write or designate a separate pedal voice; and the organs of his time were tuned meantone. The compositional technique of many preludes and fugues of the work suggests that it was intended for harpsichord or clavichord. It seems that Bach had a preference for the clavichord.[34] Nowadays the work is performed mostly either on harpsichord or on a modern piano.

The term *"well-tempered"* refers to the tuning invented in 1681 by Andreas Werckmeister, which he called the *well-tempered tuning*.[35] In this tuning, the 'wolf fifth' of the meantone tuning was defused at

32 For this part of the text I used the English and German wikipedia: http://en.wikipedia.org/wiki/The_Well-Tempered_Clavier and http://de.wikipedia.org/wiki/Das_Wohltemperierte_Klavier. The German wiki offers a better, more informative and more accurate text.

33 Bach's own title is on the title page of the autograph from 1722, see the image in this page.

34 According to a statement by Johann Nikolaus Forkel. On the other hand, in his obituary about Bach (1754) he states: "Die Clavicymbale wußte er, in der Stimmung, so rein und richtig zu temperiren, daß alle Tonarten schön und gefällig klangen." *[The Clavicymbals he could tune so pure and right in this tuning that all keys sounded beautiful and pleasing.]* See: Hans-Joachim Schulze: *Johann Sebastian Bach: Leben und Werk in Dokumenten.* Deutscher Taschenbuch Verlag, 1984; page 194

35 The English wikipedia offers a lot of informative articles, mostly fairly accurate, on the varius tuning systems. Loof for terms like ëqual temperament, 'well-tempered'etc. You have to understand some Math. for most texts though.

the expense of pure thirds, to enable playing in all keys. In the at the time still commonly used mean-tone tuning keys are more out of tune, the further they are away from C major, so that composers avoided such remote keys. In 1710 Johann David Heinichen introduced the circle of fifths, which brought the 24 major and minor keys in a common tonal system, and thus made their relationships definable. But composers before Bach hardly made any practical use of these innovations, and composed only rarely in the previously avoided keys, so that Johann Mattheson in 1717 complained : "Obgleich alle Claves nunmehr per Temperaturam so eingerichtet werden können, daß man sie diatonicé, chromaticé & enharmonicè sehr wohl gebrauchen mag, eine wahrhaftige demonstratio fehlt." [Although all keys *(=claves)* can now be set by tuning so that they can be used very well diatonic, chromatic & enharmonically, a true demonstration is still missing]

Through the Well-Tempered Clavier Bach wanted to practically demonstrate the suitability of the well-tempered tuning for composing and playing in all keys. In writing this work, Bach contributed significantly to the enforcement of the uncommon keys. Which of the contemporary well-tempered tunings Bach actually used, however, is unknown. In the past it has been assumed that Bach intended equal temperament, the standard modern keyboard tuning which became popular after Bach's death, but modern scholars suggest instead a form of well temperament.[36] There is debate whether Bach meant a range of similar temperaments, perhaps even altered slightly in practice from piece to piece, or a single specific "well-tempered" solution for all purposes.

Even before the Well-Tempered Clavier there were various forms of collections of Preludes and Fugues. In the North German tradition, which Bach knew primarily through its principal representive Dietrich Buxtehude, improvisatory, toccata-like sections with long, complicated constructions alternate with imitative or fugal sections. In the southern German tradition often a single Prelude formed the introduction of a collection of short fugues ("Versetten") with religious objective. The first collection of Preludes and Fugues, in which single Fugues are consistently paired with single Preludes is the collection of organ compositions “Ariadne Musica” by Johann Caspar Ferdinand Fischer (1702: the reprint of 1715 is the only preserved). Also, by extension of the hitherto usual keys (20 keys are used in total) this points forward to the Well-Tempered Clavier.

Apart from Fischer, there were some occasional experiments to make all keys used compositionally before the Well-Tempered Clavier. Johann Jacob Froberger composed a (now-lost) Canzone through all 12 keys [!]; organist Johann Mattheson's Exemplarische Organisten-Probe (1719) contains figured bass exercises without artistic ambition, in all keys.

The long title of the first part of Bach's Well-Tempered Clavier formulates in a precise way the *educational purpose* of the collection as a systematic work for music students (beginners and advanced students.[37] This was also the purpose of two other of Bach's works: the 1722/23 newly released Composition cycles “Auffrichtige Anleitung“ [sincere instructions] and the “Orgelbüchlein“ [organ booklet]. So, he counted the Well-Tempered Clavier to those instrumental works, which served primarily the training of young musicians. This training was one of the outstanding obligations of the cantor of St. Thomas in Leipzig - the office to which Bach in 1722 applied. The first part of the Well-Tempered Clavier, together with its long title, was therefore logically part of Bach's application for this position.[38]

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36 See: Bach, J. S. (2004). Palmer, Willard A., ed. J. S. Bach: The Well-Tempered Clavier. Los Angeles, CA: Alfred Music Publishing. p. 4.

37 See the quotation of the Foreword on page 25.

38 The complete fair copy of the autograph of the *first part* - with the famous title page (Autograph A of the New Bach Edition) - is of the year 1722. It is likely, however , that many pieces have been composed earlier. For example, there is a copy of some pieces from the Well- Tempered Clavier, made around 1800 by Johann Nikolaus Forkel. This copy nowadays is classified as a set of early versions. And, after 1722 Bach himself has repeatedly made minor changes to “autograph A” itself. The 1722 version therefore forms an only provisional final version of the first part.
The situation around the *second part* is more complex, because no complete autograph is preserved. There exist a copy of Bach 's student Johann Christoph Altnickol (1744) and an incompletely preserved original handwriting (so-called

fugues in general

Fugues are polyphonic vocal or instrumental compositions, in which a subject (sometimes called: theme)[39] appears successively in all voices in certain patterns. In other words: Fugues always contain imitations. Even the term *Fugue* is derived from the idea of imitation: the Latin word *fuga* means flight; in a fugue, the voices 'flee from each other'. As a rule (especially from Bach) fugues only have a single subject, and therefore can be labeled as monothematic. Unlike in for example Sonata forms or movements of a Suite, it is almost impossible to give a general description of 'the' form of 'the' fugue. In fact, 'fugue' is rather a specific way of writing imitations than a definable musical form. On the other hand, in shorter fugues in the Well-Tempered Clavier we often see (something close to) a ternary form, which (in very general terms) consists of: initial section – middle, often 'developmental' section – final, concluding section. Even longer fugues often show this division, albeit that often more than a single developmental section stands between the initial and final sections. It regularly happens that a certain fugue can not be described adequately in these terms. It then often is a better idea to use other terms, invent adequate descriptions, or to describe the form in rather 'neutral' terms (for example: A- B- C-section, or similar). It is in such cases certainly not a good idea to force ourselves to apply certain terminology, or to use preconceived schemes.

Even if it is difficult to describe the shape of a fugue in general terms: In the first part of most fugues the voices enter one by one, all using the same subject. This part of the fugue is called exposition;[40] this exposition either forms the *complete* initial section of the fugue, or its *first part.*

In the course of a fugue , the subject is often undergoing one or more contrapuntal operations (or: polyphonic techniques) like contrary motion (or even sometimes: inversion), augmentation, diminution, or stretto.[41] Sometimes the subject is varied in the course of a fugue.[42] Normally such elaborations and techniques are not yet used during the exposition.

subject and answer / dux and comes

When designing the subject of a fugue the composer must, among other things, take into account that it will be used, and has to be useable, in many different situations. For example, it must be possible to let it appear in an upper, middle and lower voice; often it must be composed so that it sounds well in both major and minor keys (as the fugue may modulate from major to minor key(s) or vice versa); it may be necessary to design it so that it can be subjected to contrapuntal operations like stretto, augmentation, diminution etc.[43] Often a *portion* of the subject is used in *voices* that do not deploy the complete subject at that time, and/or at *places* where the complete subject is absent[44]. The subject

London autograph), which is believed is from 1740 /1742. It is assumed that Bach in the second part reverted to older compositions more often than in the first part. The arrangement of this later collection as second part of the Well-Tempered Clavier goes back to the copy of Altnickol, in which this precise title is used. We can assume that Bach himself probably described the work in the same way.

39 As the term *'theme'* is also commonly used the describe very different phenomena, I prefer to rather avoid it - even though it is in languages other than English normal to speak of the *theme* of a fugue, rather than *subject* (in Dutch and German for example: Thema).

40 'Exposition' in this context has a very different meaning than for example in Sonata forms: a fugal exposition is not so much a formal section, but rather: the presentation of the subject in all voices.

41 See chapter: *Some general observations about polyphony/polyphonic techniques.* Stretto: see chapter: *further, developmental sections in fugues; application of stretti and other 'contrapuntal techniques (contrary motion, augmentation and diminution); episodes*

42 See for example the fugues in C minor, WTC II (examples 59 and 65) and in D# minor, WTC I (example 10).

43 See chapter: *Some general observations about polyphony/polyphonic techniques.* Stretto: see chapter: *further, developmental sections in fugues; application of stretti and other 'contrapuntal techniques (contrary motion, augmentation and diminution); episodes*

44 Namely in *interludes,* see page 43/44, and in *episodes,* see page 74-77.

should 'provide' compositional materials for such instances as well. Generally speaking, the composer must, already when designing the subject, take into account how he wants to (re-)use it in the course of the whole fugue.
For the subjects in Bach's fugues, in the WTC and in other works, some general principles apply:

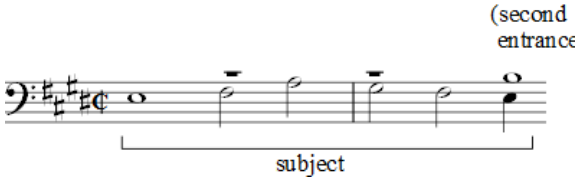
- the first tone of a subject is almost always the *root* or the *fifth* of the home key[45]
- the subject can remain in the home key, or modulate to the dominant key, other modulations do not occur. When the fugue is in a *minor* key, a modulating subject modulates to the dominant *minor* key (for example: modulation to E minor as the piece is in A minor).[46]
- the subject ends on one of the tones of the tonic triad; the *third* as final tone is most common; subjects end less often on the *root,* an ending on the *fifth* is relatively rare (except in modulating subjects, see next point). The final tone of the subject is most commonly on a (relatively) strong beat.
- modulating subjects mostly end on the root (sometimes: the third) of the dominant key (or, in other words, on the fifth of the home key).
- the ambitus (range) of most subjects is relatively small: as a rule it is no more than a sixth or a seventh, often even less; an ambitus of an octave or more is relatively rare .
- most subjects are harmonically not very complex; many subject do even little more than 'describing' or 'encircling' the tonic triad. In other words, often 1^, 3^ and 5^ form the main tones of the subject; in some other subjects we encounter simple cadences like I - IV - V - I, or for example a sequence of descending fifths.[47] Some subject are (partly) chromatic, but usually such chromaticism is nevertheless applied within a diatonic framework of 1^ 3^ and 5^.[48]
- In the WTC we can roughly distinguish two types of subjects: on the one hand *'pure linear' subjects,* in which stepwise motion prevails, and on the other hand subjects that are characterized by the use of *motifs and / or sequences*, or *arpeggiated chords;* such subjects mostly contain more leaps. When subjects contain leaps, we often find *large-scale stepwise progression.*[49] Most subjects are structured asymmetrically.[50]
- At the end of the subject there is normally no (melodic) closure; the first melodic closure (in the voice that had the first entrance of the subject) usually is later (during, or at the end of the second entrance, and sometimes even later[51]). In most fugues it makes sense to distinguish between the 'technical' end of the subject (which is normally at the second entrance of the subject, or shortly before or after), and the 'musical' end of the (first) melody in the voice that had the first entrance.

Below you see some subjects of fugues (most of them from the WTC), with a short description of their structure:

45 In the two exceptions in the WTC (both in the second book: fugues in F# major and Bb major) the first tones can be regarded as embellishments of respectively the root and fifth of the home key. See example 43 for the beginning of the fugue in Bb major, WTC II.
46 See the Fugue from Praeludium and Fugue in A minor, BWV 894 in example 24.
47 See the Fugue from Praeludium and Fugue in A minor, BWV 894 in example 24.
48 The subject of the Fugue in D minor, WTC I clearly has the '1^-3^-5^ – framework' as background (see example 29). The Fugue in F minor, WTC I shows a chromatic descend from 5^ to 1^ (C → F) - see example 32. More complex chromaticism is seldom, but occurs now and then: See the extreme chromaticism in the Fugue in B minor, WTC I (Example 35), and - somewhat less compex - in the Fugue from the Chromatic Phantasy and Fugue (Example 39).
49 German: *übergeordneter Sekundgang.* Clear examples are the Fugues in C minor, WTC I (example 22) and in F# minor, WTC I (example 23).
50 The distinction I make here between on the one hand 'linear' subjects, and subjects using sequences and/or motives on the other hand is somewhat artificial; quite some subjects use both; see the Fugues in F minor, WTC II (example 25) and in D# minor, WTC I (example 26).
51 See for instance Fugue in Bb minor, WTC I (Example 48): the first melodic close in the soprano is only in measure 17!

Example 21
Fugue in E major, WTC II

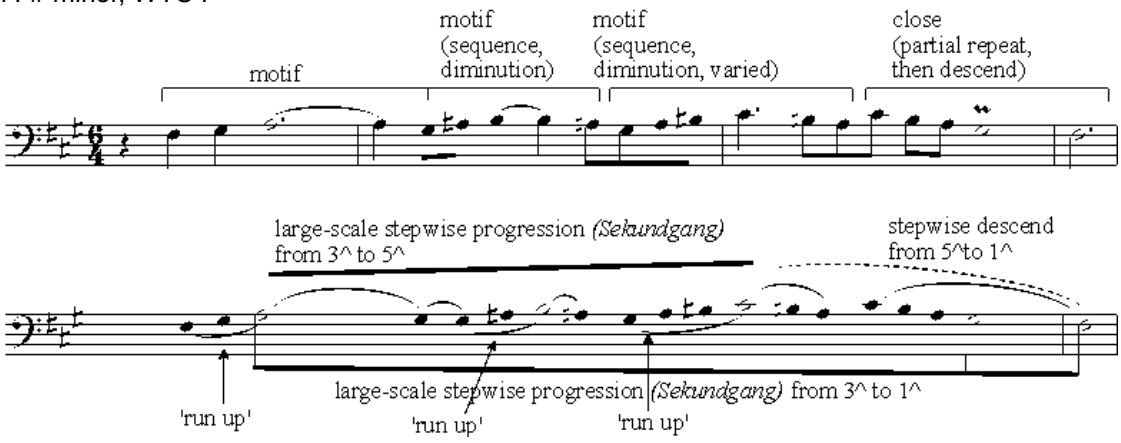
This is a *'pure linear'* subject; the small ambitus and the simple rhythm in large note values make that it is strongly reminiscent of melodies of the Renaissance.[52]



Example 22
Fugue in C minor,WTC I

subject characterized by *motives;* with clearly *large-scale stepwise progression*[53] between the main tones.

Example 23
Fugue in F# minor, WTC I



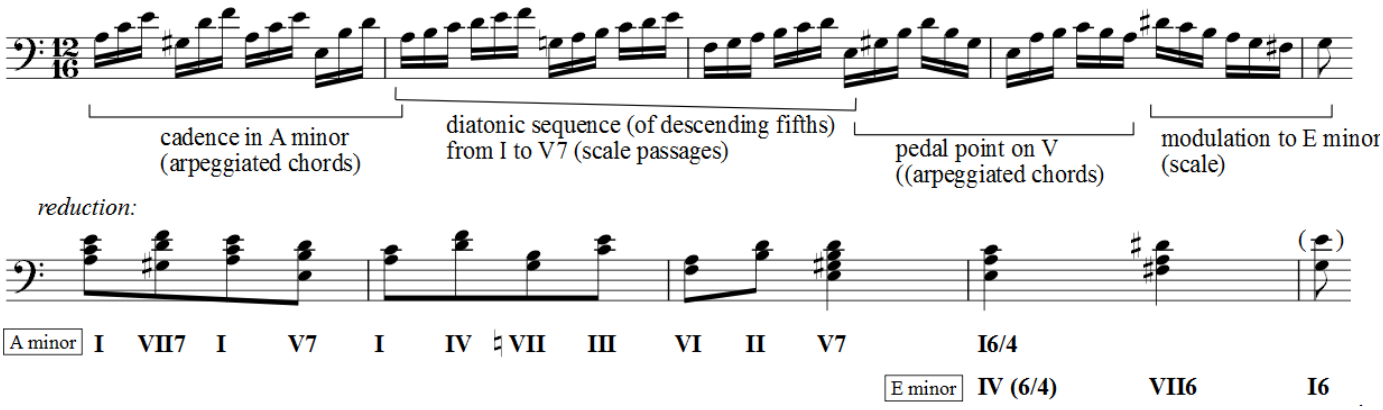
The structure of this subject is clearly determined by *large-scale stepwise progression.* The subject has a clear motivic structure; the main tones are reached and rurrounded by stepwise motion.

52 See also the comments on the exposition of this Fugue on page 48/49, and on its counterexposition on page 63 and 65. The subject of the fugue in C# minor, WTC I is similar (see example 28).

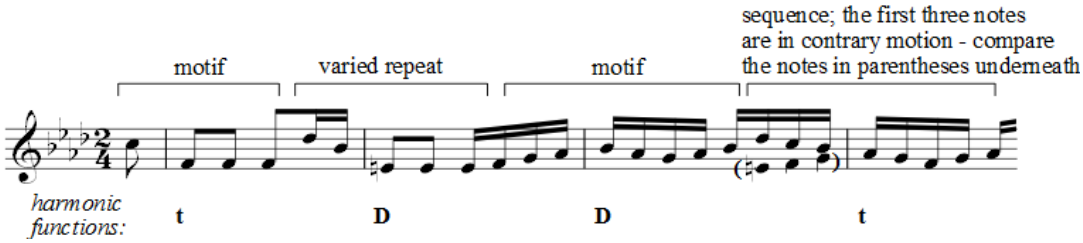
53 German: *Sekundgang,* or more precise: *Übergeordnter Sekundgang.*

Example 24
Fugue from Praeludium and Fugue in A minor, BWV 894

This subject is almost entirely determined by the underlying harmony (as it almost completely consists of arpeggiated chords). From the second measure we see a diatonic sequence of descending fifths: I IV VIIeol III IV VI II V . In measure 4 we modulate to the minor dominant key, E minor.



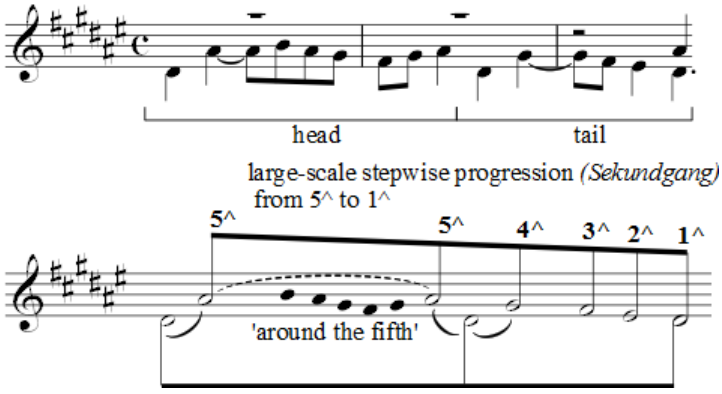
Example 25
Fugue in F minor, WTC II



This subject has a distinct "head" and "tail", which however are harmonically similar, because they are each other's mirror. the head moves from tonic to dominant, the tail moves back from dominant to tonic. Moreover, both the head and the tail show varied repetition of a pattern:

Example 26
Fugue in D# minor, WTC I

"*linear*' subject with some characteristic leaps. In particular in the the later phases of this very complex fugue those leaps facilitate the recognition of the subject.[54]



After the initial entrance of the subject a second entrance follows, *in another voice,* thus forming the first imitation of the subject. This second entrance can be labeled: the answer of the subject (or simply: the answer). As in a higher voice is imitated, the answer is always a fifth higher than the first entrance of the subject; as the imitation is in a lower voice, the answer is always a fourth lower than the first entrance: Imitation at the higher fifth or lower fourth respectively. Usually the answer is in an adjacent voice (eg first entrance in the alto, second in soprano or tenor).

54 See also the exerpts from this fugue in examples 10 and 56. The subject is, amongst others, used in stretti, and in augmentation.

In the old Italian music theory, a first entrance often was labeled *guida* or *proposta;* the answer then was named *conseguente, seguente* or *riposta*. Instead of speaking of 'subject' and 'answer', we can use Latin terms: the first entrance of the subject is the dux (= leader, plural: duces), the second entrance (the answer) comes (= companion, plural: comites)[55]. In principle we label then - when possible: throughout a fugue - those entrances 'dux' that are at the same pitch, or an octave lower or higher, as the first entrance; entrances that are at the same pitch, or an octave higher or lower as the first comes, we label 'comes'. Often it is possible to distinguish dux- and comes-entrances in the course of a fugue, sometimes the distinction fades during the piece (especially in modulatory passages). In expositions of fugues[56] normally a *second dux* follows after the comes entrance (one octave higher or lower than the first dux). In four-part fugues, after the second dux usually a second comes follows, in the voice that has the last entrance (an octave lower or higher than the first comes).

It is not a bad idea to use the older terms *proposta* and *riposta* when speaking of polyphonic compositions in which imitations are used that differ from the fugal imitations in fifths and fourths, or in which the imitation technique clearly differs from the technique used in fugues (like often the case in music of the Renaissance). Meanwhile, I prefer to use the terms dux and comes only when speaking of fugues or fugal imitation technique.[57]

If the answer, the comes, is a literal imitation of the dux at the higher fifth or lower fourth, we speak of a real answer. If the comes appears as a somewhat altered version of the subject we speak of: tonal answer. Tonal answers are used in particular when the end of the dux and the beginning of the comes would form a dissonance if we would write a real answer (see the explanation below).

Answering a subject in a fugue is almost always done according to the following 'rules'. The precise form of the comes (tonal or real answer) is determined by the structure of the dux, and by the question whether or not the dux contains a modulation. We distinguish the following situations:

answering subjects not containing a modulation

1. As the fifth of the (home) key is *not* present in the *beginning* of the dux, the comes will form a real answer: the comes is an exact transposition of the dux, at the higher fifth or lower fourth.
2. As the fifth of the (home) key *is present* in the *beginning* of the dux, this fifth is answered at the higher fourth or lower fifth, so: 5^ is answered by 1^ of the home key (and not, as in a literal transposition would happen by 2^ of the home key). The remaining notes of the comes nevertheless are a fifth higher or fourth lower than the equivalent notes of the dux. The result is that the comes slightly differs from the dux, in other words: the answer is tonal. When you do it yourself: think always two steps: first, the fifth in the dux should be answered as it were with the 'wrong' tone (1^ instead of 2^), then this 'mistake' has to be 'corrected' during the comes (normally this is done as soon as possible). The first step is the actual tonal answer (which is in this case: adaptation of the beginning of the comes to the tonic in the *home key).* And the second step, changing one interval, is called: mutation; as this mutation occurs at the beginning, in the 'head' of the comes, it is referred to as head mutation, We can specify the procedure of tonal answer/head mutation with the help of these rules (the numbers refer to the *home key)*:
    - 5^ in the beginning of a dux is answered with 1^ in the beginning of the comes
    - a leap 1^ → 5^ in the beginning of a dux is answered with 5^ → 1^, the leap 5^ → 1^ in the beginning of a dux is answered with 1^ → 5^

55 The earliest written source for the terms *dux* and *comes* is in the writings of Seth Calvisius (1592)

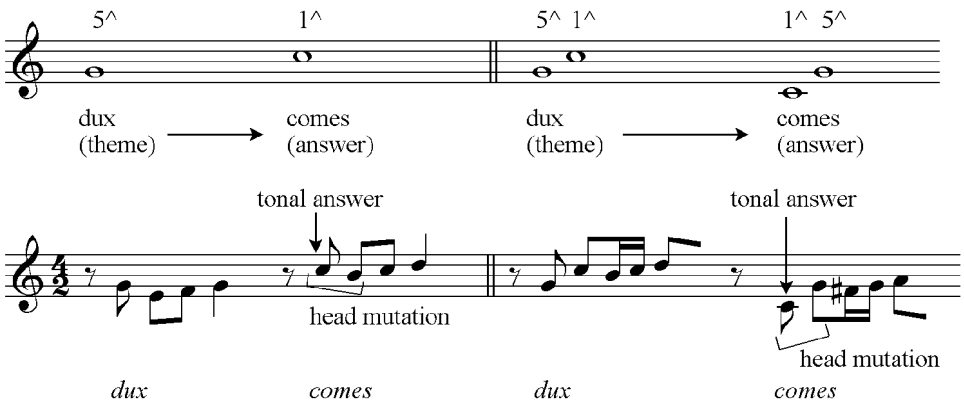
56 For more precise information about the exposition in a fugue see from page 36.

57 The terms *proposta* en *riposta* are especially pretty usuable when imitations at the octave are used in two-part inventions. See the annotated score of Invention 1 in example 20.

- as soon as possible after answering 5^ with 1^ (tonal answer) we return to the 'normal' transposition of the subject at the higher fifth or lower fourth – and resulting from this return we find *head mutation* in the beginning of the comes.

An example to clarify this:

Example 27
tonal answer and
head mutation

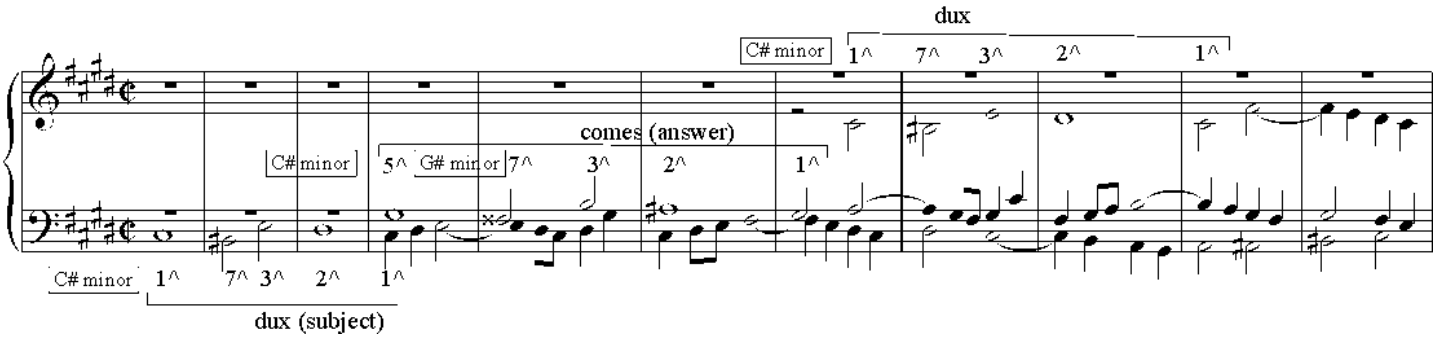


The beginning of the comes *has* to be changed because the dux usually ends at the *root* or *third* of the home key (and these tones then are, at the end of a dux entrance, usually part of the tonic triad); the supertonic 2^ (= fifth of the dominant key) at the beginning of the comes would cause a dissonant with the other voice(s). At entrances of a new voice dissonances are generally avoided in traditional counterpoint - and tonal answers serve that aim.

With regard to the harmony the comes *never* is a literal 'repeat' of the dux: At the beginning of the comes we normally are still in the *home key,* whereas *during the comes entrance* a modulation to the dominant key takes place. The beginning of the comes therefore always has another harmonic function than the head of the dux, as you can see in the beginning of the fugue in C# minor, WTC I, in example 28: in measure 4, we are still in the home key C# minor; the dominant key G# minor becomes audible not before measure 5. Therefore, the first note of the comes is sounding as 5^, whereas the first note of the dux clearly sounds as 1^. Similarly, in the Fugue in B major, WTC II[58] the first four notes of the comes still sound in the home key, B major; not before measure 7 the dominant key (F# major) comes into view.

More generally put: Whereas we *remain in the home key* during the dux entrance, we *always modulate* during the comes entrance. (with the exception of the situation that there is a modulation already in the dux, but that is rare).[59]

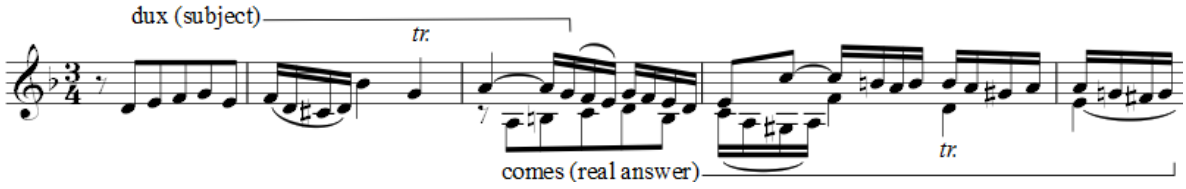
Example 28
Fugue in C# minor, WTC I[60]



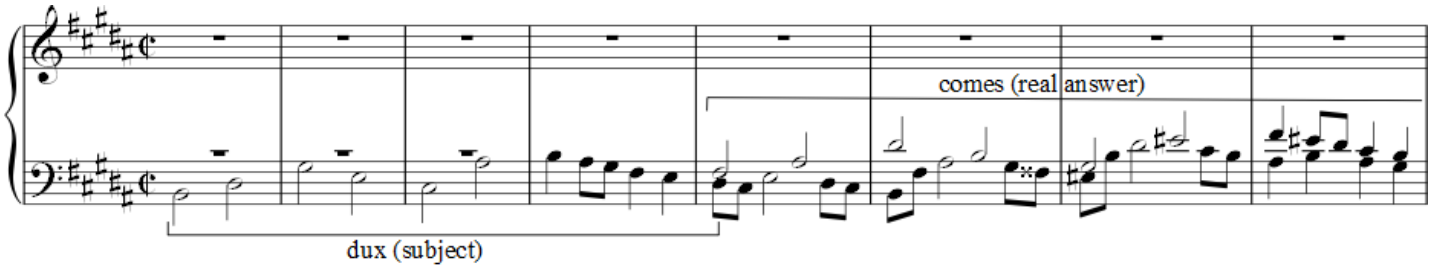
58 See example 30.
59 Modulating subjects: see from page 35.
60 See example 70 for the complete score of this fugue.

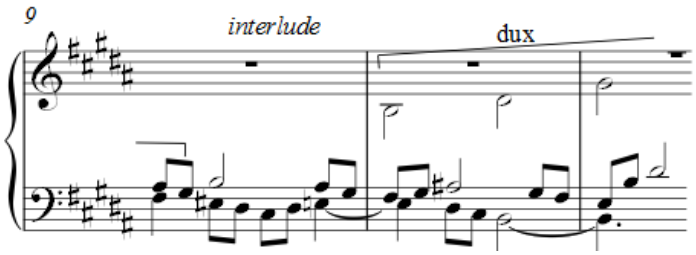
Some examples of real and tonal answers:

Example 29
Fugue in D minor, WTC I - real answer

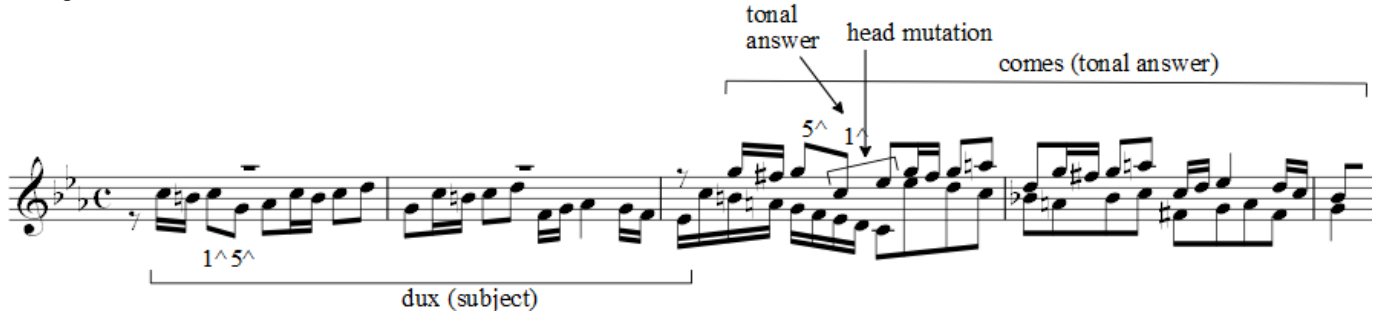


Example 30
Fugue in B major, WTC II - real answer.

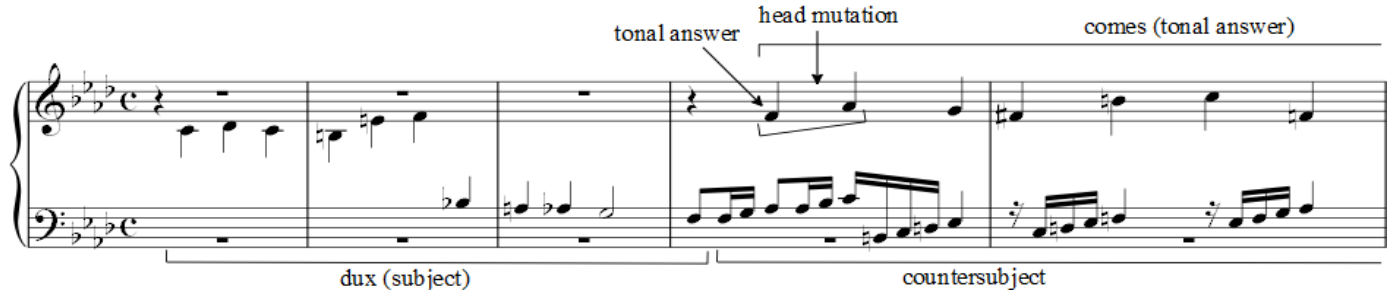




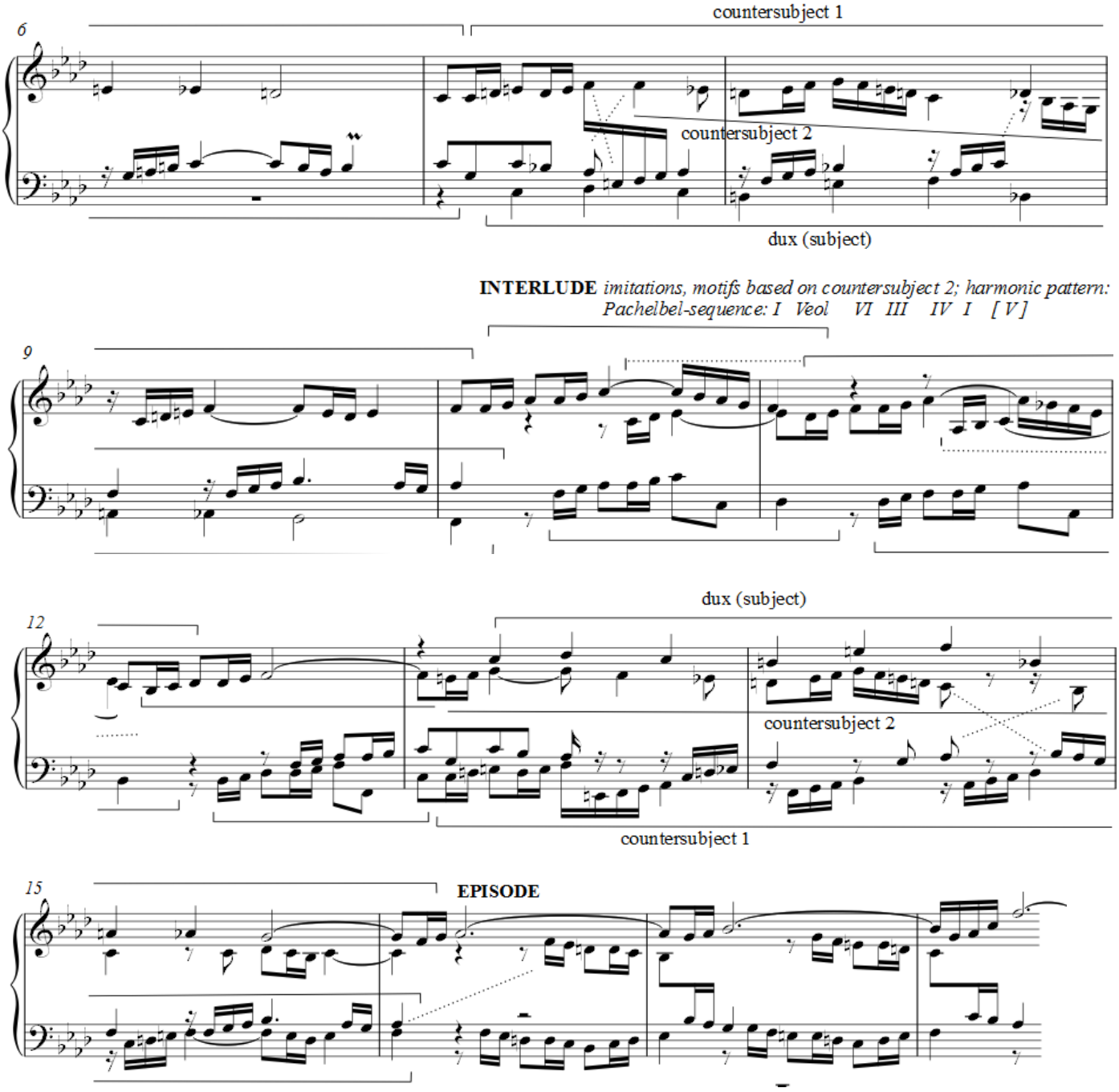
Example 31
Fugue in C minor, WTC I - tonal answer[61]



Example 33
Fugue in F minor, WTC I - tonal answer[62]

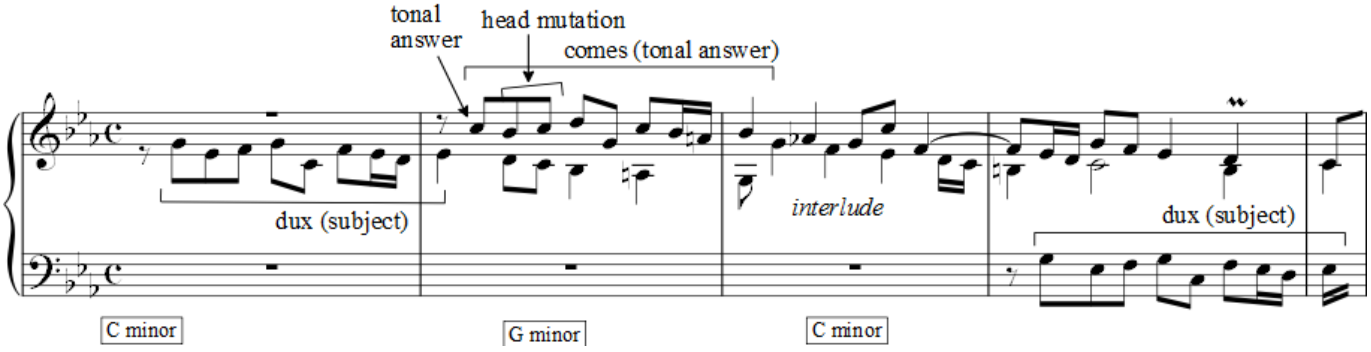


61 See also examples 47 and 67 for this fugue.
62 See also examples 59 and 65 for this fugue (these examples together contain the complete score).



Example 33

Fugue in C minor, WTC II - tonal answer[63]

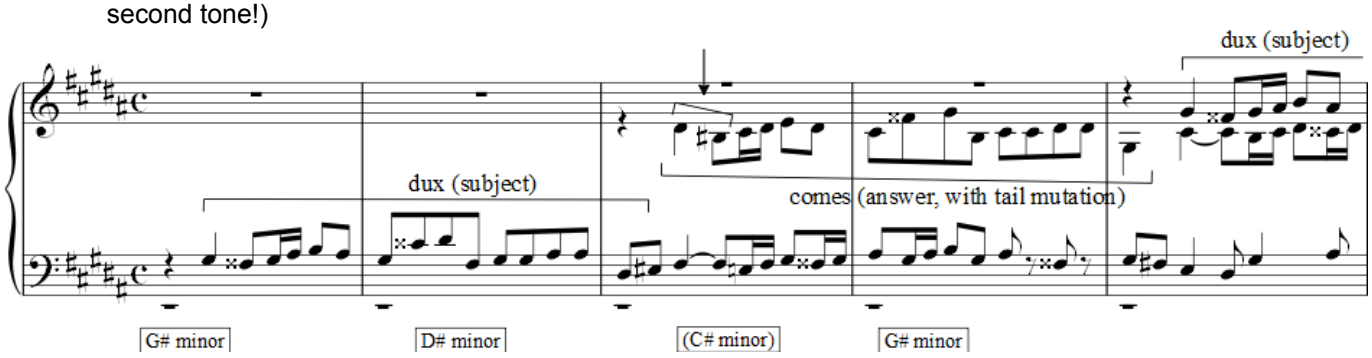


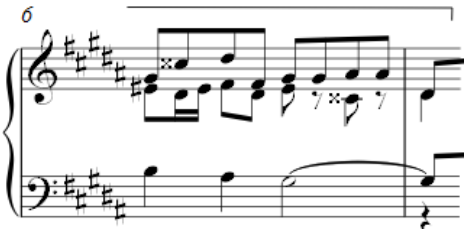
63 See also examples 59 and 65 for this fugue (these examples together contain the complete score).

answering subjects containing a modulation

1. As I already mentioned above, the first entrance of the subject (the dux) sometimes modulates to the dominant key (ie a fifth up) - a modulation that normally takes place a little later, during the comes.[64] If the comes would form an unchanged transposition of the dux, we would modulate to the dominant key of the dominant key during the comes (ie the key of the second degree, seen from the home key). For example: if the dux modulates from C to G, the comes would modulate from G to D. In the context of a fugal composition this is not possible: it would lead to too many modulations in a short time, and we would modulate too soon too far away from the home key. Therefore answers of modulating subjects always modulate back to the home key. As a result *at least the end of the comes* has to be changed: it must be transposed down a second to avoid a close in the key of the second degree, and to achieve a close in the home key instead. We then speak of tail mutation (or: end mutation) - which is logically another form of tonal answer. The tail mutation often begins at an early point in the comes, but it differs essentially from head mutation: when head mutation is used the *end* of the comes forms a 'correct' transposition of the dux (at the higher fifth or lower fourth), whereas the beginning is changed; when tail mutation is used, the *beginning* of the comes is the 'correct' transposition (but the end is changed).

Example 34 Fugue in G# minor, WTC I – modulating theme; tail mutation in the answer (from the second tone!)





The 'trick' Bach uses here is in fact this:
– the dux modulates a *fifth up* (from G# minor to D# minor)
– the second tone of the comes, the starting point of the tail mutation (B#) causes a modulation to C# minor.
– after this, the comes can be a literal transposition: when modulating a fifth up again, we return to the home key G# minor

Another clear example of a modulating subject, and as a result thereof: tail mutation in the comes, is the fugue in Eb major, WTC I. In this fugue, the tail mutation starts much later, in the second half of the comes.[65]

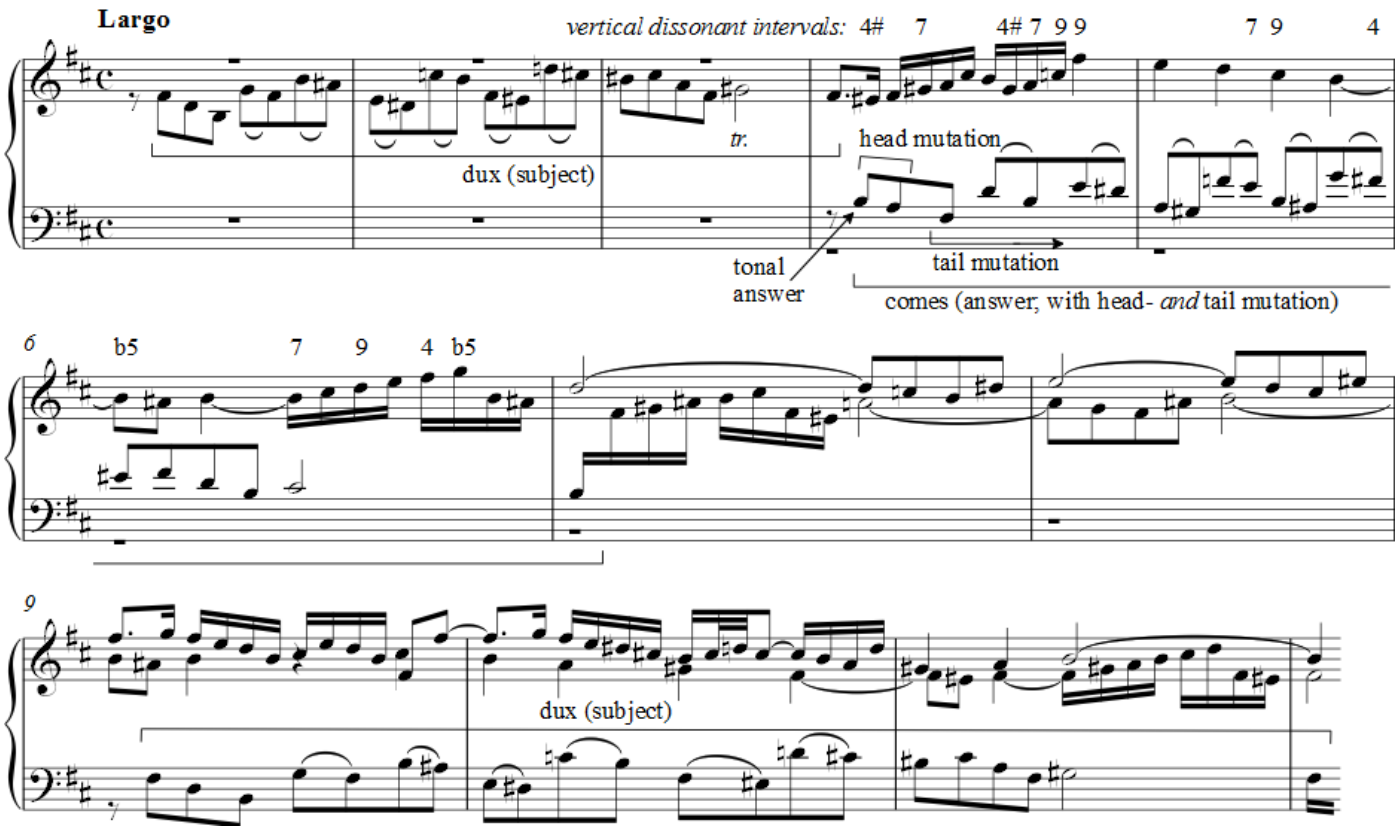
2. As the *fifth of the home key* is used in the head of a modulating subject, a *tonal answer* (with *head mutation)* is used - just as with non-modulating subjects. But the modulation in the subject necessitates *tail mutation* as well. The comes is thus changed at two places: at the beginning of the comes we find that 5^ in the dux is answered with 1^, at another, later point in the comes we find a second change, associated with the modulation in the dux (up a fifth, from the home to the dominant key); this second change in the comes alters this initial modulation to a modulation up a fourth (from the dominant key to the home key):[66]

64 Modulating subjects are relatively rare. The fugue from Praeludium and Fugue in A minor, BWV 894 has a modulating subject as well (see example 24).

65 See example 42, and the explanation on page 41.

66 In such cases, it seems not very logical to apply tonal answer and head mutation at the beginning of comes: As there has been a modulation during the dux, the beginning of the comes could in fact be a literal transposition. See example

Example 35
Fugue in B minor, WTC I - modulating subject starting on 5^: ; comes with head mutation *and* tail mutation



counterpoint (counterpart) and countersubject; structure of the exposition

In all fugues, the voice that has the first entrance of the subject continues after finishing the dux, and then sounds together with the comes, the second entrance, thus forming a *counterpart* to this second entrance. When this counterpart is not returning during further entrances of the subject, we name it: counterpoint, or: free counterpoint (or eventually: free counterpart). Conversely, if we encounter the *same* counterpart of the subject in the course of the fugue, we speak of a countersubject or eventually: obligate counterpoint.

Most fugues contain more than two voices[67]; the *third* entrance of the subject normally is a dux again (an octave higher or lower than the first dux), an eventual fourth entrance normally is a comes again (an octave higher or lower than the first comes)[68]

Whenever a fugue has more than two voices, this leaves open the possibility to use *more than a single* countersubject. Then an exposition may look similar to this scheme:

35, and replace the first tone of the comes (B) by C# - the only problem would be that we get a dissonant fourth when the dux ends on 1^ in the dominant key, and the comes is in a *lower* voice. Like it happens in this fugue..

67 In the WTC, the only two-part fugue is the Fugue in E minor, WTC I . Apart from this one fugue in the WTC we may mention the *Four Duets* BWV 802-805.

68 Have a quick look at examples 45-54 to see the pattern.

(S=Soprano, A=Alto, T=Tenor, B=Bass):

S			dux (subject)	countersubject 1
A		comes (answer)	countersubject 1	countersubject 2
T	dux (subject)	countersubject 1	countersubject 2	free counterpoint
B				comes (answer)

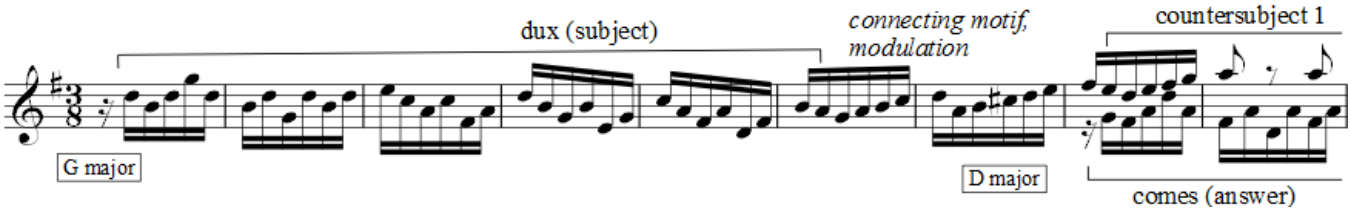
-- *interlude*[69] --

The first appearance of the second countersubject is then logically during the *third* entrance of the subject (normally: the second dux). In expositions with a single countersubject, subject and countersubject normally are written in *double counterpoint at the octave.* The use of this form of double counterpoint is a necessity, as can be assumed that in the course of the fugue the *positions* of subject and countersubject will be inverted at times: the countersubject will sometimes appear *below* the subject, and sometimes *above.* In expositions with two countersubject the subject and the two countersubjects are normally written in *triple counterpoint at the octave,*[70] for the same reason: it should be possible, whenever the combination of the subject and both countersubjects reappears in the course of the fugue that all three appear at the top, in the middle or at the bottom.

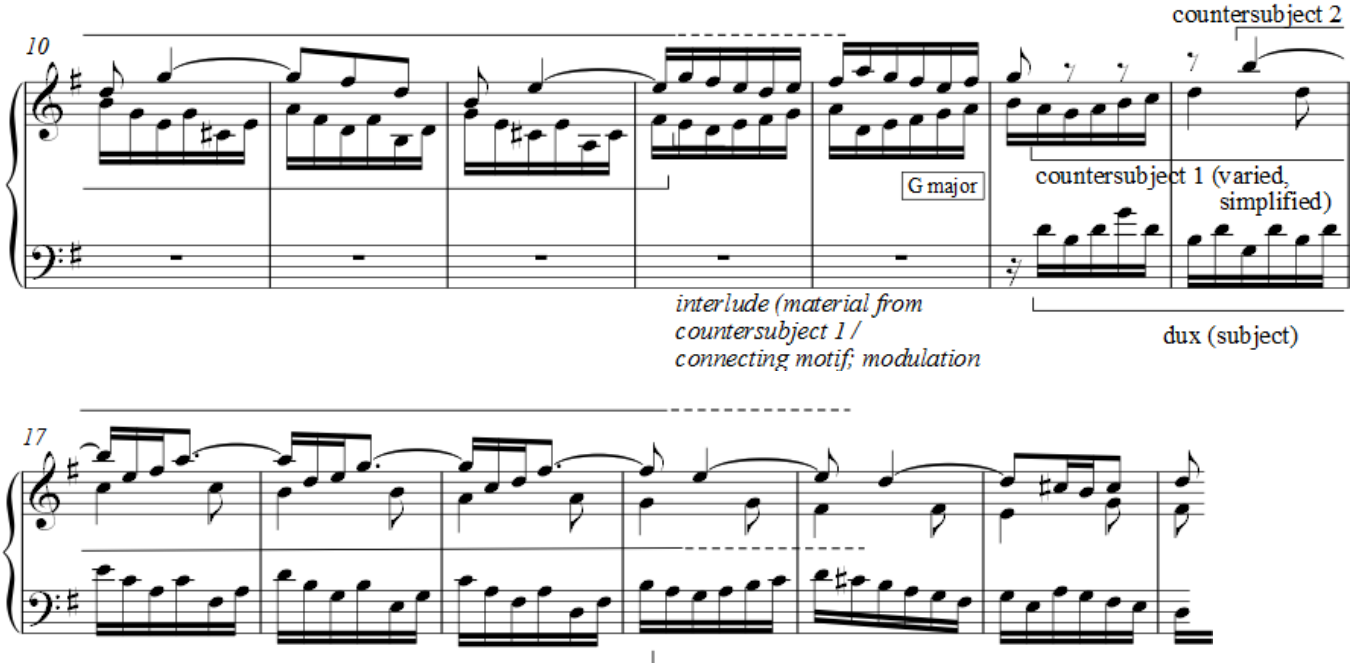
Sometimes expositions are 'irregular': the third entrance must not always be a dux, the fourth is not always a comes: In the Fugue in C major, WTC I, the entrances of the subject are successively dux-comes-*comes*-dux; in the Fugue in F minor, WTC I: dux-comes-dux-*dux.*[71] Also, sometimes an exposition contains *more entrances than voices:* one or several voice(s) contain *two* entrances already during the exposition. We could label this situation: 'exposition with redundant entrance(s)'.[72]

An example of an exposition with two countersubjects (in a three-part fugue):[73]

Example 36
Fugue in G major, WTC II, measures 1-23. The expositionis until measure 20.[74]



69 See page 43 for the term *interlude.*
70 See also the notes on double and triple counterpoint in chapter: *Some general observations about polyphony/polyphonic techniques.*
71 Fugue in C major, WTC I: see example 61. Fugue in F minor, WTC I: see example 32.
72 This term is rather unfortunate, because it is suggested that additional entrances in an exposition are actually superfluous. Often it is a better idea to use the term *counterexposition.* For further explanation see chapter: *exposition with redundant entrance; counterexposition.* An exposition with *less* entrances than voices could eventually be called: *incomplete exposition*. To my knowledge this does not occur in any of Bach's works.
73 Compare this exposition with the expositions of the Fugues in F minor, WTC I (example 32), and in Bb major (example 55). In these fugues two countersubjects are introduces in the exposition as well. A somewhat less clear example is the Fugue in D major, WTC I (see example 57).
74 See page 40 for the term *connecting motif.*

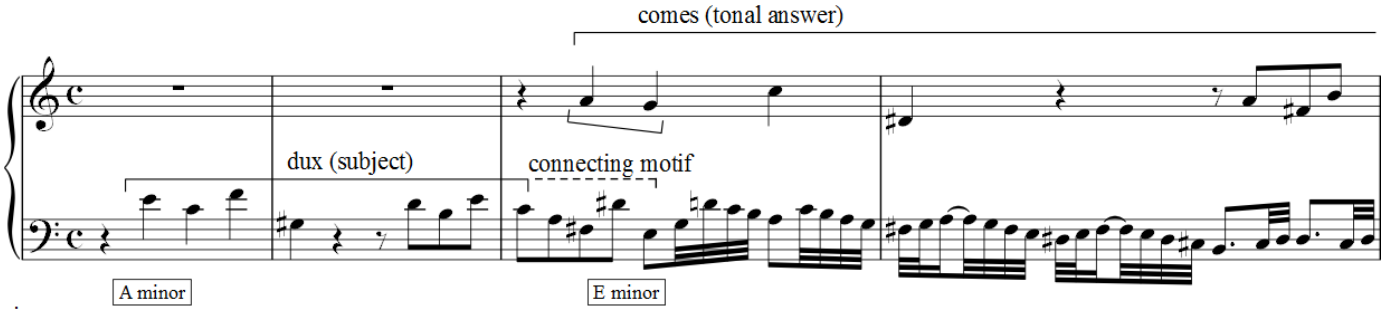


The following sections deal with some specific issues related to the design of the exposition of a fugue:

on the relation between the comes (answer) and its counterpart (counterpoint or countersubject)

In many fugues it is not entirely clear where precisely the subject (the dux) ends, and the counterpoint or countersubject begins. At the end of the dux there often is no clear close, and equally often the dux and the following counterpoint or countersubject together form a single melodic entity.[75] However, the counterpart often at the same time forms a (for example rhythmic and/or melodic) *contrast* with the comes. A rhythmic contrast arises for example as smaller values in the counterpart stand against larger note values in the comes, or vice versa, as in example 37: here relatively long values in the subject are combined with extremely short values in the countersubject.[76]

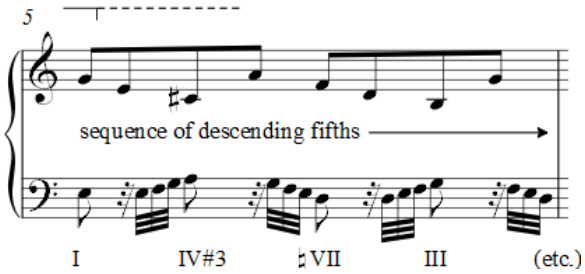
Example 37
Fugue in A minor, WTC II[77]



75 Sometimes this melodic 'curve' is even much longer; see the top voice at the beginning of the Fugue in Bb minor, WTC I in example 48.

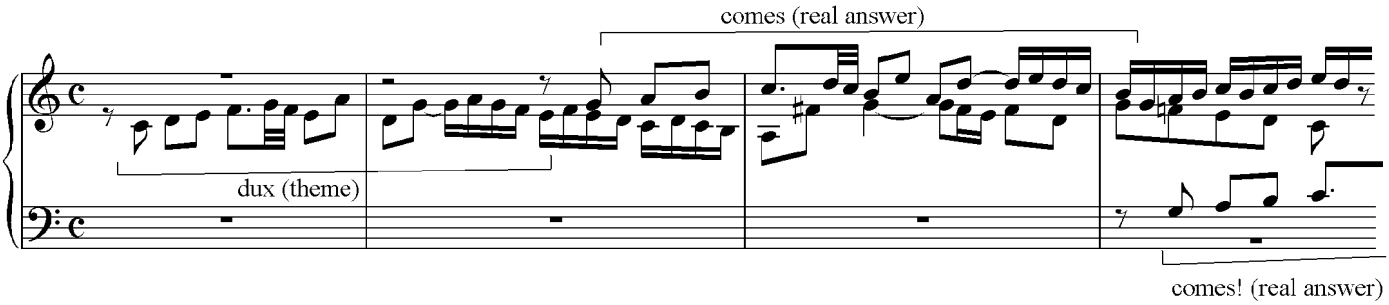
76 See also the Fugues in B major, WTC II (example 30), in C minor, WTC I (example 31), in F minor, WTC I (example 32; this fugue is another example of extreme rhythmic contrast), in B minor, WTC I (example 35), and in G major, WTC II (example 36 - also rhythmically pretty contrasting lines).

77 See page 40 for the term *connecting motif*.



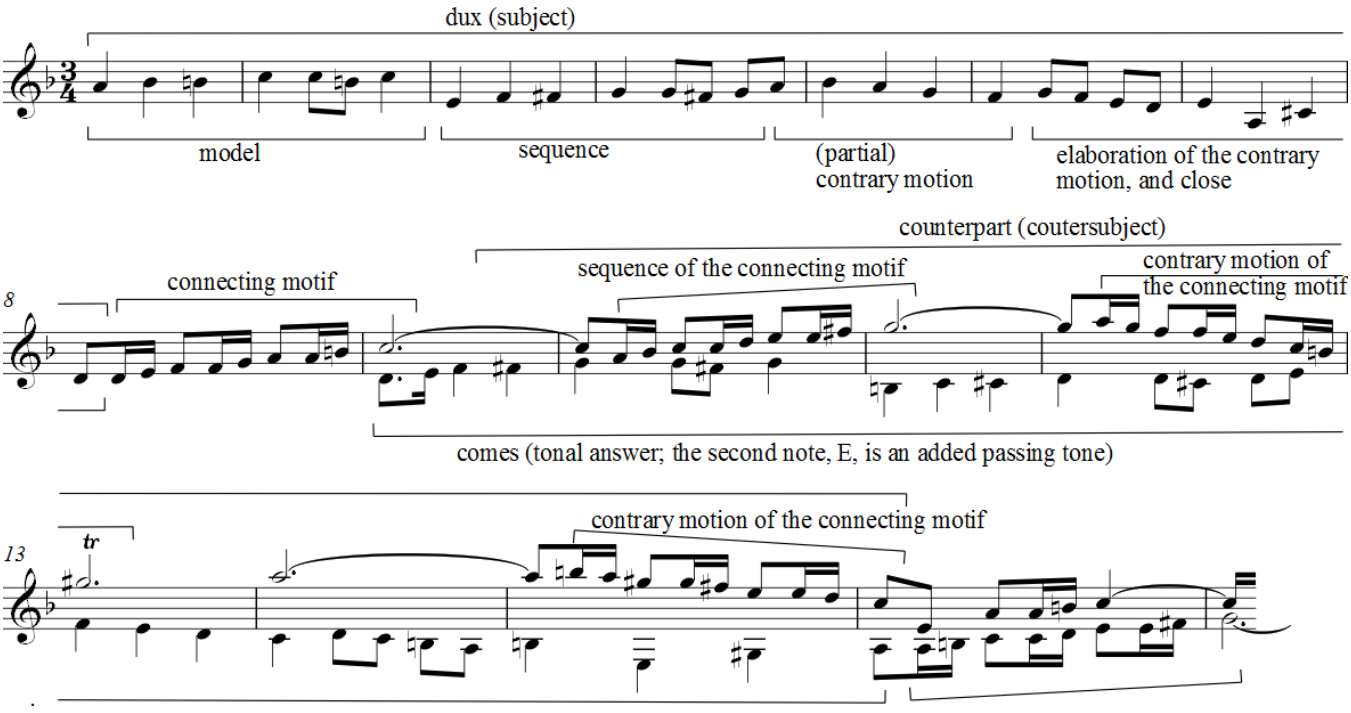
A rhythmic contrast can arise from the use of complementary rhythm.[78] And we may speak of a melodic contrast between the voices when the comes and the counterpart move differently: one voice moves up as the other moves down, or: one voice leaps as the other moves stepwise, etc., as in the Fugue in C major, WTC I:[79]

Example 38
Fugue in C major, WTC I[80]



It is not uncommon that a subject with only or mainly diatonic tones is combined with a very chromatic counterpart, or vice versa.[81] A beautiful example of such contrast is between the comes and its counterpart in the Fugue from the *Chromatic Fantasy and Fugue:*

Example 39
Fugue from the Chromatic Fantasy and Fugue in D minor, BWV 903, measures 1-16[82]



78 See the beginning of the Fugue in F# minor, WTC II (example 5; the complete fugue is in example 71).
79 Compare the fragment of the *Sanctus* from Josquin's *Missa pange lingua* in example 4.
80 The complete score of this fugue is in example 61.
81 As in the Fugue in F minor, WTC I, see example 32.
82 See page 40 for the term *connecting motif.*

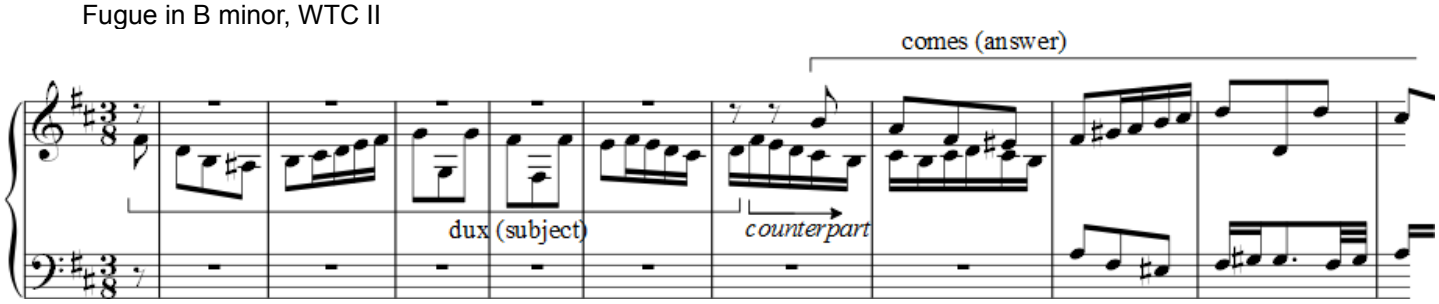
Contrasts between a comes and its counterpart sometimes lead to sharp dissonances. Extreme examples of such dissonances are in the Fugue in B minor, WTC I[83]. On the other hand, musically speaking, the subject and the counterpart always complement each other, even when they form very dissonant intervals.

In some fugues there is a clear motivic relation between the subject and the countersubject, even sometimes to the extent that the countersubject can be seen as a *derivation* of the subject. This is clearly the case in the Fugue in G minor, WTC I, in which the countersubject forms a partial mirror of the subject. [84]

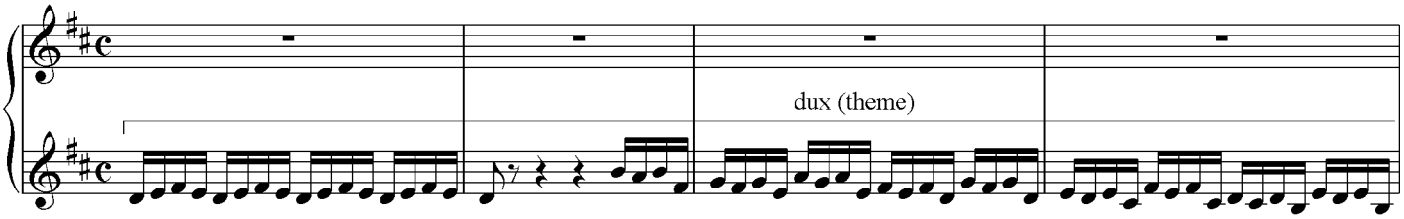
Around the end of the dux and the start of the comes we normally see one of the following situations:

- Situation 1: The dux ends *before* the start of the comes. The remaining tones in the 'dux-voice' (ie to the beginning of the comes) then in principle can be labeled as connecting motif. But often it seems that these 'remaining notes' in fact belong to the counterpart – the comes just starts a bit later then we might expect. This situation occurs in many fugues; see for example the Fugue in B minor, WTC II in example 40[85]: the dux ends on the downbeat of measure 6 - and the remaining sixteenth notes in this measure we can consider as part of the counterpart of the comes; therefore they not necessarily form a separate connecting motif. On the other hand, I believe there *is* a 'real' connecting motif in the Fugue in D major, BWV 532 D (example 41), because here the dux clearly ends on the downbeat of measure 6. The same applies to the Fugue from the *Chromatic Fantasy and Fugue*:[86] The dux clearly ends on the first beat of measure 8, the other notes in measure 8 form a sort of upbeat to the counterpart.

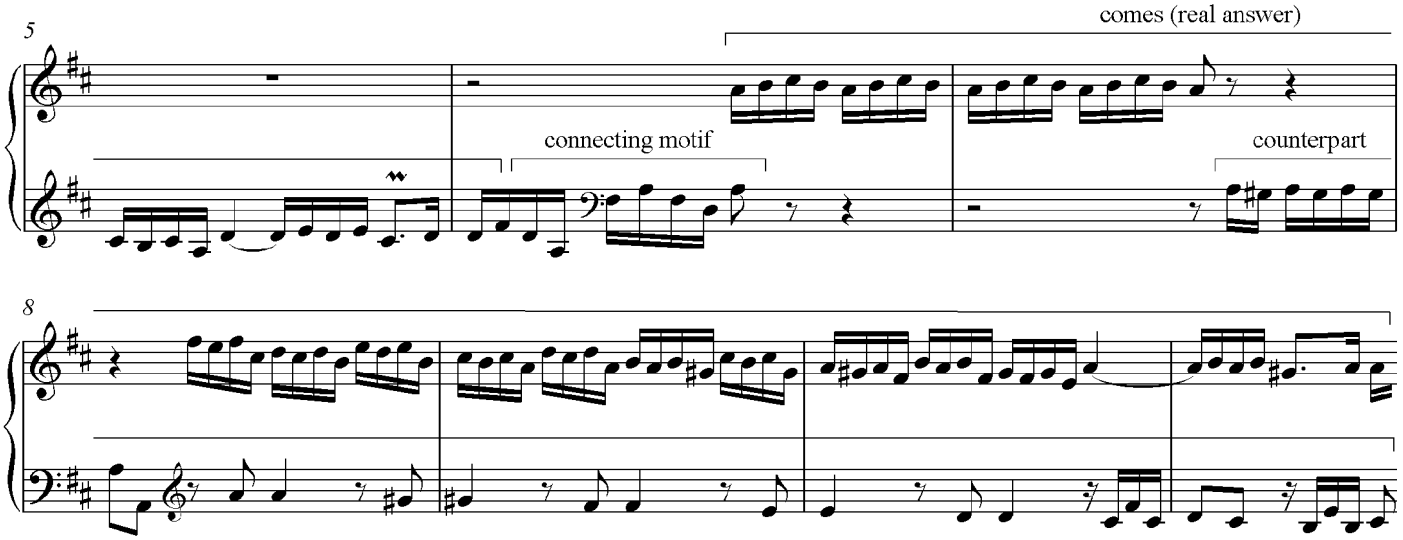
Example 40
Fugue in B minor, WTC II



Example 41
Fugue in D major, BWV 532 D

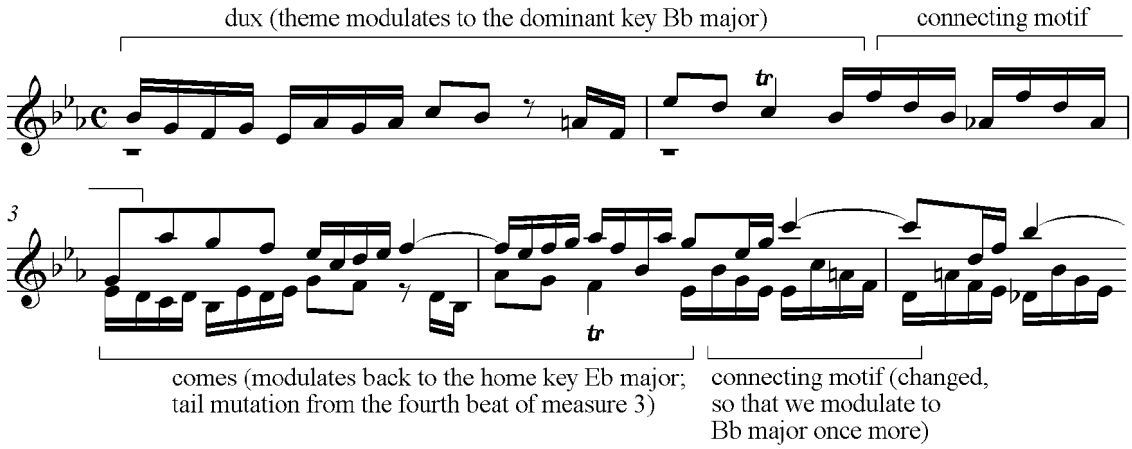


83 See example 35; the numbers in the score refer to dissonant intervals. (in measures 4-6)
84 Example 68b shows the relations between subject and countersubject in this fugue; example 69 contains the complete score.
85 Compare the Fugue in B major, WTC II (example 30).
86 See example 39.



In the Fugue in Eb major, WTC I a connecting motif is used to modulate back to the home key: the motif in the second half of measure 2 is *not* part of the dux, as tail mutation is used in the comes in measure 3: this means that the subject is designed as as *modulating* subject;[87] therefore the dux ends on the third beat of measure 2 (in Bb major):

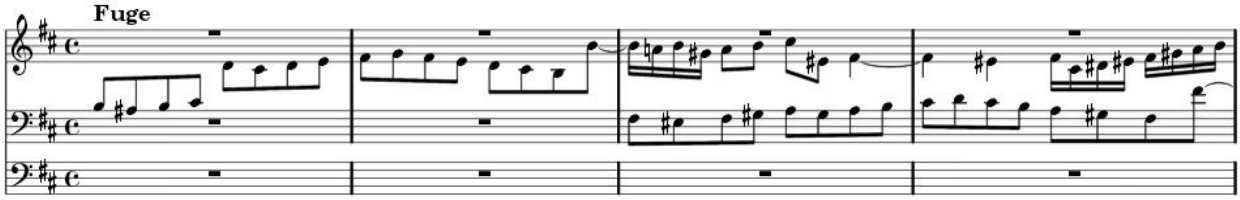
Example 42
Fugue in Eb major, WTC I



- Situation 2: the dux ends on a strong beat, on a (relatively) long note; the comes then starts on a weak beat *during* the final tone of the dux. The first tone of the comes and the final tone of the dux then form a consonant interval (most common: 5^ or 8^, less usual: 3^ or 6^):[88]

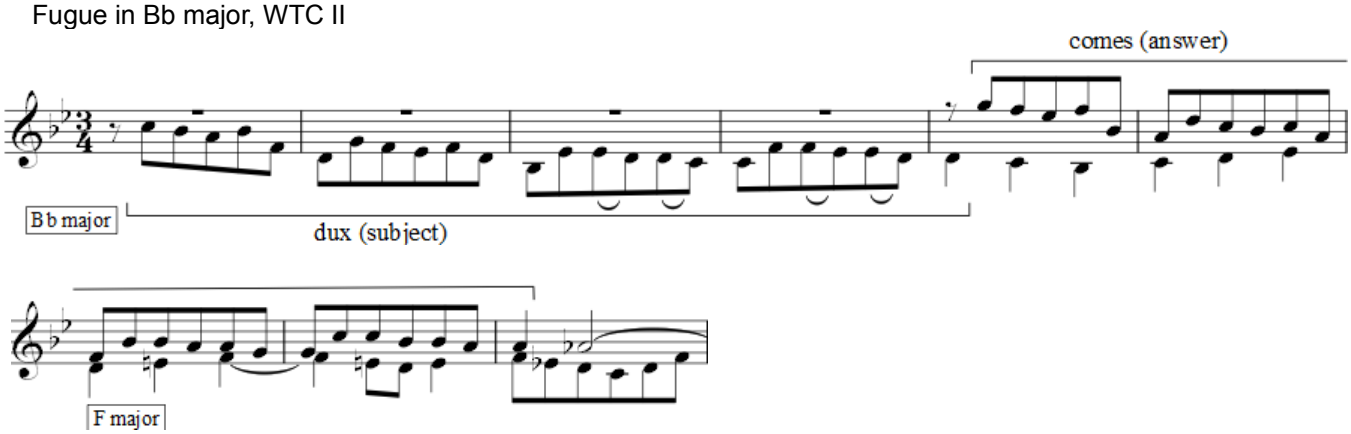
87 See chapter: *answering subjects containing a modulation.*

88 See also the Fugues in D minor, WTC I (example 29), and in B minor, WTC I (example 35). Sometimes the comes starts during a tone that is tied over *after* the dux has ended; the tied tone becomes a suspension because of the entrance of the comes. This happens for example in the Organ Fugue in B minor, BWV 544:



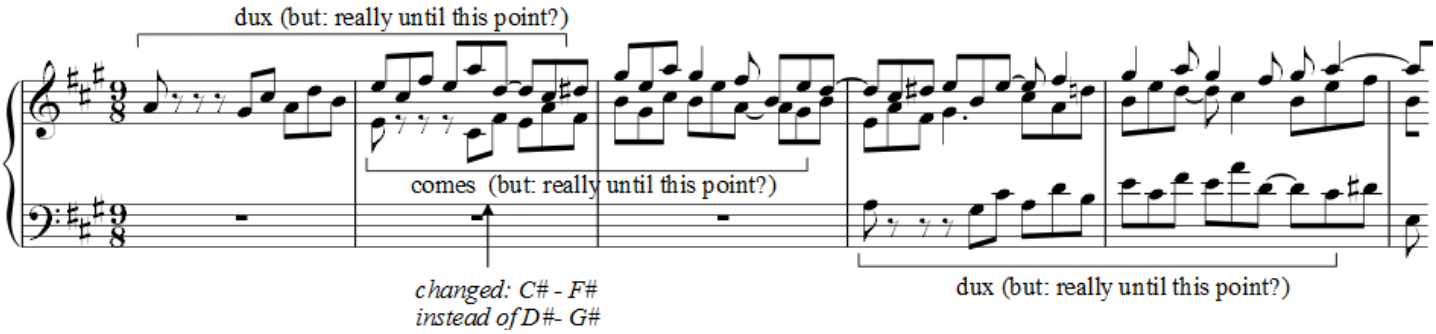
The B on the first beat of measure 3 is becoming a dissonant fourth because of the first tone (F#) of the comes, and resolves downwards to A (4 – 3 - suspension).

Example 43
Fugue in Bb major, WTC II



- Situation 3: the last note of the dux coincides with the first note of the comes, this is often the case in fugues in which the subject starts *and* ends on a strong beat. The interval between the last tone of the dux and the first tone of the comes usually is:
  - a fifth *above* the final note of the dux, less often an octave *below or above* the final tone of the dux[89]
  - a third or sixth *above or below* the final note of the dux, if the dux ends on the third of the home key.[90]
- Situation 4: the comes begins *before* the end the dux; this situation is quite rare. A fine example is the Fugue in A major, WTC II, in which is suggested as would the piece begin with a stretto[91]. When this is happening, we may speak of a strettofugue: we have the feeling that the dux and comes *overlap*, right from the start of the fugue*:*

Example 44
Fugue in A major, WTC I



89 See the Fugues in D# minor, WTC I (example 10), in E major (example 11), in C# minor, WTC I (example 28), and in F minor, WTC I (example 32).

90 see the Fugues in Bb minor, WTC I (example 48), in E major, WTC II (examples 11, 21, 50), in C minor, WTC II (example 33), in B minor, WTC II (example 40), in C minor, WTC I (example 47) and in C major, WTC II (example 47).

91 Stretto: see chapter: *further, developmental sections in fugues; application of stretti and other 'contrapuntal techniques (contrary motion, augmentation and diminution); episodes*

subject and counterpart (counterpoint or countersubject) in the exposition; interludes

In a two-part fugue the exposition ends as soon as we have heard the subject twice (dux followed by comes). But in the work of Bach two-part fugues are a rarity:[92] Most of Bach's fugues are three- or four-part, and five-part fugues are a rarity as well. Expositions in fugues by Bach always contain *at least* as many entrances of the subject as the fugue has voices, as the subject always appears *at least once* in all voices during the exposition. Logically, in a three-part fugue with three entrances in the exposition, we have six options for the *consecution of entrances* of the voices. The sequences: top - middle - lower voice and: middle - top - lower voice clearly are preferred by Bach, and three-part Bach-fugues seldom start in the lowest voice (as opposed to four-part fugues). The entrances are always in *adjacent voices,* which in a three-part fugue means that the sequences top - lower - middle voice and lower - top - middle voice are not possible. Often the lowest voice has the last entrance; the middle voice often has the first entrance, and seldom the last one. The third entrance of the subject is again a dux, and therefore equal to the first entrance, only an octave higher or lower.[93]

Between the end of the comes and the beginning of the second dux we usually find a small connecting section *without* the subject; an interlude. More precisely, we may speak of a modulating interlude, as we modulate during this interlude from the dominant key (at the end of the comes) back to the home key (the key of the following dux entrance). We speak, more generally, of an interlude when in a section the subject does not occur, and if that section is *within a group of entrances* of the subject. Sections without the subject *after* a group of entrances (for example after a closing cadence) should be labeled: episodes.[94]

It is *always* necessary to write an interlude between the first comes and the second dux if the subject starts on 1^ and ends on 5^ or 3^ (as in example 45): if the second dux would enter already on the first beat of measure 4 (starting on C #) would create a dissonance with the last tone of the comes, B. Often *no* interlude is needed as the subject starts on 5^ (because then the last tone of the comes and the first tone of the second dux do not form a dissonance). Nevertheless, even then often an interlude appears after the comes, mainly because of the harmony and the keys: at the end of the comes we are in the dominant key, but the second dux appears in the home key[95]. It is logical, and often necessary, to connect these keys via a (short) modulation.

In minor keys it is *more often necessary* to write an interlude at this point than in major keys. The reason is that subjects in fugues (if they do not modulate) almost always end on one of the tones of the tonic triad, and harmonically on I[96]. Therefore, in fugues in minor keys, the comes ends on I in the *minor* dominant key; for example: as the home key of the piece is C minor, the comes ends on one of the tones of the G *minor* triad. This G minor triad is, however, no 'ordinary' chord in the home key C minor: V in C minor is normally the G *major* chord. Therefore, it is logical that the Bb (3^ in G minor) is raised to B natural (third of V in C minor) during an interlude, to clarify that the key is indeed changing back to the home key C minor. On the other hand, when the fugue is in a major key, the end of the comes is in the *major* dominant key; the comes then ends on one of the tones of I in the major dominant key. This I often can immediately be reinterpreted as V in the home key: as the home key is C major, the comes ends on one of the tones of the G major triad, which immediately can be understood as V in C major.

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92 In the WTC, the only two-part fugue is the Fugue in E minor, WTC I . Apart from this one fugue in the WTC we may mention the *Four Duets* BWV 802-805.

93 See the scheme on page 37 and the examples 28, 30,33,34, 35, 36. In the Fugue in F# major, WTC I, the third entrance is (quite exceptionally) *two* octaves lower than the first. Compare also the schemes of *four-part* expositions on page 51.

94 See from page 72 for further explanation of *episodes.* In quite some texts on fugues you will encounter a rather vague use of the terms *interlude* and *episode:* they are often used synonymously to label *any* part of a fugue which does not contain the subject. I prefer a more precise useage, and therefore always differentiate between interludes and episodes.

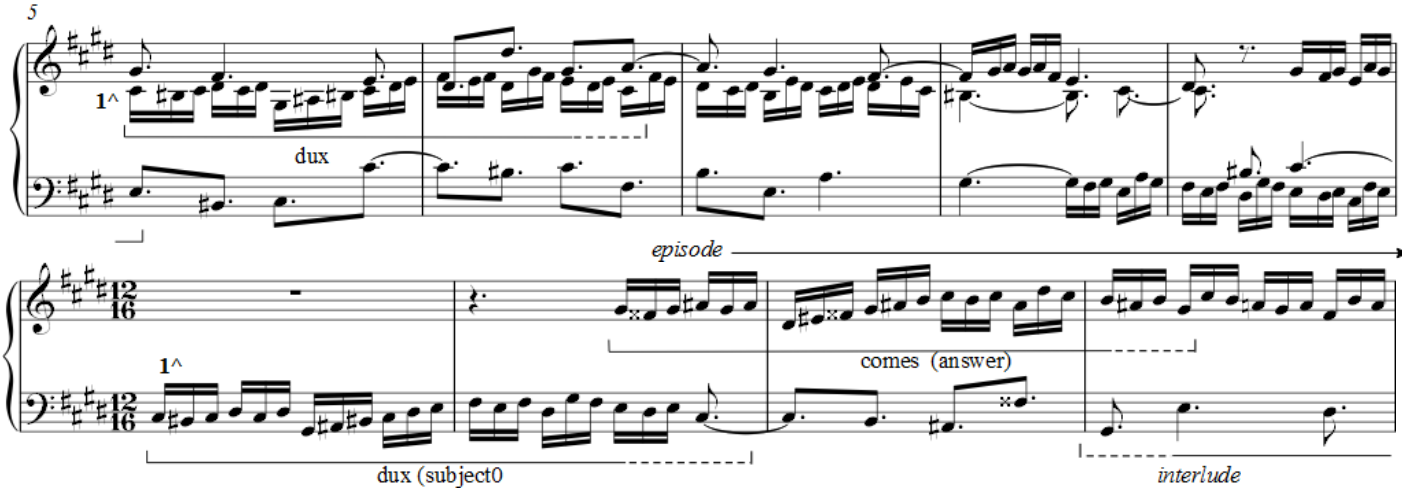
95 See example 33: the third measure forms an interlude; we modulate back from G minor to C minor

96 See page 28.

Two examples:

In the Fugue in C# minor, WTC II the comes entrance is after one and a half measure, so logically the second dux would begin on the first beat of measure 4, if there would be no interlude. But, on the first beat of measure 4 the top voice (= the comes) reaches the tone B, the third of G# minor; the harmony at this point is: I in G# minor. It is not conceivable that the second dux entrance would be right at this spot. Therefore we first modulate back from G# minor to C# minor (using two sequences of the last part of the comes). The entrance of the second dux (in measure 5) is when we reach I in C# minor:

Example 45
Fugue in C# minor, WTC II



Moreover apparent from this example is that is obviously possible, in binary metre, to move the subject half a measure without substantially changing the metric accents: in 4/4 metre in the Baroque the third and first beats are more or less equally 'strong'. In ternary metre on the other hand, it is hardly possible to move the subject in the metre (it would affect the metrical structure). Likewise, we can not move a subject in 4/4 for instance from a first to a second beat. Such metrical repositionings only take place in *stretti.*[97]

In the Fugue in C major, WTC II (example 46) the comes ends on the tone B (in measure 9), the 3^ of the dominant key G major. The G major chord in measure 9 sounds 'on arrival' as I in G major, but it can also be understood as V in C major ('on departure'); that the second dux immediately follows, without interlude, is therefore not causing problems. The result is a *functional change* of the first tone(s) of the dux: the first tone of the dux in meaure 9 is still heard as 1^ in G major, even though the first tone of the dux in measure 1 clearly was perceived as 5^ in C major[98]. The *second* tone of the dux in measure 9 (the F) makes clear that we modulate back to C major. This functional change of the first note(s) of a dux is similar to the change we *always* see at the beginning of the comes (where the home key stays present to a certain moment, even though the comes is transposed a fifth up).[99]

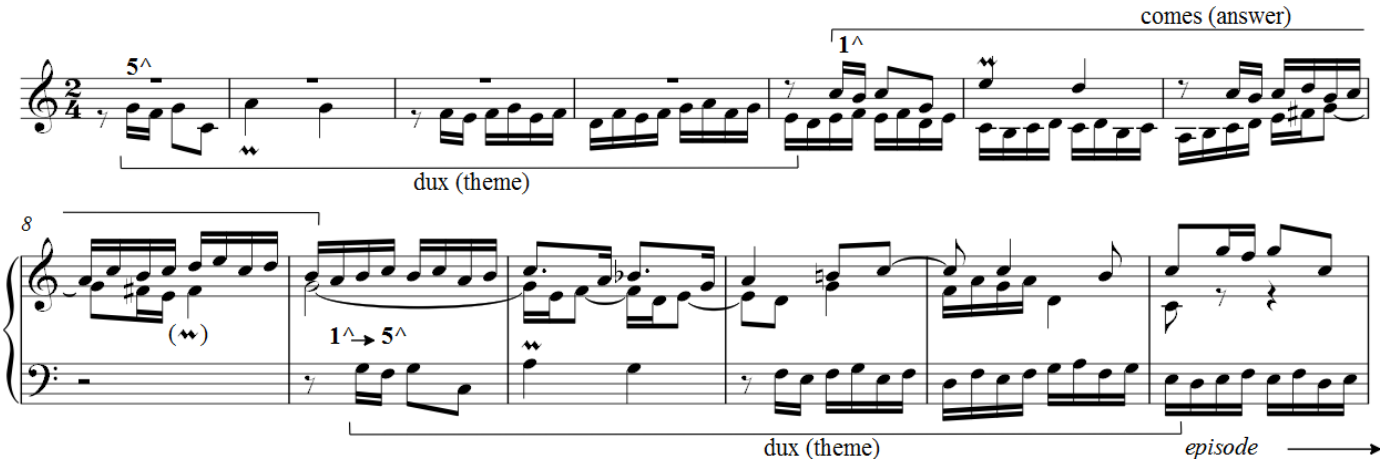
Example 46

97 Stretto: see chapter: *further, developmental sections in fugues; application of stretti and other 'contrapuntal techniques (contrary motion, augmentation and diminution); episodes*

98 Compare fot instance with the Fugue in C minor, WTC II (example 33): here a modulating interlude stands between the comes and the second dux - and therefore there is *no* functional change at the beginning of the second dux: the G at the beginning of measure 4 sounds as 5^ in C minor right away.

99 See the note about this on page 32. Compare example 46 with the Fugues in Bb major, WTC I (example 55) and in E major, WTC II (example 50): in these fugues the second dux starts immediately after the first comes as well.

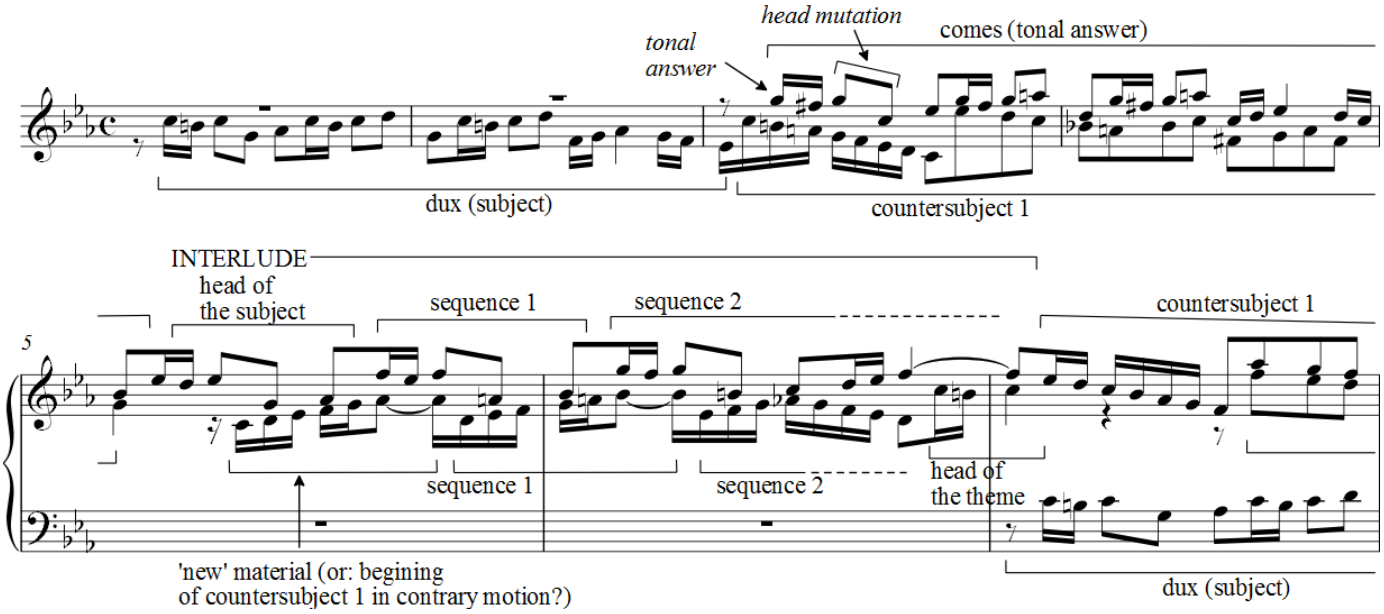
Fugue in C major, WTC II



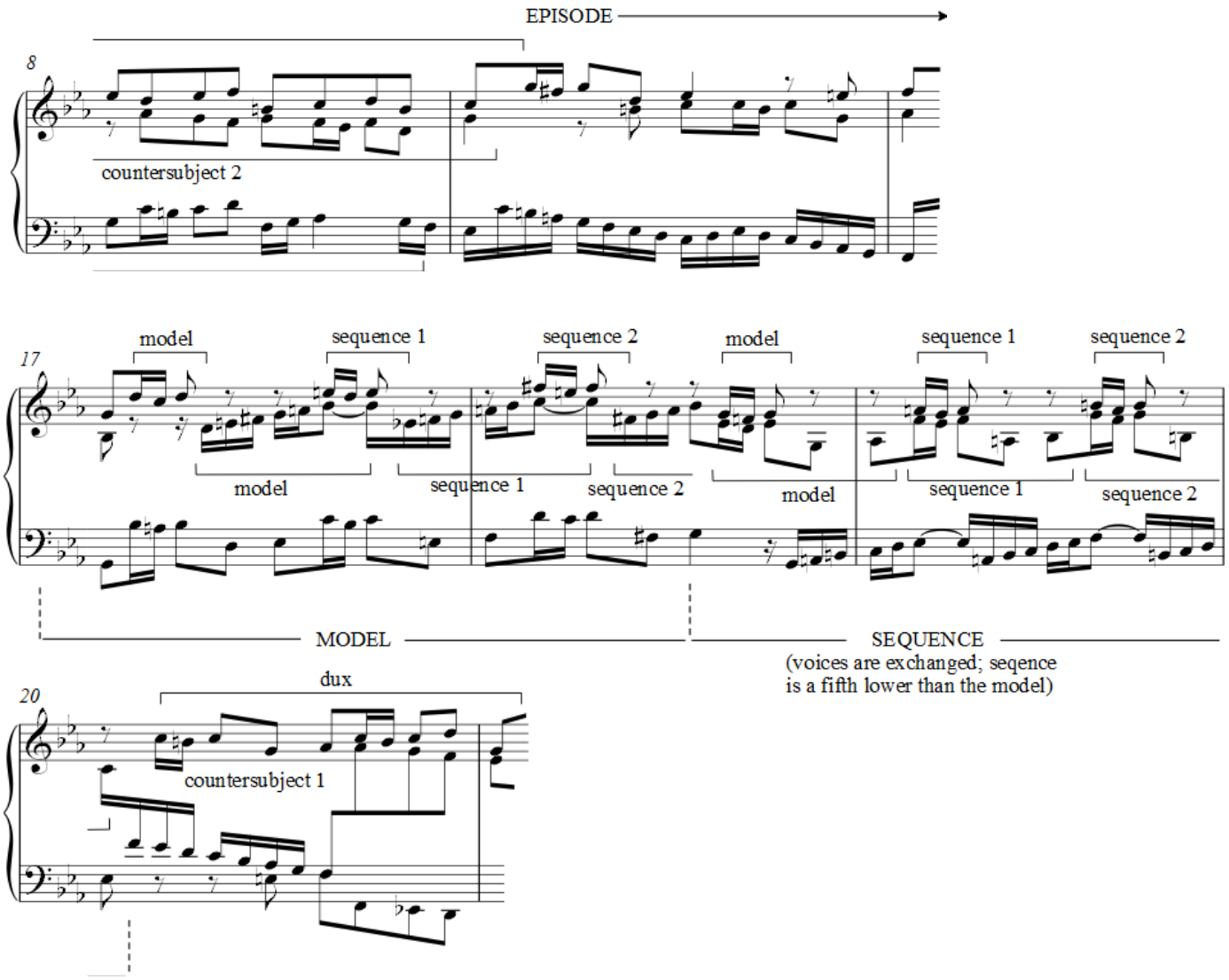
Interludes often consist of motivic elaborations *(Fortspinnung)* on elements from the subject and/or the counterpart (or countersubject). A clear example is the Fugue in C# minor, WTC II[100]: in the interlude in measure 4 the soprano has a sequence of the end of the comes. In the first interlude in the Fugue in B major, WTC I[101] the bass imitates the beginning of the preceding measure of the tenor, whereas the tenor has pretty similar material as well. In the Fugue in G major, WTC II[102] the interlude in measures 13/14 consists of elements of the countersubject and the connecting motif.[103]

If the dux is followed by a onnecting otif, this motif often reappears in slightly modified form after the comes entrance, in the same voice: see example 42. Sometimes new melodic material appears in the interlude (could be in combination with material from the previous measures), material that will continue to play a role later in the piece:

Example 47
Fugue in C minor, WTC I - exposition (measures 1-9) and the third episode (measures 17-20).

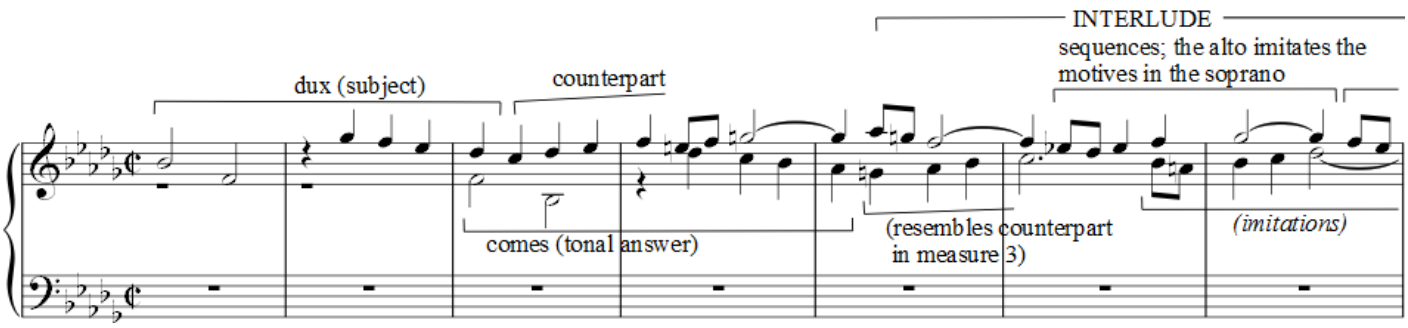


100 See example 45.
101 See example 30.
102 See example 36.
103 See also these Fugues: G minor, WTC I (measure 4, example 52); F major, WTC I (measures 8/9, example 60). In the Fugue in F# minor, WTC II (measures 7/8, example 71) there is a relation with the previous as well, but the relation is less obvious than in all other examples mentioned here.



The five-part Fugue in Bb minor, WTC I contains an extremely long interlude between the comes and the second dux, especially given the very short subject: from measure 5 through measure 9. The melody of the Soprano is actually even much longer: it does not end before the first beat of measure 17, and harmonically even at that point there is no close: the first cadence is in measure 24/25, in the relative major key, Db major. Measure 14 contains a second interlude (a short one), that connects the second comes with the third dux:

Example 48
Fugue in Bb minor, WTC I - exposition (measures 1-25)



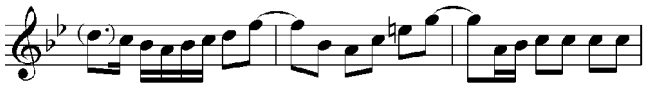
During the second dux (ie, at the third entrance of the subject) it becomes clear whether a fugue contains a *countersubject,* or just *(free) counterpoints:* we only speak of a countersubject when the counterpart to the *first comes* reappears as the counterpart to the *second dux.* Usually the countersubject reappears in the further course of the fugue, again (mostly) in conjunction with the subject. Apart from that, it can reappear, wholly or in part, in interludes or episodes.

In fugues containing subjects that are answered *tonal* (ie, subjects with 5^ at the beginning, and modulating subjects) the countersubject must be partly changed when it reappears together with the second dux (compared with the countersubject to the first comes); normally the changes affect *at least the first notes.* The reason is of course that in these cases the dux and the comes entrances differ; the differences between dux and comes make it then necessary to adapt the countersubject as well. See the Fugue in Bb major, WTC I[104] and compare with example 49:

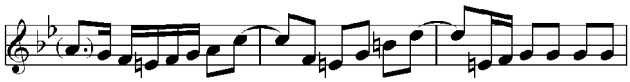
104 See example 55.

Example 49
Fugue in Bb major, WTC I

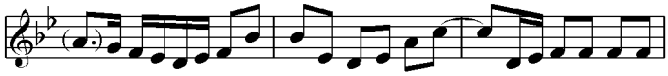
countersubject in measure 5:



countersubject in measure 8 would be, whenliterally transposed:



but is modified in:



Also, when an interrlude stands between the second and third entrance of the subject, the structure of this interlude often causes changes in the beginning of the countersubject.[105]

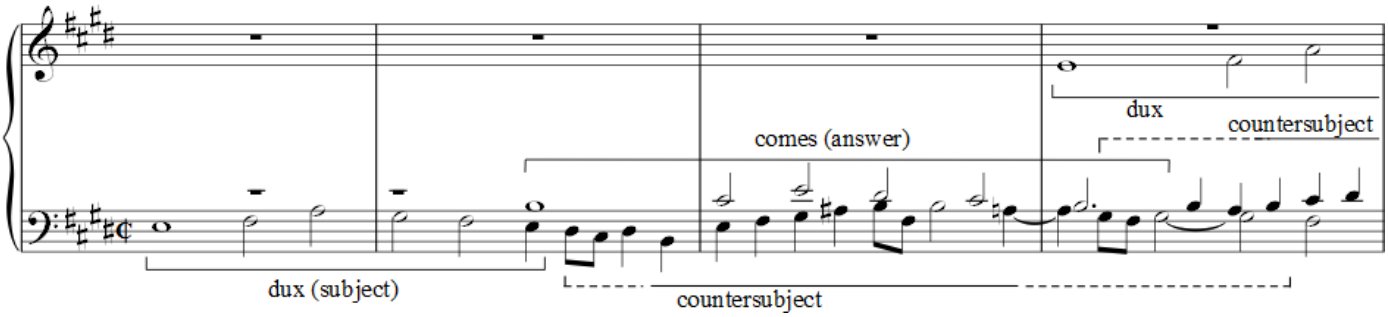
When *two* countersubjects are used, things are of course even more complex, particularly in four-part fugues, because the second countersubject then probably reappears during the fourth entrance of the subject; the subject and the two countersubjects usually have to be written in triple counterpoint at the octave.[106]

The Fugue in E major, WTC II contains a very particular use of a countersubject : in measure 4, the countersubject to the second dux is in fact distributed over two voices (bass and tenor); however, the beginning of this second appearance of the countersubject at the same time forms the end of its first entrance, as evidenced by the *third* appearance of the countersubject in measure 6/7 (in the Alto): at the end of the first entrance of the countersubject (in measure 3) we see a tied A - a situation that can not be repeated (and transposed) by the Tenor in measure 5 - therefore the end of the countersubject in measure 5 is changed. During the final cadence of the exposition a variant of the countersubject is showing up (in the tenor, in measure 8); moreover, these rhythmical patterns in the Alto and Soprano:

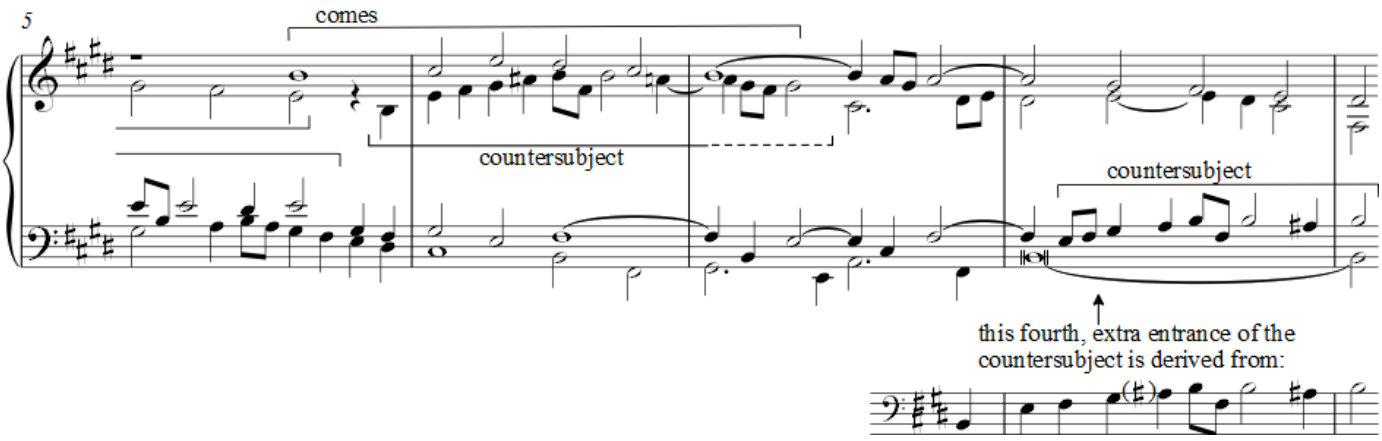
 and  are derivatives of the countersubject; the same goes for the ascending leaps (a fourth up) in the Bass and the Tenor:

 and 

Example 50
Fugue in E major, WTC II[107] - exposition (measures 1-9)



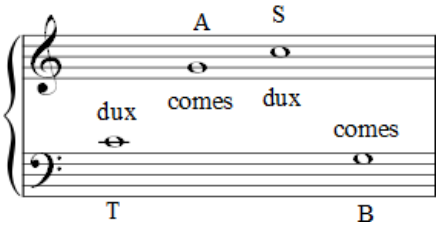
105 See example 55 (measure 10).
106 See the scheme on page 37.
107 See example 64 for the section from measure 9.



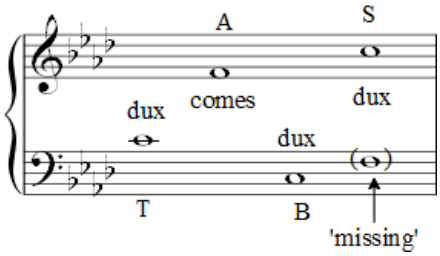
In four-part fugues the fourth entrance of the subject normally is a comes again; in the Well-Tempered Clavier only a few exceptions to this principle can be found.[108] This means that normally the fourth entrance relates to the third as the second to the first. See example 51a - the examples 51b and 51c are two exceptional cases:

Example 51

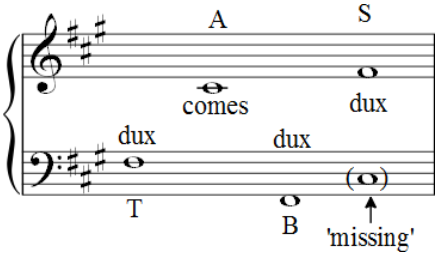
a. normal consecution of entrances, for instance:



b. Fugue in F minor, WTC I:



c. Fugue in F# minor, WTC I:



When, in a four-part fugue, the second and third entrance are separated by an interlude, and when thereafter the fourth entrance follows immediately after the third, we can speak of *imitation in pairs,* because two entrances together are perceived as a group. This is even more so, when in both groups a higher voice imitates a lower, or vice versa. So for instance like this:[109]

	----- first group of entrances -----		*--- second group of entrances ---*
Soprano		----- comes -----	
Alto	------ dux ------	*interlude*	
Tenor		*(all voices)*	----- comes -----
Bass			------ dux ------

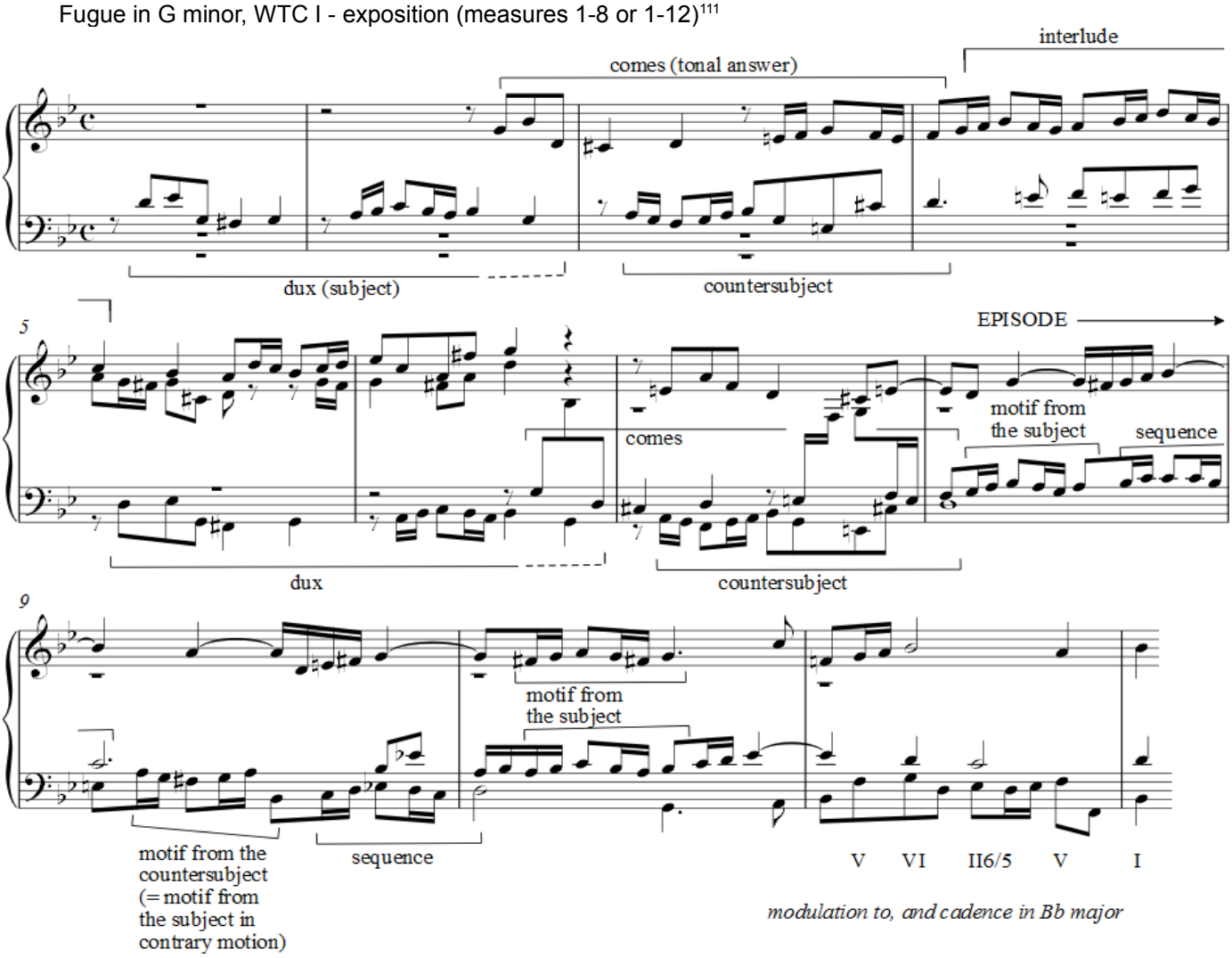
This is exactly what happens in (for instance) the exposition of the Fugue in G minor, WTC I[110]:

108 These exceptions are all in WTC I: namely:
- Fugues in F minor and F# minor; in both fugues the cosecution of entrances in the exposition is: dux-comes-dux-dux, compare example 51 with example 32 (the score of the exposition of the Fugue in F minor, WTC I)
- Fugue in C major: in this fugue the *third* entrance is a comes - see example 61
- Fugue in **C**# minor; this fugue is 5-part; the fourth entrance in the exposition is not clearly dux or comes, as it is changed, and seems to modulate to the subdominant key. The *fifth* entrance is then a clear dux again. So the consecution is: dux-comes-dux-comes-dux/comes???-dux. See example 70.

109 Compare with the beginning of Josquin's *Missa Pange Lingua* in example 3!

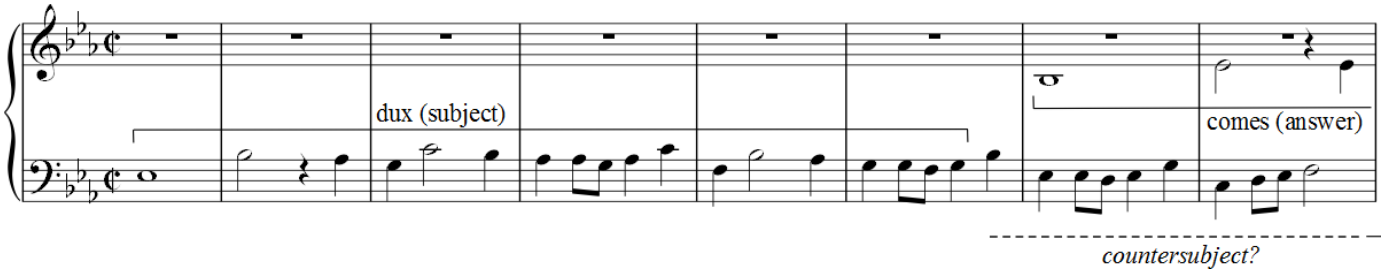
110 When looking at this fugue, we should also keep in mind though that it is very exceptional that the bass is entering

Example 52
Fugue in G minor, WTC I - exposition (measures 1-8 or 1-12)[111]



In the Fugue in Eb major, WTC II the interlude in measure 20 is 'technically' superfluous: the comes in measure 20 could have started immediately after the second dux, in measure 19. In other words: the connection between the second comes and the second dux could have been the same as in measure 7.[112] Maybe there is a *motivic* 'reason' for this interlude, as it motivically relates to the interlude after the first comes (measures 12/13), and to the final cadence of the exposition (measures 27-30):

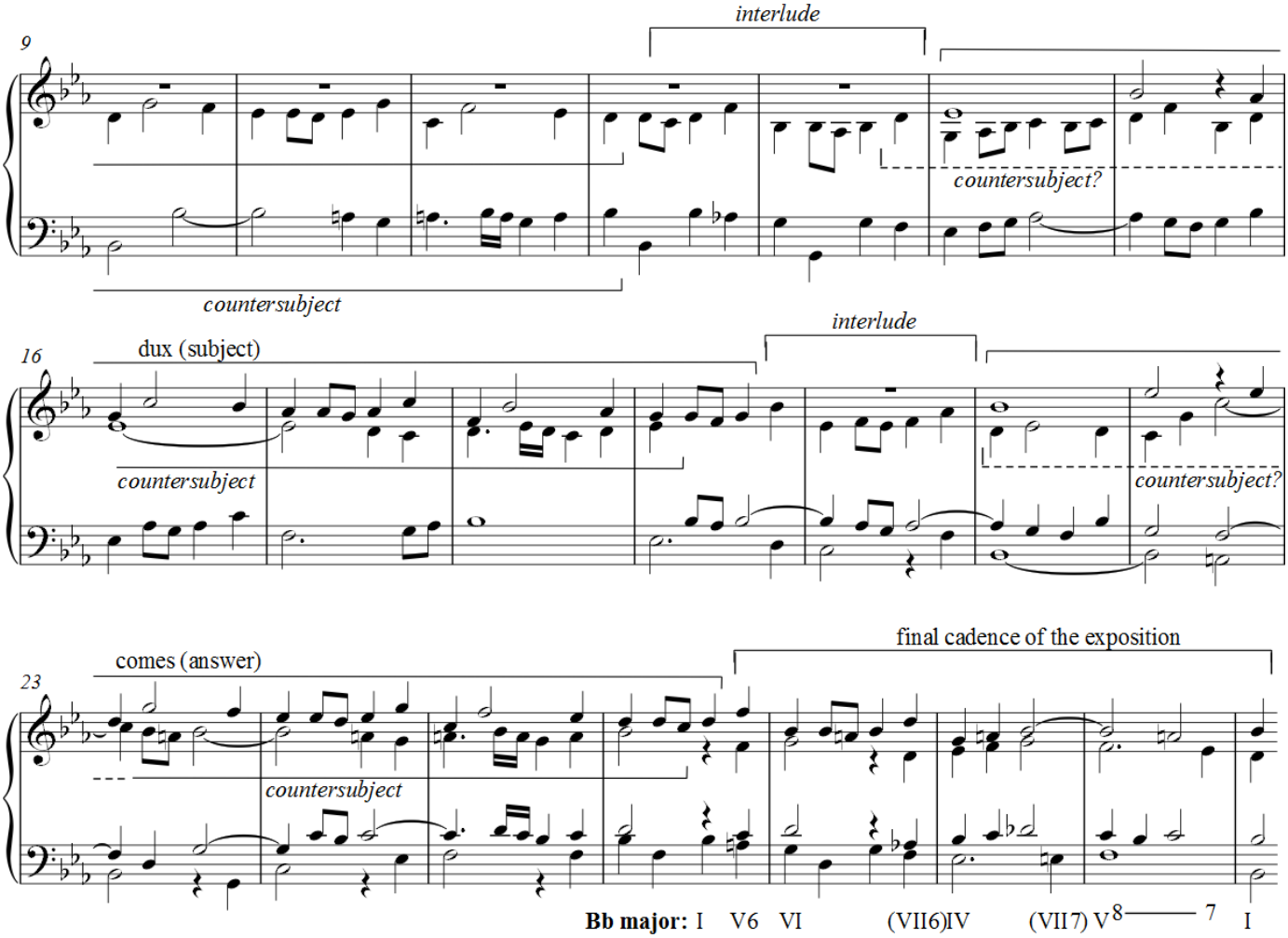
Example 53
Fugue in Eb major, WTC II - exposition (measures 1-30)



before the tenor, leaving a temporarely 'gap' between alto and bass. See also the comments on page 52.

111 See example 69 for the complete score of this fugue.

112 See also the Fugue in C minor, WTC II (example 59). In this fugue, a 'technically superfluous' interlude stands between the third and fourth entrance of the subject as well.



In four-part fugues, we have of course 24 possibilities for the consecution of entrances of the subject through all voices.[113] In the WTC however, Bach uses only nine, namely:

(S=Soprano, A=Alto, T=Tenor, B=Bass)

1

		S	
	A		
T			
			B

2

S			
	A		
		T	
			B

3

			S
A			
	T		
		B	

4

			S
		A	
	T		
B			

5

	S		
A			
			T
		B	

6

	S		
A			
		T	
			B

7

			S
	A		
T			
		B	

8

		S	
A			
	T		
			B

9

		S	
			A
T			
	B		

113 See also the comments on the consecution of voices in three-part fugues on page 43.

These schemes also show that, starting from the second entrance of the subject, usually every new entrance in an exposition is in an *adjacent voice* (ie: in a voice directly above or below a voice that is already present): in this way usually no 'gaps' between voices occur. Only two of the nine schemes show a 'gap', the fifth and ninth: in scheme 5 the bass appears earlier than the tenor, thus causing a 'gap' between alto and bass; in scheme 9 a 'gap' is created between tenor and soprano. Consecutions 5 and 9 occur in total four times in the entire WTC (within a total of 19 four-part and two five-part fugues).[114] In other works by Bach, they are even rarer.

Some other (somewhat less specific) conclusions we can draw from these schemes:

- the last entrance of the subject in a four-or five-part fugue is rarely in a middle voice, and:
- imitation in pairs[115] occurs, except for the four exceptions (schemes 5 and 9), in the WTC only when the consecution of entrances is from the highest to the lowest voice or from the lowest to the highest voice (schemes 2 and 4).

As a rule, voices, once they have finished an entrance of the subject, stay present during the rest of the exposition; there are some exceptions though, for example:
- in the Fugue in G minor, WTC I the alto pauses in measure 7
- in the Fugue in C minor, WTC II the tenor is not present from measure 7.[116]

A few schemes of possible four-part expositions (S=Soprano, A=Alto, T=Tenor, B=Bass):

S				comes	See WTC II, E major (example.50), WTC II, Eb major; (example 53
A			dux	countersubject	
T		comes	countersubject	free counterpoint	
B	dux	countersubject	free counterpoint	free counterpoint	

S			dux	countersubject	See WTC I, B major WTC II, G minor Compare: WTC I, F minor (example 32)
A		comes	countersubject	free counterpoint	
T	dux	countersubject	free counterpoint	free counterpoint	
B				comes	

S				comes	See WTC I, B minor (example.35), WTC II, D# minor
A	dux	countersubject	free counterpoint	free counterpoint	
T		comes	countersubject	free counterpoint	
B			dux	countersubject	

114 Namely: WTC I: G minor (see example 52), Ab major and A minor, and WTC II: Bb minor.
115 Compare the beginning of Josquin's *Missa Pange Lingua* in example 3.
116 Fugue in G minor, WTC I: see example 69; Fugue in C minor, WTC II: see example 59.

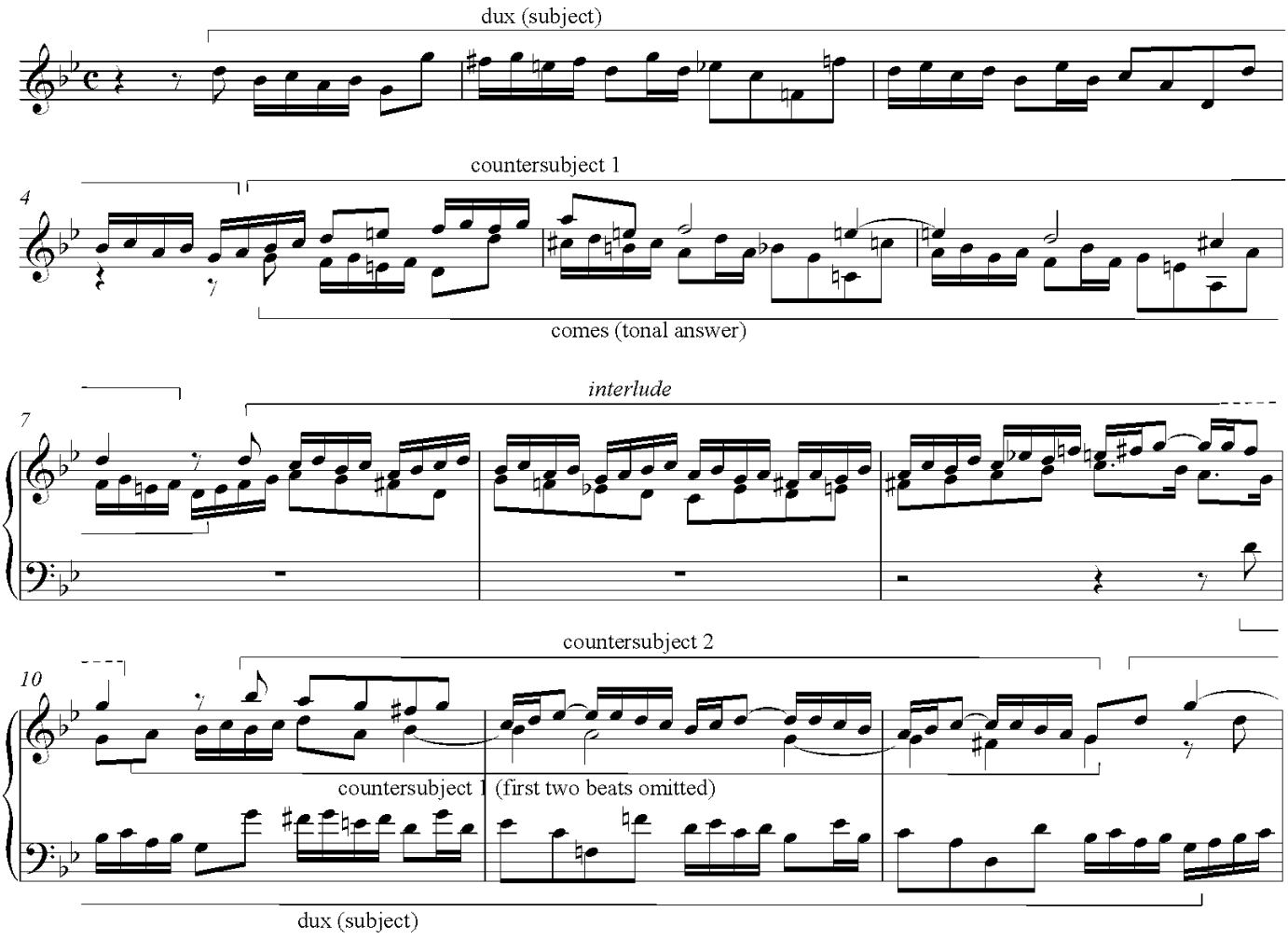
In the Organ Fugue in G minor, BWV 542 we have a clear example of a fugal exposition in which two countersubjects are used. This exposition sounds somewhat like a canon; this is caused by the pattern the entrances follow (from the highest to the lowest voice), and by the fact that soprano and alto have the subject and the first and second countersubject in the same order. The exposition contains two interludes, in measures 7-9 and 12-14. Here is a scheme of the exposition; below the scheme you see the score:

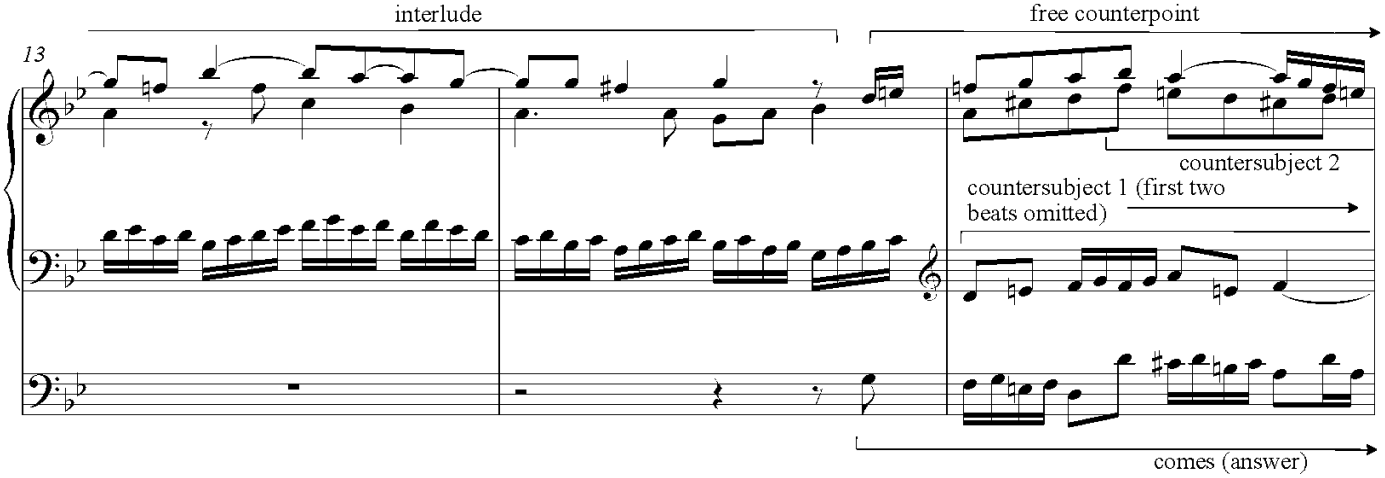
measure: 1 4 7 10 12 15

interlude *interlude*

S	dux	countersubject 1		countersubject 2		free counterpoint
A		comes		countersubject 1		countersubject 2
T				dux		countersubject 1
B						comes

Example 54
Organ Fuge in G minor, BWV 542 - exposition (measures 1-17)





After the last entrance of the subject in the exposition often a short 'conclusion' follows, ending with an authentic cadence (sometimes somewhat hidden, or imperfect), in either the home key, the dominant key, or (when the fugue is in a minor key) the relative major key. Another possibility is that we end with a half cadence, normally in the home key. In these concluding measures the subject is absent, so we could label them 'interlude' or even 'episode'; on the other hand, terms like 'final section' or 'final cadence' seem to be more adequate, as there is mostly no real divison after the last entrance of the subject. Moreover, such final sections often function as conclusion of a larger section of the form (ie the complete exposition, including the final section).[117]

Equally often, there is no division at all after the last entrance of the subject in the exposition; instead, immediately either an episode, or a counterexposition follows, without interruption by a cadence or half cadence[118]. In some fugues a - sometimes 'weak' - cadence is formed *during* the last entrance of the subject; as the last entrance is finished, we go immediately into an episode.[119]

adapted entrance and false entrance

We have seen before that the subject sometimes is changed as it appears as comes (tonal answer)[120] . But sometimes the subject (dux or comes) is changed for other reasons. A modulation occuring *during* an entrance of the subject, in the further course of the piece (so: *after* the exposition), sometimes is a reason for changes in the subject. Such modulations then differ from the common modulations in the exposition[121]. The subject must as it were 'adapt to' the modulation(s), the keys, and the harmony in general. Thus, in the Fugue in Bb major, WTC I, during a comes entrance that starts in G minor (in measures 26-27), we do not modulate to D minor (which could be expected), but to C minor instead. The comes is adapted to this changed harmonic context: from the fourth note it is a tone 'too low':

117 See the Fugues in Bb minor, WTC I (example 48), in Eb major, WTC II (example 53). In the Fugue in E major, WTC II (example 50) the concluding (half) cadence is from the second half of measure 7, until the first beat of measure 9.

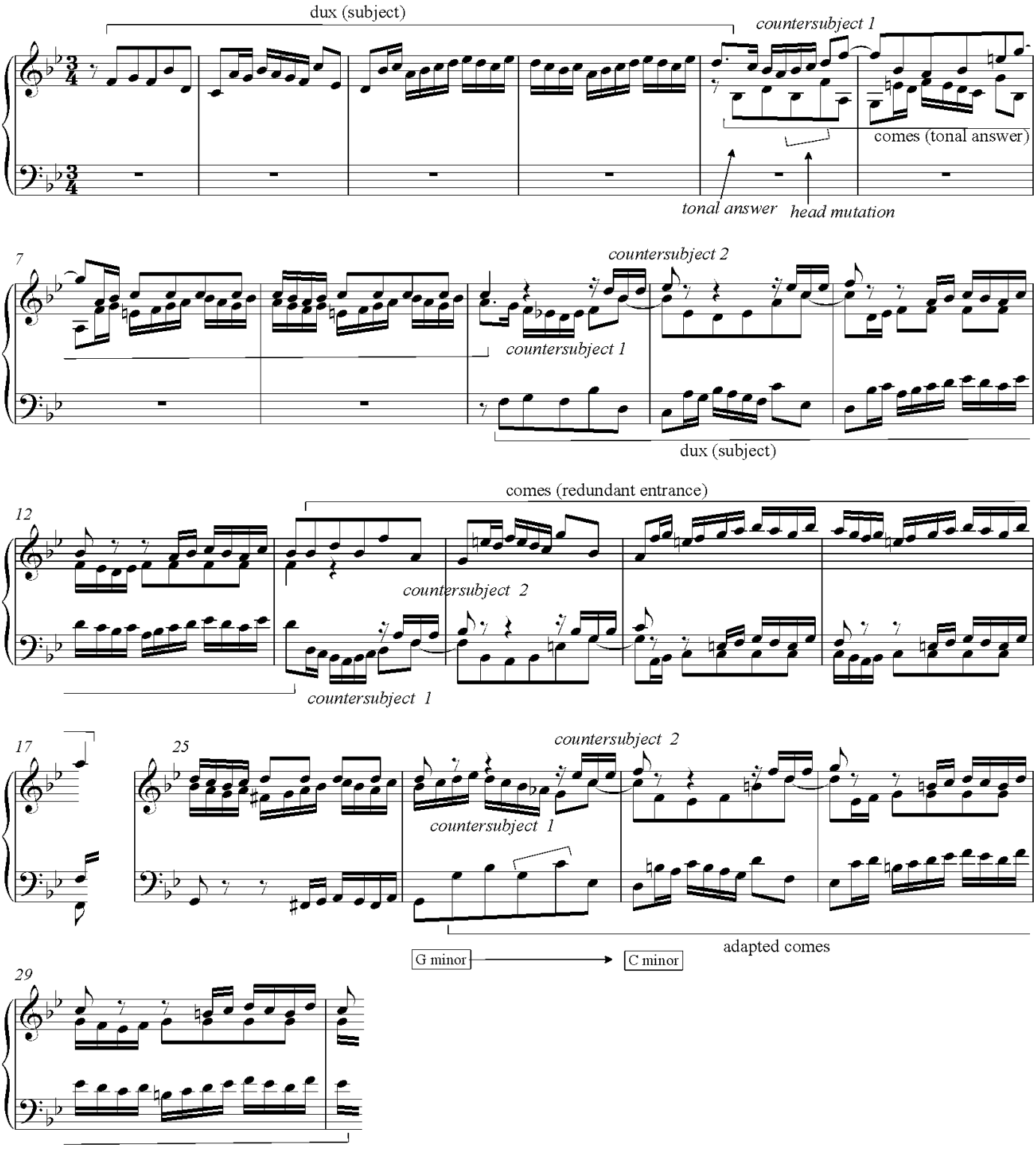
118 Episode after the exposition: see for instance the Fugues in C# minor, WTC II (example 45) and in F major, WTC I (example 60). Counterexposition: see for instance the Fugue in C minor, WTC II (examples 58 an 59), and the explanations in the chapters:
- *exposition with redundant entrance; counterexposition* and
- *further, developmental sections in fugues; application of stretti and other 'contrapuntal techniques (contrary motion, augmentation and diminution); episodes*

119 See for example these Fugues: WTC II, C major (example 46); WTC I, C minor (example 47); WTC I, G minor (example 52 or 69).

120 See the chapter: *answering subjects not containing a modulation*

121 This means that the modulation is not from the home key to the dominant key during a comes entrance, or, when the subject modulates: from the home key to the dominant key during the dux entrance, or from the dominant key to the home key during the comes entrance.

Example 55
Fugue in Bb major, WTC I, measures 1-17 (exposition) and measures 25-28



Sometimes a subject undergoes changes already in the exposition (ie other changes than the usual differences between dux and comes when the answer is tonal), usually for harmonic reasons. In the Fugue in C minor, WTC II[122] we do not modulate to the minor dominant key during the second comes entrance (we do *not* modulate to G minor in measure 7). Instead, we stay in the home key C minor - that is why the comes is changed: Bb from the first comes (measure 2) is changed to B natural. We can label this entrance: adapted subject, as it is changed in order to fit in another key. Or even more precise: we can speak of an adapted comes. This is also the case in the Fugue in Bb major, WTC I: there we can call the bass entrance from measure 26 'adapted comes' as well.[123]

In the Fugue in G minor, WTC I[124] the entrance of the subject in the Alto voice in measure 17 is adapted at three points:

- the first note should have been Bb (as it is a comes, and the comes should form a tonal answer, like it does in the beginning of the fugue)
- modulation to the dominant key (in this moment: to F major) is avoided: the fourth tone is Eb instead of E
- from the third beat of measure 18 the entrance is a tone lower than the original form, in connection with the modulation to Eb major (instead of F major).

The first of these changes we find already in a preceding entrance, in measure 15, in the soprano: there the first tone of the (probably) dux is changed to C as well. Both in measure 15 as in 17 the reason for the change is the underlying harmony (an F-chord, V in Bb major); in 17 the C is necessary because of the stretto[125] with the bass (the bass has A as the alto is entering).

In measures 14-18 of the Fugue in C minor, WTC II[126] similar adaptations of entrances occur. Most of these changes can be explained as caused by the pretty complex stretto in these measures, the modulatory character adding to the complexity. The changes make it difficult, maybe even impossible to distinguish between dux and comes entrances in measures 17 and 18 - even though this distinction should be in principle easy in this fugue, because of the tonal answer (that makes that the intervals in dux and comes slightly differ).[127]

In the Fugue in E major, WTC II one clearly adapted entrance occurs in measures 11 and 12: here the dux in the soprano ends for harmonic reasons on E# instead of E.[128] Later in the same fugue, in measures 23-26, the subject is changed in another way[129], as there is not a concrete (for instance: harmonic) reason to introduce the melodic and rhythmic changes from the dux entrance in the soprano in measure 23; maybe Bach wanted to create variety by introducing the passing tone A and the syncopation on the B. On the other hand, there are pretty clear reasons (connected with the stretto-technique in these four measures) for the chromaticisms in the subsequent three entrances of the varied subject in alto, bass and tenor (see the comments in the score in example 11).

In the Fugue in D# minor, WTC I we find something similar: whereas dux and comes in the exposition follow predictable paths,[130] later in the fugue several variants are used. Some of these are connected with the harmony (often the changes are because of modulations taking place during an entrance), and therefore can be called: adapted entrances, and some are changed for other reasons; sometimes it stays unclear why precisely they are changed. I will mention a few here (see example 56):

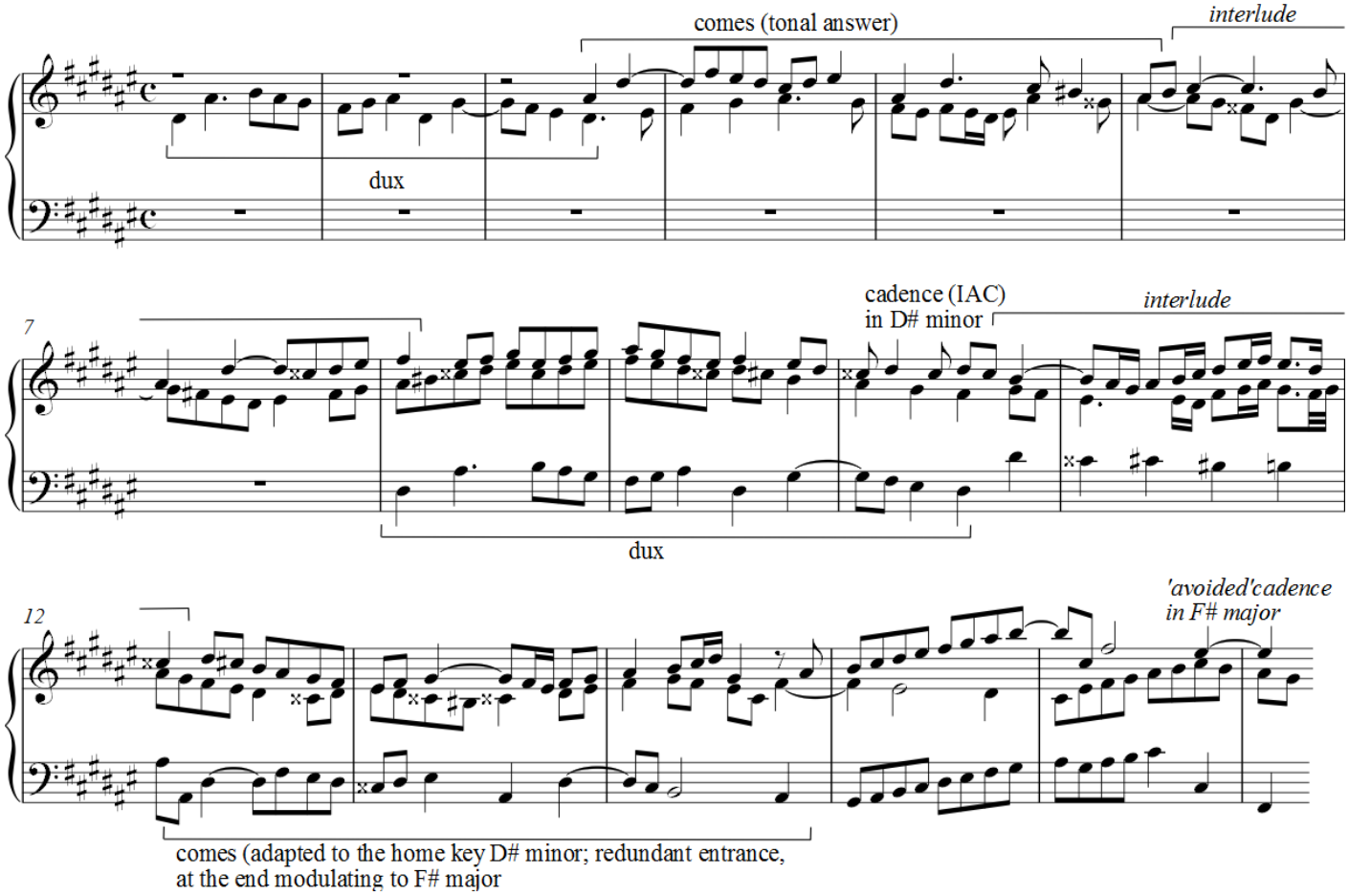
---

122 See example 59. This adapted comes reappears in the counterexposition: see the middle voice in measure 10.
123 See example 55.
124 See example 69.
125 Stretto: see the chapter: *further, developmental sections in fugues; application of stretti and other 'contrapuntal techniques (contrary motion, augmentation and diminution); episodes*
126 See example 65.
127 Compare example 59, where you can see the beginning of this fugue.
128 See example 63. The beginning of this fugue you find in example 50. See also examples 11 and 21.
129 See example 11.
130 See measures 1-10 in example 56, and compare examples 10 and 26.

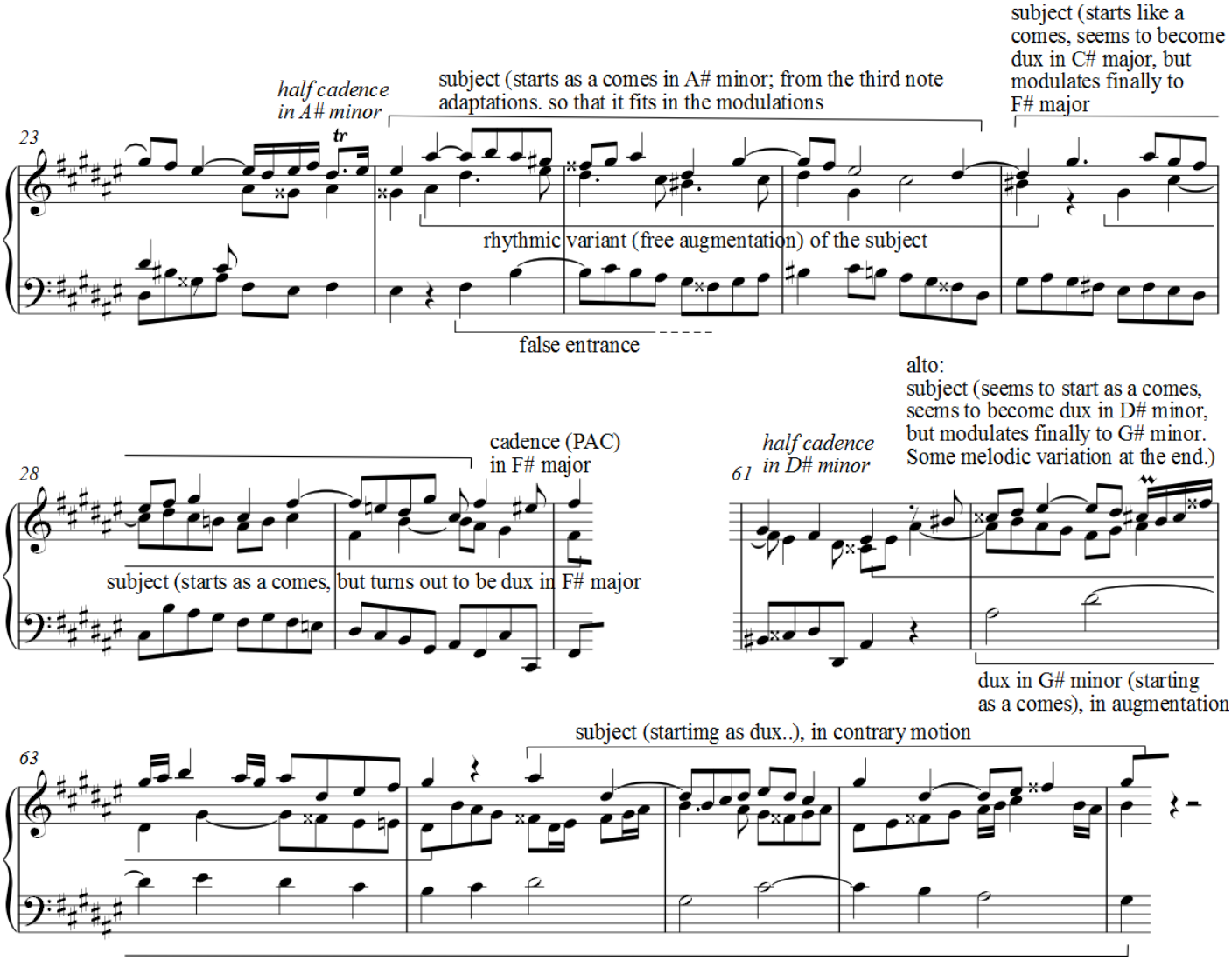
In the stretto from measure 24[131] the first entrance (in the soprano) is adapted, first to fit in the half cadence in A# minor, and thereafter to fit in the modulations; this soprano entrance is combined with a free augmentation[132] in the middle voice and a false entrance in the bass. We generally speak of a false entrance when a voice *seems* to start an entrance, but does not finish it - or forms such extreme variation that the subject becomes from a certain point unrecognizable. Here, the bass clearly suggests an entrance at the beginning; but though all eighth-note motion in the bass from the third beat of 25 (until 30) certainly is *derived from* the subject, the subject itself is not present any longer.[133] In the next stretto (measures 27-29, soprano and alto) the entrances can be seen as adaptations agan (the subject is changed here mainly for harmonic reasons).

From 61, the alto has an adapted entrance, with some added chromatic notes at the end (in measure 63); this alto entrance is part of a stretto in which the (literal) augmentation of the subject (in the bass) is combined with the original subject (alto), and later with the contrary motion in the soprano[134]. This contrary motion from measure 64 is adapted to its surroundings as well: it starts as a dux (see the leap down a fifth from the first note), but continues as a comes (see the third *after* the leap, from D# to B). Therefore, from the third tone this entrance in contrary motion is a tone lower than what could have been expected:

Example 56
Fugue in D# minor, WTC I, measures 1-10 (exposition), 23-30 and 61-67

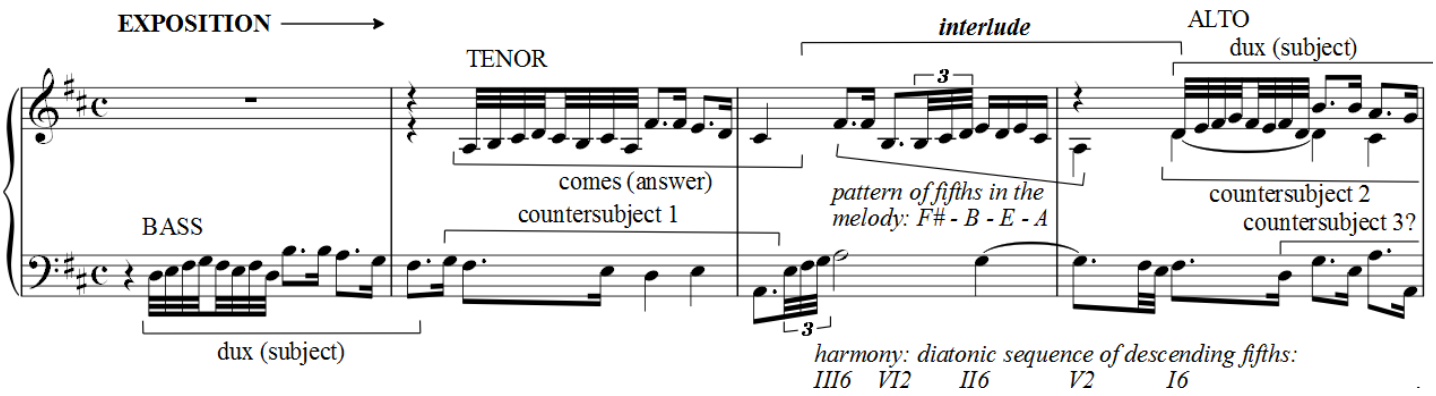


131 Stretto: see the chapter: *further, developmental sections in fugues; application of stretti and other 'contrapuntal techniques (contrary motion, augmentation and diminution); episodes*
132 Augmentation: see chapter: *Some general observations about polyphony/polyphonic techniques.*
133 Compare the false entrances in the fugue in C major, WTC I; see example 61, and the text after this example.
134 Augmentation, contrary motion: see chapter: *Some general observations about polyphony/polyphonic techniques.*

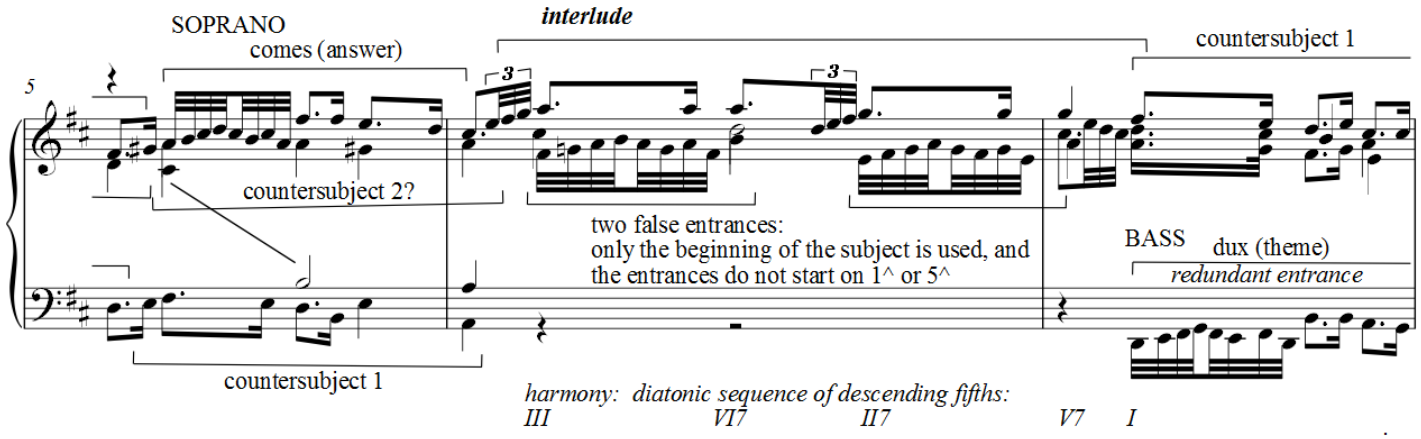


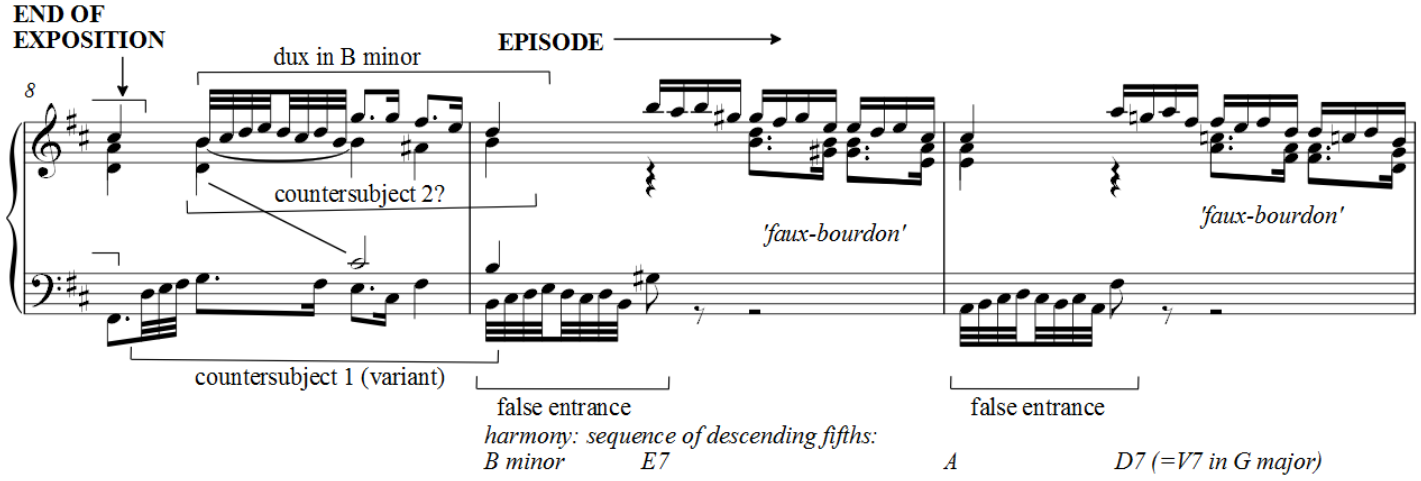
In the first episode of the Fugue in D major, WTC 1 (measures 9 and 10, see the annotations in example 57[135]) false entrances are used in a sequential pattern (descending fifths), after an exposition with four regular entrances (starting from the bass, in this succession: Bass – Tenor – Alto – Soprano). In the Fugue in C major, WTC I[136] the soprano entrance in measure 24-25 can be considered as a false entrance, and maybe the alto in the second half of measure 18 is a false entrance as well.

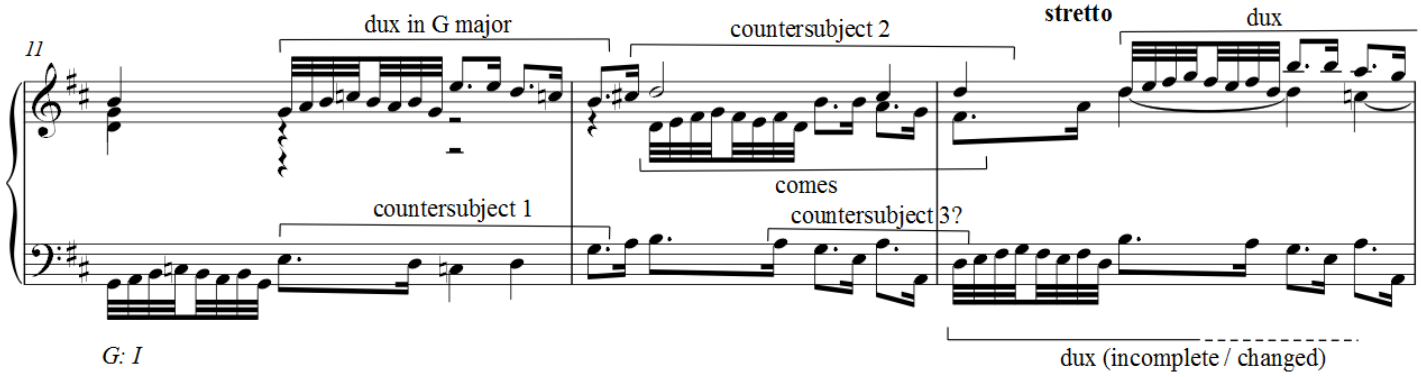
Example 57
Fugue in D major, WTC I – complete score

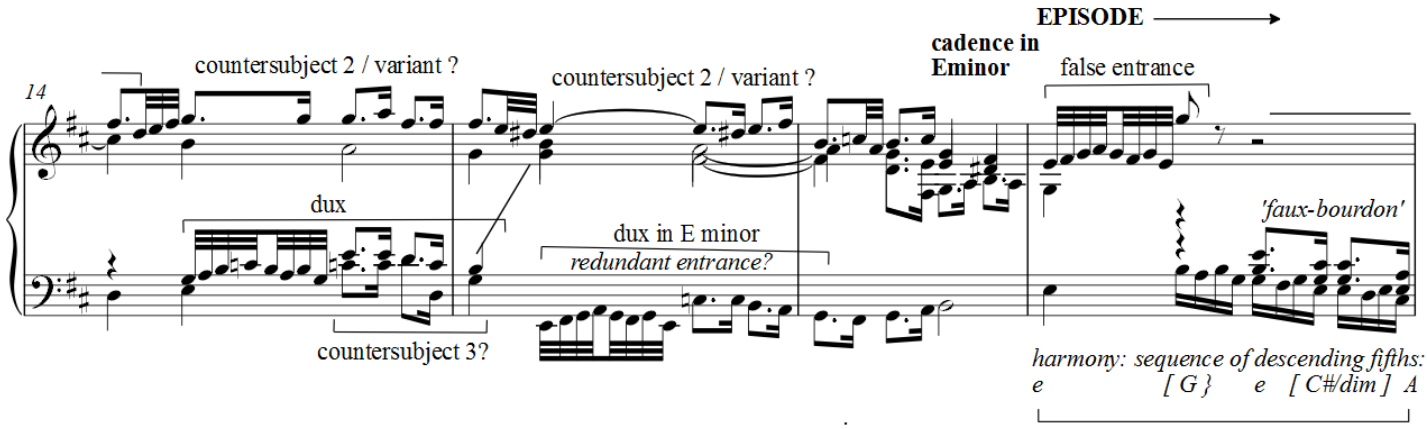


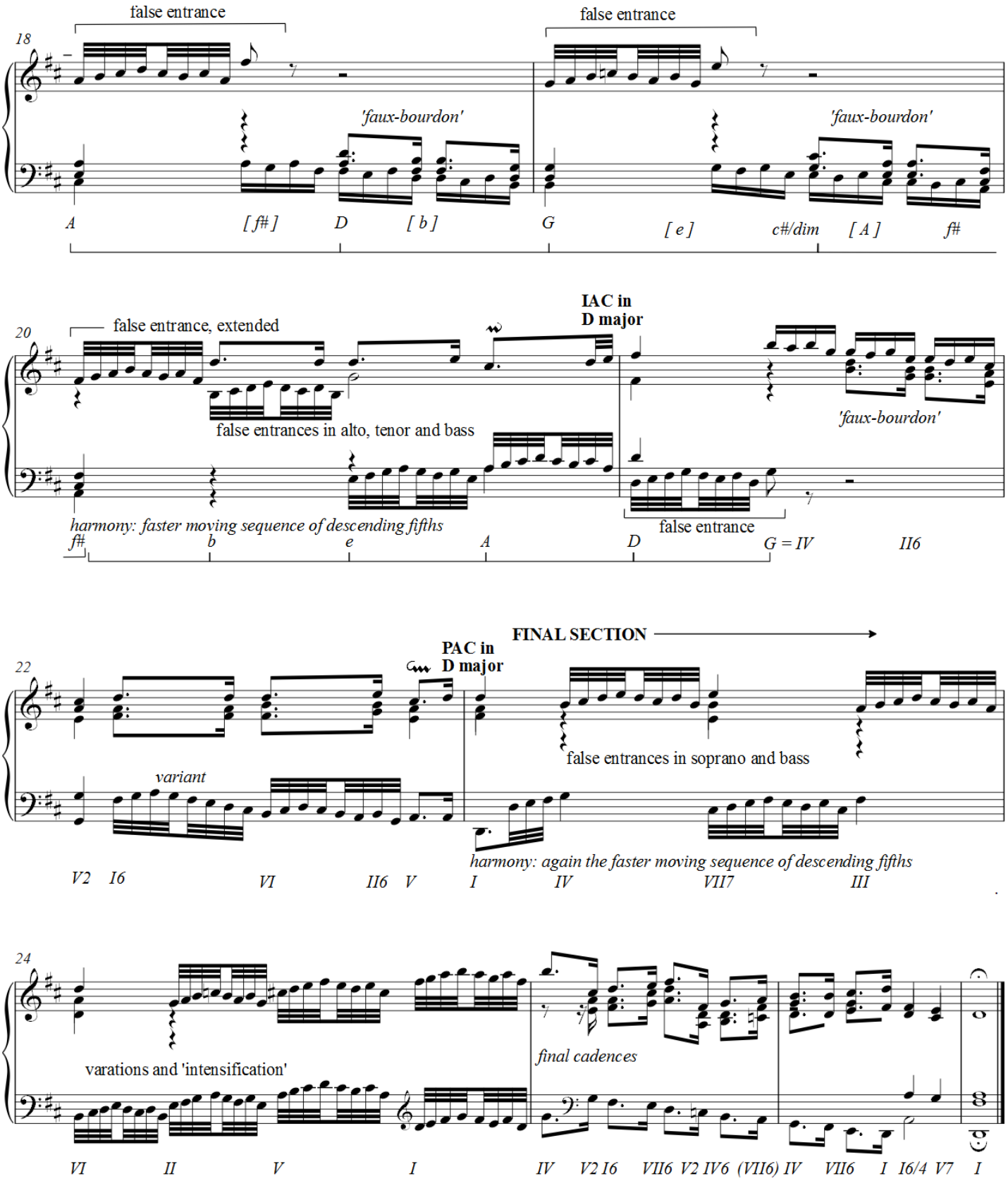
135 See page 75/76 for a somewhat detailed description of the *episodes* in this fugue.
136 See example 60 for the complete score of this fugue.


SOPRANO
comes (answer)
interlude
countersubject 1
5
countersubject 2?
two false entrances:
only the beginning of the subject is used, and
the entrances do not start on 1^ or 5^
BASS
dux (theme)
redundant entrance
countersubject 1
harmony: diatonic sequence of descending fifths:
III VI7 II7 V7 I


END OF
EXPOSITION
dux in B minor
EPISODE
8
countersubject 2?
'faux-bourdon'
'faux-bourdon'
countersubject 1 (variant)
false entrance
false entrance
harmony: sequence of descending fifths:
B minor E7 A D7 (=V7 in G major)


dux in G major
countersubject 2
stretto
dux
11
countersubject 1
comes
countersubject 3?
G: I
dux (incomplete / changed)


EPISODE
cadence in
Eminor
14
countersubject 2 / variant ?
countersubject 2 / variant ?
false entrance
dux
dux in E minor
redundant entrance?
'faux-bourdon'
countersubject 3?
harmony: sequence of descending fifths:
e [G } e [C#/dim] A



Maybe even in the Fugue in C minor, WTC II, the motives in tenor and alto in measure 6 are false entrances?[137]

137 See example 59.

exposition with redundant entrance; counterexposition

Expositions containing more entrances of the subject than the number of voices in the fugue are fairly frequent. As these extra entrances are so to speak 'superfluous' (as we can consider an exposition as 'complete' as soon as the subject has occurred in all voices) we can call such entrances 'redundant', and speak of an exposition with redundant entrances, when there is *at least one* entrance more than the number of voices. An example: The Fugue in Bb major, WTC I[138] is three-part; yet the exposition contains *four* entrances of the subject, as in this scheme:

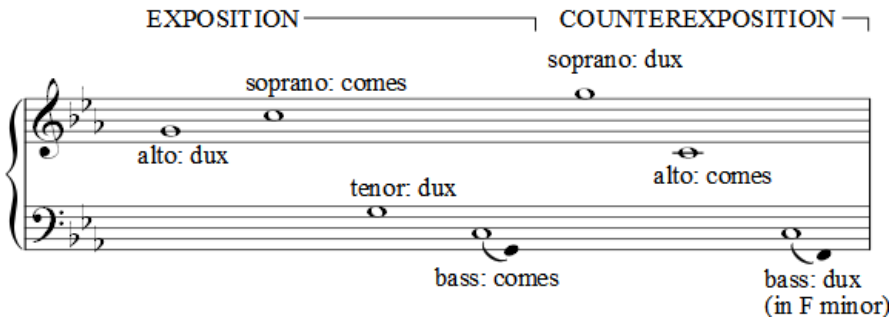
measure: 1 5 9 13

S	dux	countersubject 1	countersubject 2	comes
A		comes	countersubject 1	countersubject 2
B			dux	countersubject 1

To the listener, such additional entrances tend to suggest that the fugue has more voices than it actually has, especially if the extra entrance(s) take place in a different *register* than all previous entrances: when we listen to a polyphonic composition, we are inclined to believe, when a subject is repeated at a different pitch, that we hear the entrance of *yet another voice*. In this respect, such redundant entrances are a perfect way to mislead the listener... The exposition of the Fugue in D# minor, WTC I [139] could be seen as an example of a fugal exposition with a single redundant entrance as well: After all three voices have completed their entrances in measure 10, and after a short interlude with *lamento bass* (in measure 11), the bass has its second entrance (this time a comes). This entrance can be regarded as part of the exposition; on the other hand, the fact that we modulate away from the home key *during* this fourth entrance (to the relatiev major key, F# major) seems to contradict this interpretation.

Some expositions contain more than just a single additional entrance. In those cases we often can speak of a counterexposition. This is the case as, after the exposition (ie after all voices have had one dux- or comes-entrance) the *distribution of dux and comes* between the voices is *reversed:* the voice or voices that have had a dux entrance in the exposition, get a comes entrance in the counterexposition, and vice versa. Thereby, in the counterexposition, the entrances are normally (at least partly) at *new pitches,* which probably leads to the perception of more voices in exposition and counterexposition *together* than in reality are involved (like we probably often believe that we hear an 'extra voice' in an exposition with a redundant entrance). Often exposition and countererposition *together* form the first large section of the piece - especially in the fairly common case that there is no conclusive cadence at the end of the exposition. In the Fugue in C minor, WTC II, the pattern of all seven entrances in exposition and counterexposition is as follows:

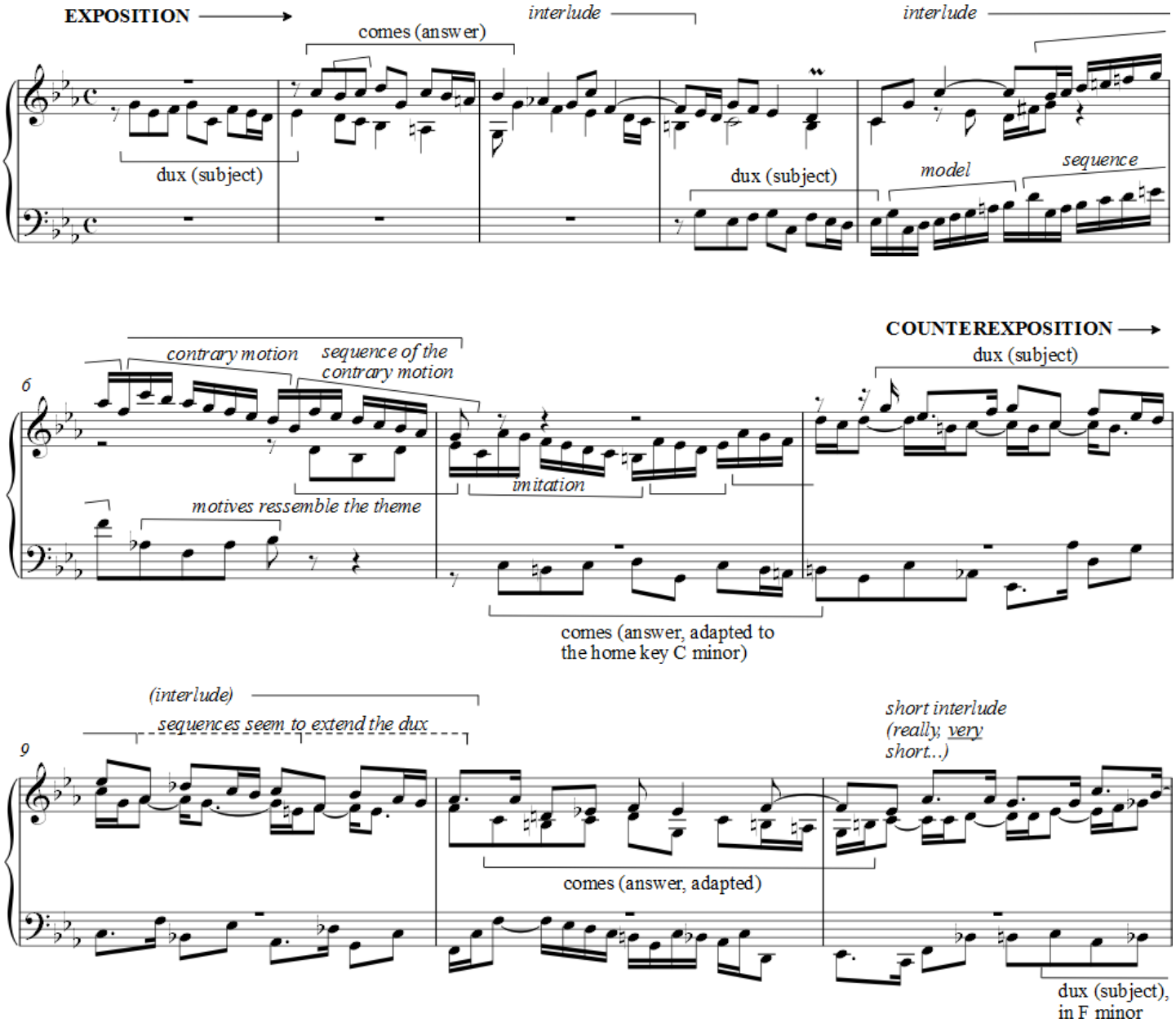
Example 58
Fugue in C minor, WTC II: entrances of dux and comes in the exposition and the counterezposition



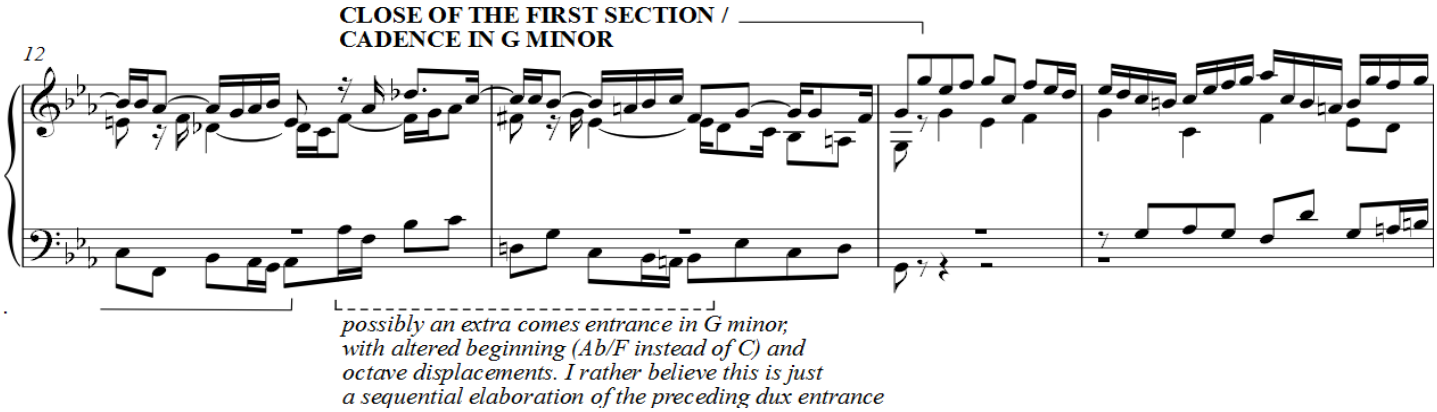
138 See example 55. This fugue contains two countersubject, a phenomenon we encounter also in the Organ Fuge in G minor, BWV 542 (example 54), and possibly in the Fugue in D major, WTC I (example 57).
139 See example 56.

The scheme in example 58 shows at which actual pitch all dux- and comes entrances in the exposition and counterexposition start; it is clear that during the counterexposition the 'pitch space' changes, and is considerably extended, compared to the exposition: The soprano entrance is higher than in the exposition, the alto entrance fills the 'gap' between the alto and tenor entrances in the exposition. And, though the bass entrance in the counterexposition starts on the same tone as in the exposition, it also extends the ambitus, as the bass has now a *dux,* in F minor: the lowest tone being F, instead of G. There is clearly no cadence at the end of the exposition (see the score in example 59), whereas we hear a clear perfect authentic cadence in G minor three measures after the end of the counterexposition. Therefore, the first major section is until the first beat of measure 14, and contains exposition *and* counterexposition; there is no division between both in or around measure 8:[140]

Example 59
Fugue in C minor, WTC II, measures 1-14 (15)[141]



140 The fact that the first cadence in measure 14 also has a symbolic meaning: 14 can be regarded as the 'Bach number *par excellence'*. See the comments on this number on pages 69 and 70.
141 See example 65 for the second part of this fugue.



The Fugue in E major, WTC II[142] contains a counterexposition that exploits all four voices. In the scheme below is visable how the entrances are reversed: bass and alto have dux entrances in the exposition, and comes entrances in the counterexposition, whereas tenor and soprano enter as comes in the exposition, and have dux entrances in the counterexposition. Other than in the Fugue in C minor, WTC II[143], in this fugue only one entrance in the counterexposition is indeed at a 'new pitch': the last entrance, starting on the low B in the bass in measure 10. It is also visable that the *consecution of voices* is changed in the counterexposition: In the exposition we find the consecution B – T – A – S , in the counterexposition A – T – B – S . This counterexposition forms a *stretto*[144] at the same time: the entrances in alto and tenor, and in bass and soprano overlap:

measure		4		7	8	9	10	
			comes					dux
		dux	*c.s.*			comes		
	comes	*c.s.*			*c.s. variant*	dux		
dux	*c.s.*							comes
	EXPOSITION			*episode; or: close of the exposition*			*COUNTEREXPOSITION*	

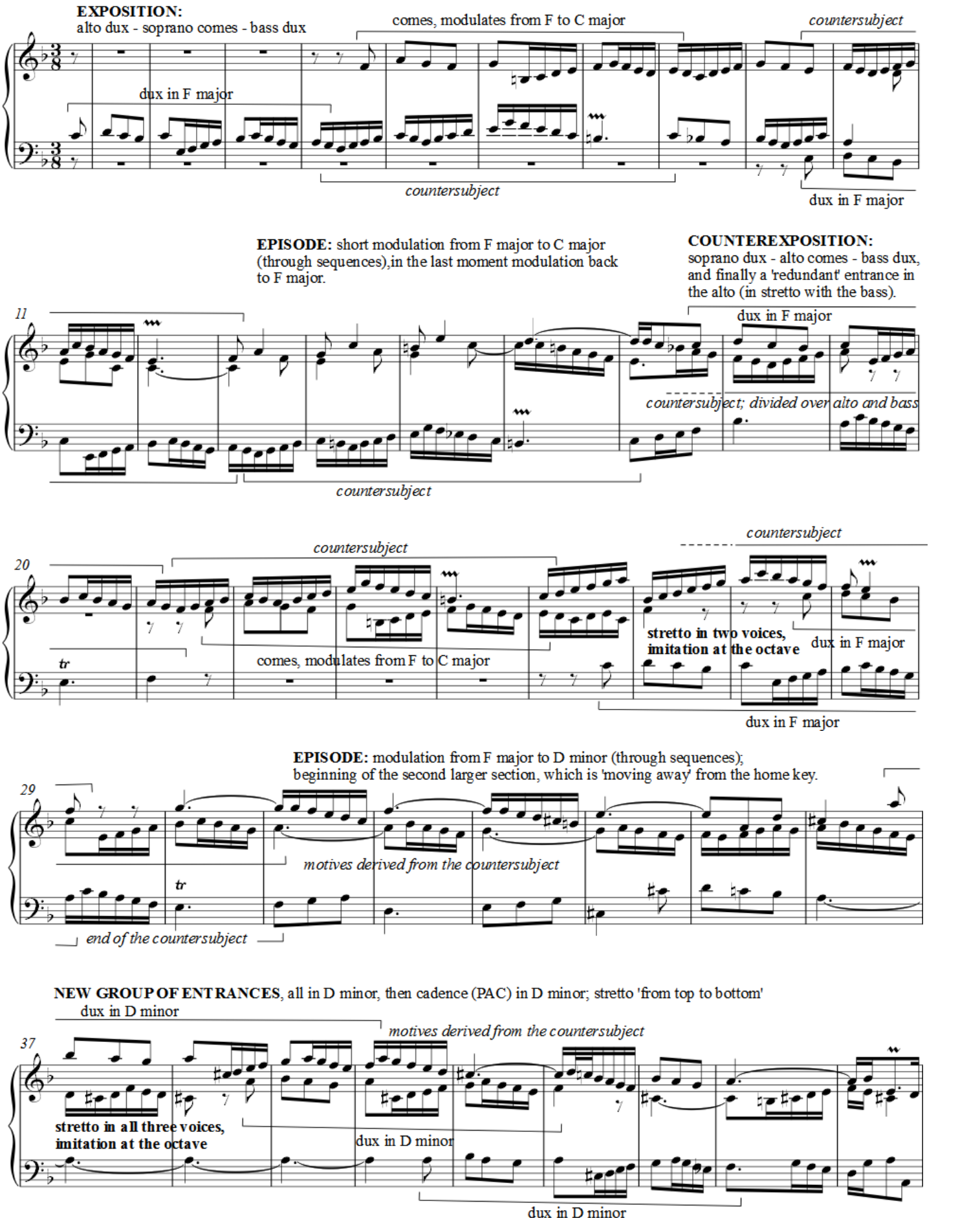
HC in E

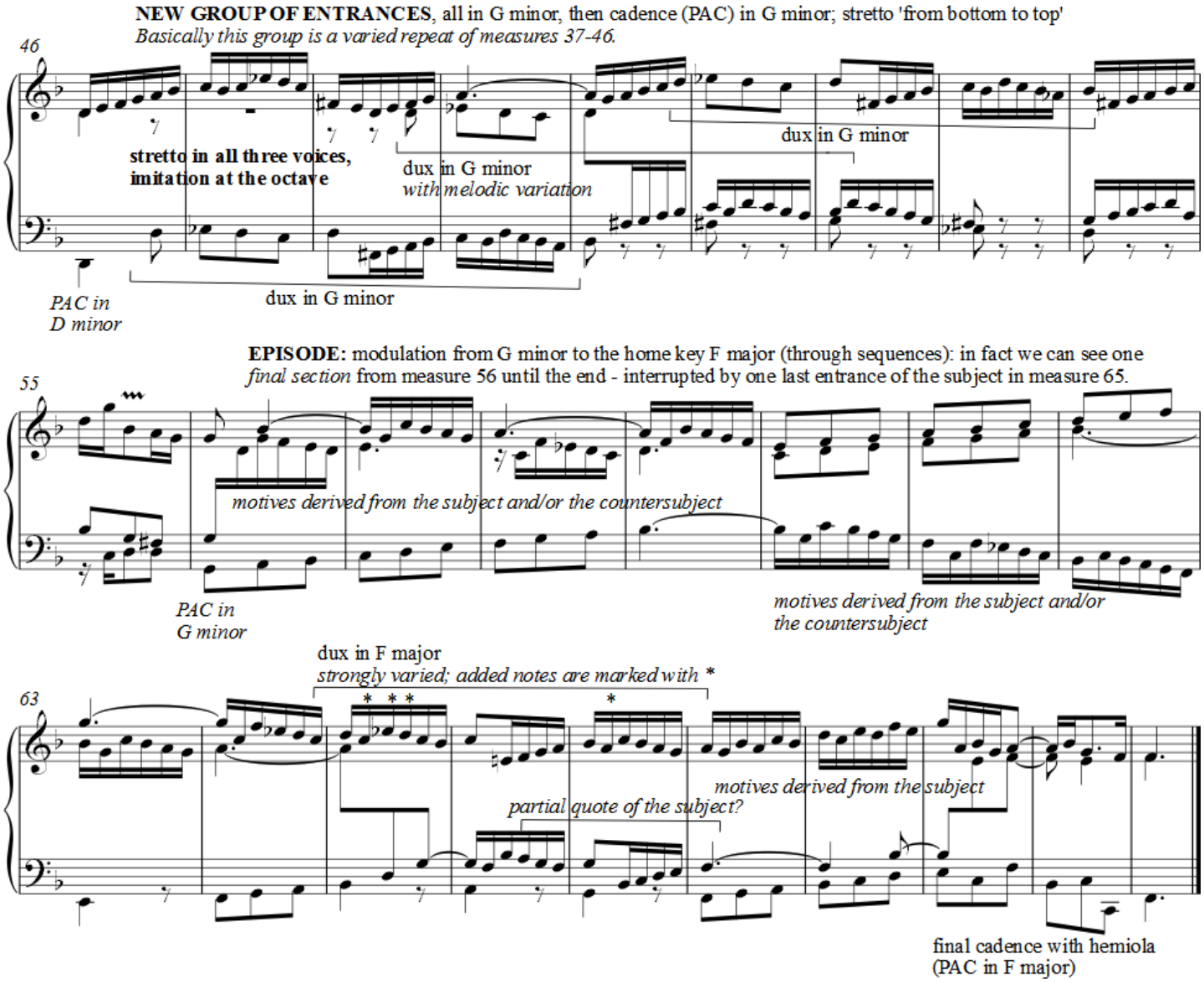
Such changed orders seem to be a fairly common feature of counterexpositions; for example, in the Fugue in C minor, WTC II[145] the consecution in the exposition is A – S – T – B , whereas in the counterexposition this is changed to S – A – T .

With respect to the counterexposition and its relation to the exposition, the Fugue in F major, WTC I has many similarities to the Fugues in C minor and E major in WTC II: in the counterexposition of this fugue, all three voices have an entrance at a higher pitch than in the exposition (a fourth or fifth higher). The consecution of voices is changed, like in the Fugues in C minor and E major (both WTC II): A – S – B in the exposition is altered in S – A – B (– A). But, other than in the Fugue in E major, WTC II, the *countersubject* plays a role in the counterexposition as well, and there is one redundant entrance (in the middle voice from measure 28, forming a stretto[146] with the bass):

142 See example 50 for the score of the exposition of this fugue; the score of the counterexpsition you find in example 64.
143 See example 59.
144 Fugue in E, WTC II: see examples 50 and 64. Stretto: see the chapter: *further, developmental sections in fugues; application of stretti and other 'contrapuntal techniques (contrary motion, augmentation and diminution); episodes*
145 See example 59.
146 Stretto: see chapter: *further, developmental sections in fugues; application of stretti and other 'contrapuntal techniques (contrary motion, augmentation and diminution); episodes*

Example 60 Fugue in F major, WTC I - complete score





All three examples of counterexpositions I mentioned to this point can clarify that it often makes sense to consider exposition and counterexposition *together* as the first large section of the form. On the other hand we have to differentiate:

- In the Fugue in C minor, WTC II[147] there is, speaking in musical terms, clearly no division between exposition and counterexposition (as the counterexposition starts immediately after the last entrance of the exposition, without interruption by a cadence).
- In the Fugue in F major, WTC I[148] an episode[149] stands between exposition and counterexposition, but we still can perceive measures 1-31 as the first large section of the form: there is only a weak close at the end of the exposition; the keys are not changing until measure 31 (only F major and C major are used), whereas in the section from measure 31 we encounter the first modulation to a 'new' key (D minor, relative of F major).
- In the Fugue in E major, WTC II[150] the situation is less clear: the half cadence in measure 9 marks a temporary ending, meaning also that the beginning of the counterexposition is

147 See example 59
148 See example 60
149 Episode: see chapter: *further, developmental sections in fugues; application of stretti and other 'contrapuntal techniques (contrary motion, augmentation and diminution); episodes*
150 See examples 64 and 50.

probably heard as a 'restart' rather than as a continuation - which also means that in this case it is problematic to conceive exposition and counterexposition together as a single formal section.

One example of a redundant entrance I mentioned, in the Fugue in D# minor, WTC I[151], is not so clear: we may count the bass entrance in measure 12 to the exposition, but the modulation *during* this entrance leads to some unclarity. I believe that we generally should speak only of redundant entrances when they are in the home key or the dominant key, and can be seen as part of the first deployment of the subject in the beginning of the fugue. The use of the term 'redundant' in subsequent sections that contain more entrances than voices, does not make much sense, as these sections usually are more freely designed than the exposition anyway. This also applies to counterexpositions: they can only stand right after the exposition, and only use the home and dominant keys.

further, developmental sections in fugues; application of stretti and other 'contrapuntal techniques (contrary motion, augmentation and diminution); episodes

It is hardly possible to describe the further elaborations in a fugue, after the exposition and eventual counterexposition, in general terms, as something like a 'fugue form' does not really exist.[152] Often we continue with an episode (a section without the subject, standing after a section wherin the subject is processed[153]); equally often we continue with a section in which the subject *is* processed again, normally in ways that makes that this section clearly differs from the exposition and counterexposition; thereby often other key(s) than the home key and the dominant key are used.[154]

In the course of a fugue the subject often undergoes one or several contrapuntal operations (or: polyphonic techniques), like augmentation, diminution, contrary motion, stretto, or even a combination of two or more of these techniques.[155] In Bach's fugues we moreover often encounter a process of 'polyphonic compaction' which extends over the entire piece, or over a large portion of it: the complexity of the polyphony increases step by step; often the most complex situations and combinations are towards the end of the composition.

stretto, augmentation, diminution and contrary motion

As a new entrance of the subject (dux or comes) starts before the previous one has finished, we speak of stretto. We might as well say: the entrances *overlap.* Stretto technique may be limited to two entrances, but may as well contain three, four or even more entrances. For example, the first stretto in the fugue in F major, WTC I[156] is during the counterexposition, in only two of the three voices (measures 26-31); in measures 37-43 a second stretto takes place, in which all three voices participate

151 See example 55.
152 See also page 24.
153 See from page 74.
154 Some examples: In the Fugue in F major, WTC I in example 60: after the counterexposition an episode forms the connection with a new group of entrances, in a new key (D minor); similarly in the Fugue in D major, WTC I (example 57). In the Fugue in C major, WTC I (example 61) we continue after the exposition immediately with further elaborations of the subject (stretti). In the Fugue in C minor, WTC II (see example 59) a PAC in the dominant key after the counterexposition marks the end of the first section of the form, before we continue with a developmental section (in measure 14). In a similar manner, in the Fugues in Eb major, WTC II (example 53) and G minor, WTC I (example 52) a short concluding section after the exposition marks the end of the first large section. In the Fugue in E major, WTC II (see examples 64 en 50) we continue after the counterexposition immediately with further elaboration of the subject and the countersubject (stretti).
155 See chapter: *Some general observations about polyphony/polyphonic techniques.* for an explanation of augmentation, diminution and contrary motion.
156 See example 60.

- though in fact not more than two voices overlap (soprano/middle voice, and middle voice/bass). In both stretti we find imitation *at the octave* - so we can conclude that in a stretto a dux entrance is not necessarily followed by a comes; stretto sections can even equally *start* with a comes. Moreover, various imitation distances in different stretti can be used in the course of a fugue (for example: in a first stretto imitation at the fifth is used, whereas in a later stretto we find imitation at the octave). This is also true for other sections after the exposition: there as well, the arrangement of entrances is often freer than in the exposition.

Sometimes stretto technique is combined with other contrapuntal techniques (augmentation, diminution, contrary motion).[157] And finally, the *temporal distance* between entrances can be varied: in a first stretto the second entrance could start for instance four beats after the start of the first entrance, but in a following stretto a second entrance is already after two beats, etc.[158] Even *within* a single stretto this temporal distance is sometimes varied: In the stretto from measure 9 in the Fugue in E major, WTC II[159] the second entrance is a whole note after the first (taking into account that the first note of the alto entrance is shortened), but the third entrance comes two whole notes after the second; the last entrance (in the soprano in measure 11) is again a whole note after the third. In the stretto from measure 14 in the Fugue in C major, WTC I[160] the temporal distances differ almost all the time, starting with these distances:

- one beat between alto and tenor in measure 14
- four beats between tenor and bass in measures 14/15
- two beats between bass and the incomplete entrance in the soprano in measure 15 (etc.)

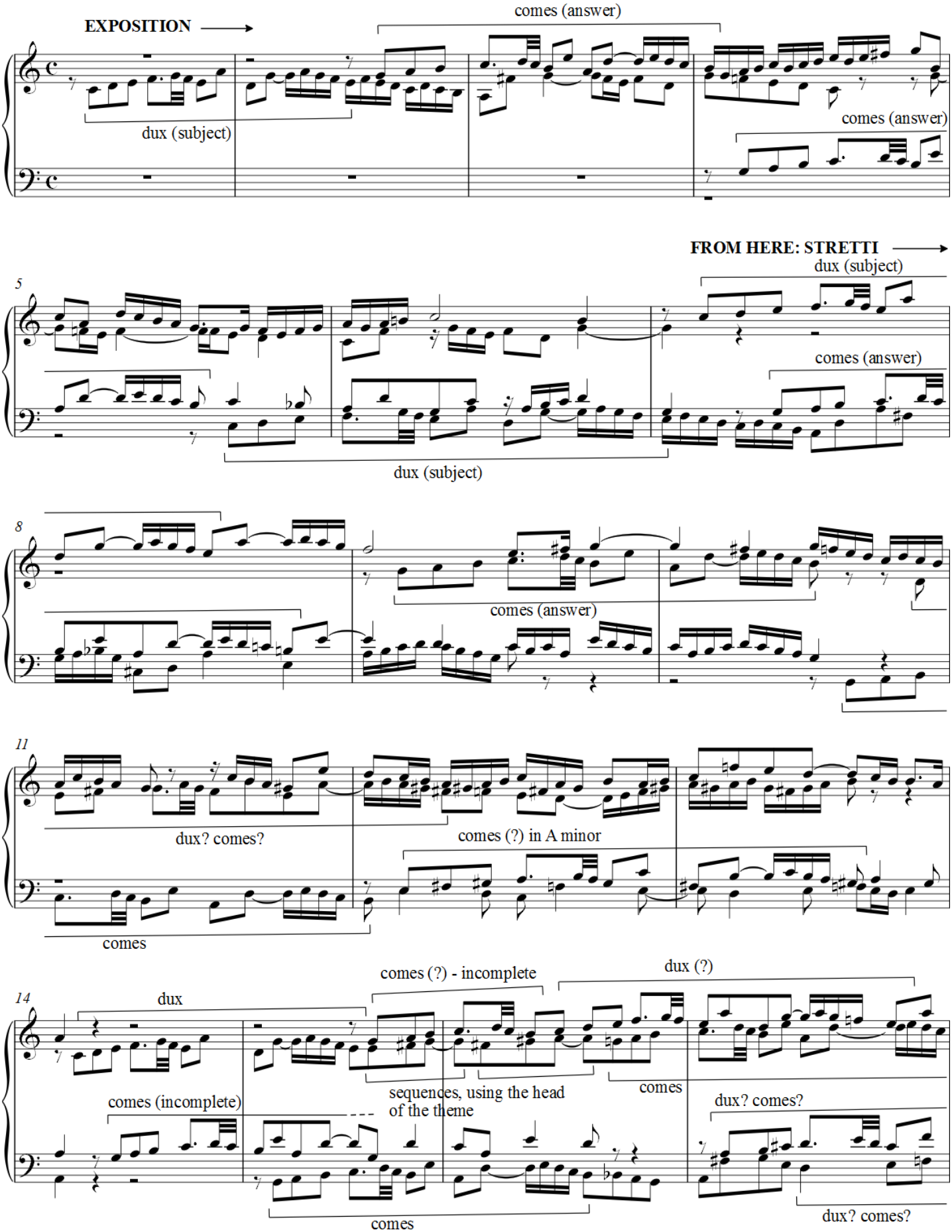
All this means that the composer, when he wants to use contrapuntal techniques like stretto in a later section of the fugue, has to take them into account already when designing the subject. On the other hand, even in the work of Bach we find many examples of what could be called 'compromises': in many stretti one or several entrances are *incomplete* (showing that it is often sufficient to *suggest* a complete set of entrances rather than *actually complete* all entrances); and entrances in a stretto often undergo *changes,* so that they fit in the stretto.

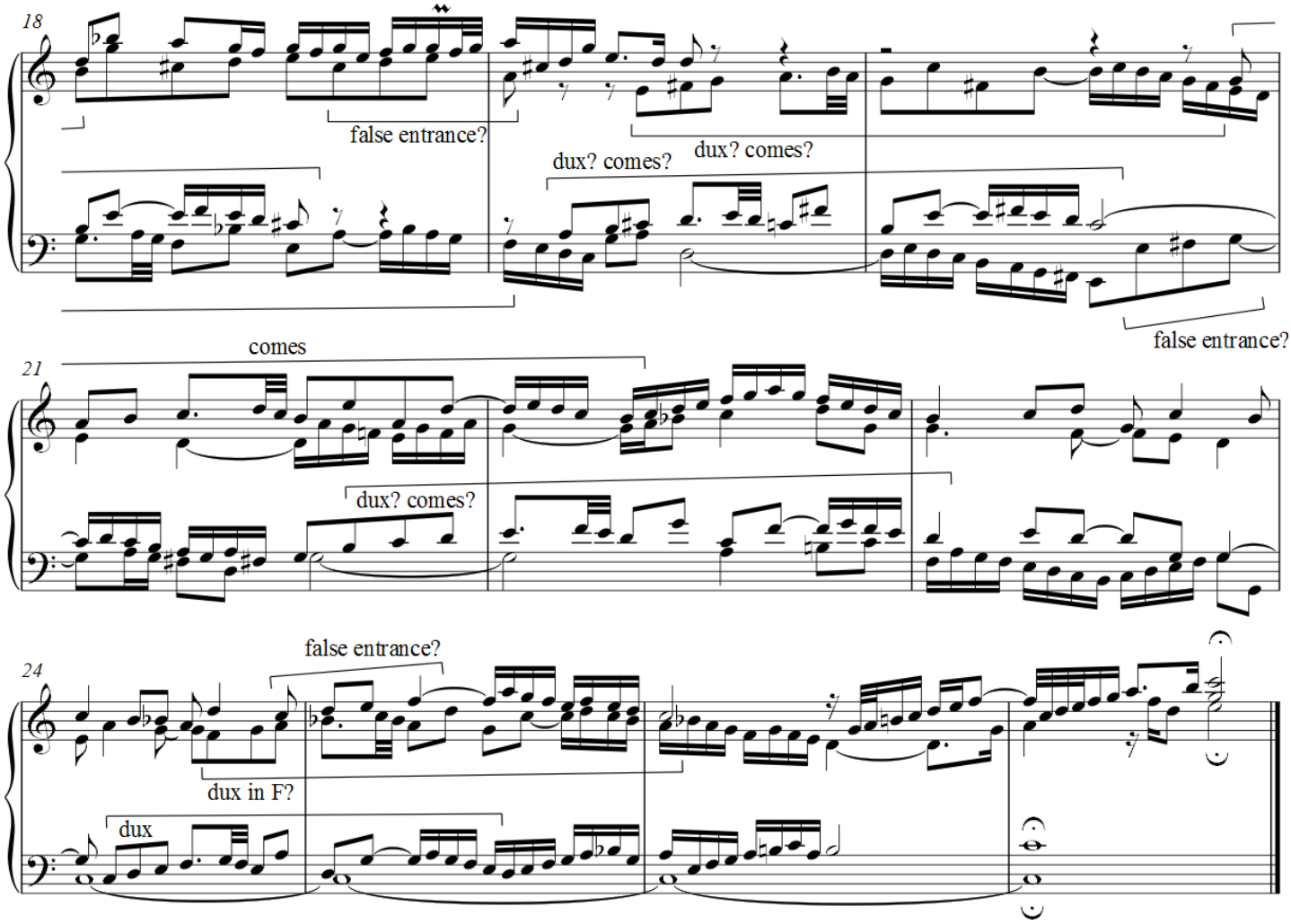
Logically, a stretto is not possible at the beginning of a fugue (as we do not know the length of the subject in that moment yet), and therefore it typically happens after the exposition: the earliest moment a stretto in principle can occur is during the last entrance of the exposition. Normally though, the first section that may contain a stretto is the counterexposition (when the fugue contains one).[161] On the other hand, there are some examples in Bach's work of overlapping dux and comes entrances right from the start of a fugue - in other words: situations in which it is impossible to say that the dux ends before the comes follows (such interpreation would then be musically nonsensical). A clear example is the Fugue in A major, WTC I:[162] to me it does not make any sense to assume that the subject ends before the start of the answer; I find that the only logical point to end the subject is on the second C# in measure 2. Likewise, of course the answer ends on the second G# in measure 3. When we accept that the entrances overlap right from the start of the fugue (like in this fugue) we can speak of a strettofugue.

In example 61 you see the complete score of the first Fugue of the first book of the WTC. After the exposition (without interludes, and with the unusual consecution: dux – comes – comes – dux) this fugue almost exclusively consists of stretti:

157 For instance in the Fugues in E major, WTC II (example 64), and C minor, WTC II (examples 64 and 65).
158 This is actually the case in the Fugue in C minor, WTC II. See example 65.
159 See example 64.
160 See example 61.
161 Stretto in a counterexposition: See the Fugues in E major, WTC II (example 64) and F major, WTC I (example 60).
162 See example 44. Apart from the overlapping entrances the comes forms a pretty unusual answer: the *first tone* of the comes is unchanged, but two *other*tones *are* - without any doubt to improve the sound in relation with the higher voice.

Example 61
Fugue in C major, WTC I – complete score





Even though three of the four entrances from measure 7 (up to and including the bass entrance in measure 10) are a comes we can say they form a group together, as they all start on C or G (as opposed to what happens thereafter). They *seem* to form a counterexposition[163]: except the tenor all voices start on another tone than in the exposition. And the first two entrances form a stretto (measures 7/8). Though the bass entrance in measure 10 still can be regarded as part of the group it simultaneously marks the start of a subsequent stretto (with the alto, see the end of measure 10).

From measure 11 we modulate 'away' from the keys C and G major; therefore the alto entrance in measure 10 can be seen as *comes,* modulating to D major, even if we never reach that key because of the modulation to, and subsequent perfect authentic cadence in the relative minor key, A minor. (The modulation is in measure 11, the cadence in 14.) Other than for instance in the Fugue in F major, WTC I[164], *both* dux and comes are used in the two stretti between measures 7 and 14 (as in the other stretti in this piece as well) - which also means that the imitations in the stretti are generally at the fourth and fifth.

After the cadence in measure 14 we immediately continue in C major[165], with a third stretto, the comes imitating the dux after just one beat![166] Generally speaking, the stretti from measure 14 are more complex and more chromatic than before the cadence in 14. The next conclusive cadence is on the first beat of measure 24, in the home key; the mediate close in D minor in measure 19 is not really

163 See chapter: *exposition with redundant entrance; counterexposition*
164 See example 60.
165 Even though the cadence in measure 14 is in A minor. See the comments on this phenomenon in chapter: *key design and modulations* (from the second paragraph on page 80).
166 See also the comments on temporal distances in this stretto on page 67.

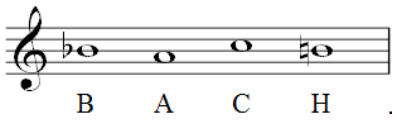
convincing, as it stands in the middle of a stretto passage, and includes the F# (which turns out to be the leading tone to G in the same measure already). The section from measure 24 we can label as *final section* of the fugue, firstly because of the tonic pedalpoint, and secondly because of the preceding very clear PAC in measure 24. The harmony, especially the use of (V) → IV at the beginning also points here: this harmonic progression is very commonly used at the the start of such final sections.[167]

As you can conclude from the annotations in the score in example 61, many entrances in this fugue are 'unclear' in the sense that it is impossible to distinguish between dux and comes, mostly because we modulate *during* entrances (hence the numerous question marks in the score). The fact that the comes forms a *real* answer does not make things any easier, as there is - except for the transposition - no difference whatsoever between dux and comes. In places where the subject appears incomplete or vague I specified *false entrances*[168]*:* see measures 18, 20, 25; eventually the incomplete entrance in measure 15 can be labeled 'false entrance' as well.[169]

When we *count* the entrances in this fugue , and include both clearest false entrances (in measures 15 and 24), this fugue contains 24 entrances (subject and answer). This is probably not a coincidence: as it is the first fugue of the WTC, we can interprete this number as a symbolic representation of the complete set of 24 keys, used in the WTC. Moreover, I believe it is no coincidence that the first conclusive cadence in the home key is in measure 24. Last but not least, it can hardly be a coincidence that the subject consists of *14 notes.* The number 14 is as much as *the* 'Bach number': when we convert the letters of the name BACH into their numeric position in the alphabet, we get:
B = 2, A = 1, C = 3, H = 8 – together: 14. Bach 'undersigns' so to speak in this fugue with his name, using the number 14 - something he does in other pieces as well. In this fugue, the number 14 seems to be used in two other ways as well: the *first cadence* of the piece is in measure 14, and in the second part of the fugue (from 14) we can find *14 entrances.*

I believe that it is equally no coincidence that the subject of the *last* Fugue of the first book of the WTC[170] uses 12 different pitches - which is of course, when we equate tones like Ab and G#, the total of *all possible pitches;* I think it is obvious that here the 'completeness of all keys' is symbolized as well. And in the Fugue in C minor, WTC II[171] we find 24 entrances again; in this fugue, the first PAC is in measure 14, and the complete fugue has 28 measures.

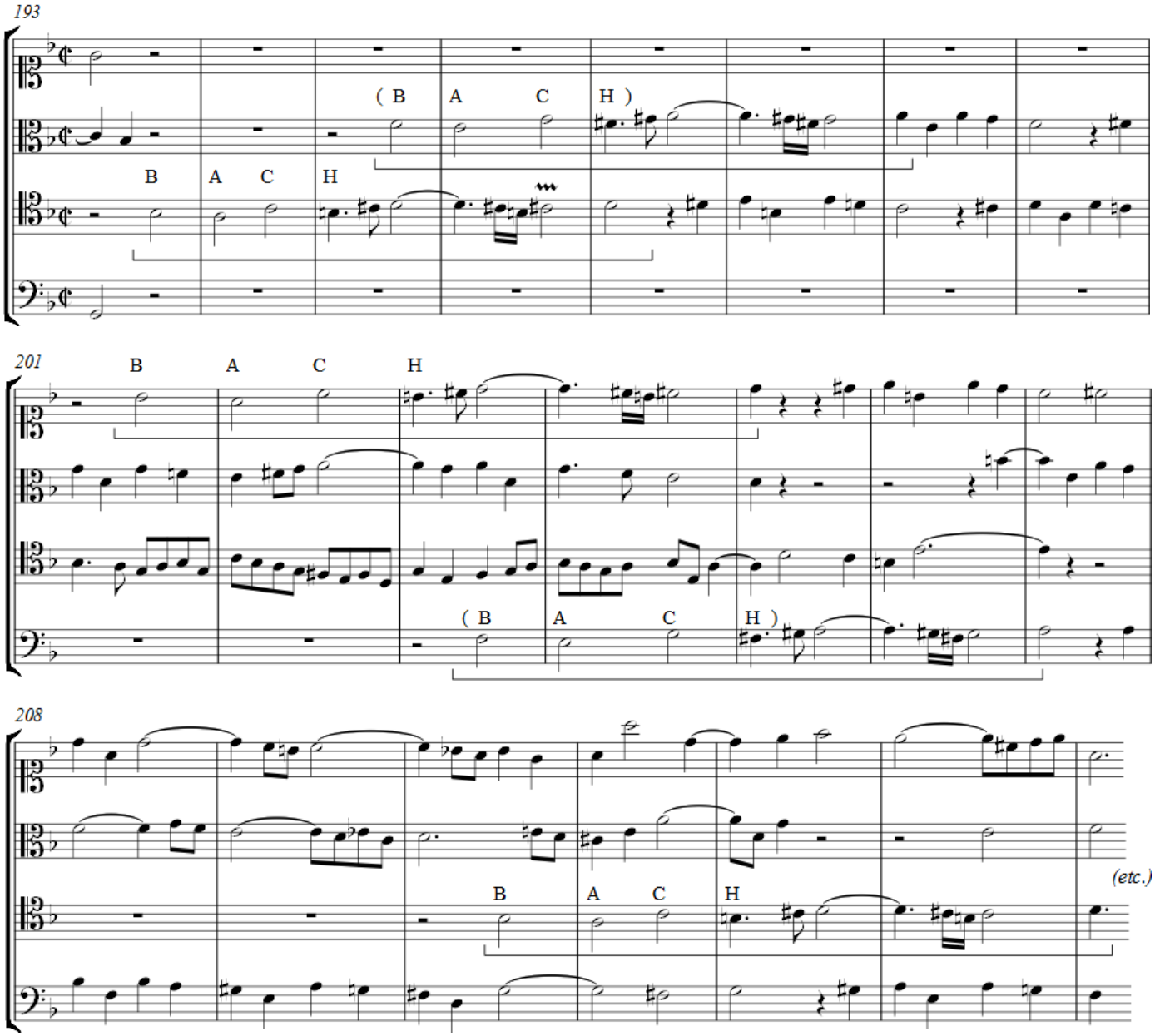
Often Bach 'underwrites' (also) in a different way, namely by using the letters of his family name, which he could do, because in German musical nomenclature B natural is written as H and B flat as B:



This 'musical cryptogram' has been used by countless composers after Bach, especially after the Bach Revival in the first half of the 19th century. The probably most famous example in the work of Bach is the third subject of the (unfinished) tripel fugue[172] which forms the final *Contrapunctus 19* of the *Art of Fugue:*[173]

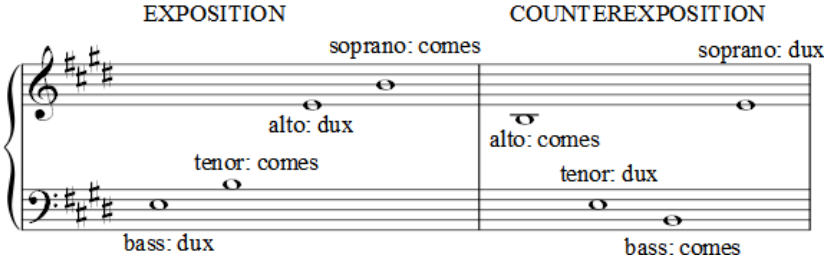
167 Like we find the same progression often at the beginning of *Codas* in the Classicist and Romantic periods as well.
168 False entrance: see chapter: *adapted entrance and false entrance.*
169 Compare measure 6 in the Fugue in C minor, WTC I (example 47): where I notated *head of the subject* in the score we could - equally plausible - speak of a false entrance: we recognize the motif C-B-C as the beginning of the subject. In measure 7 of the Fugue in C minor, WTC II (example 59) we could consider the motives in alto and tenor as false entrances: though the intervals in these motives differ from the intervals at the beginning of the subject, melodic direction and rhythmic structure make association with the subject definitely possible.
170 Fugue 24, in B minor, see example 35.
171 See examples 59 and 65.
172 Triple fugue: see chapter: *special types of fugue; fugato*
173 Apart from the *Art of Fugue,* we encounter the BACH motif for example in the *Sinfonia in F minor,* BWV 795 and in the *Canonic Variations on "Vom Himmel hoch da komm' ich her"* ("From Heaven above to Earth I come"), BWV 769. See http://en.wikipedia.org/wiki/BACH_motif for some further explanation, and more examples, also in the works of other composers. Compare also: http://de.wikipedia.org/wiki/B-A-C-H for a somewhat different list of compositions.

Example 62
Bach, The Art of Fugue, Contrapunctus 19, third subject / BACH motif



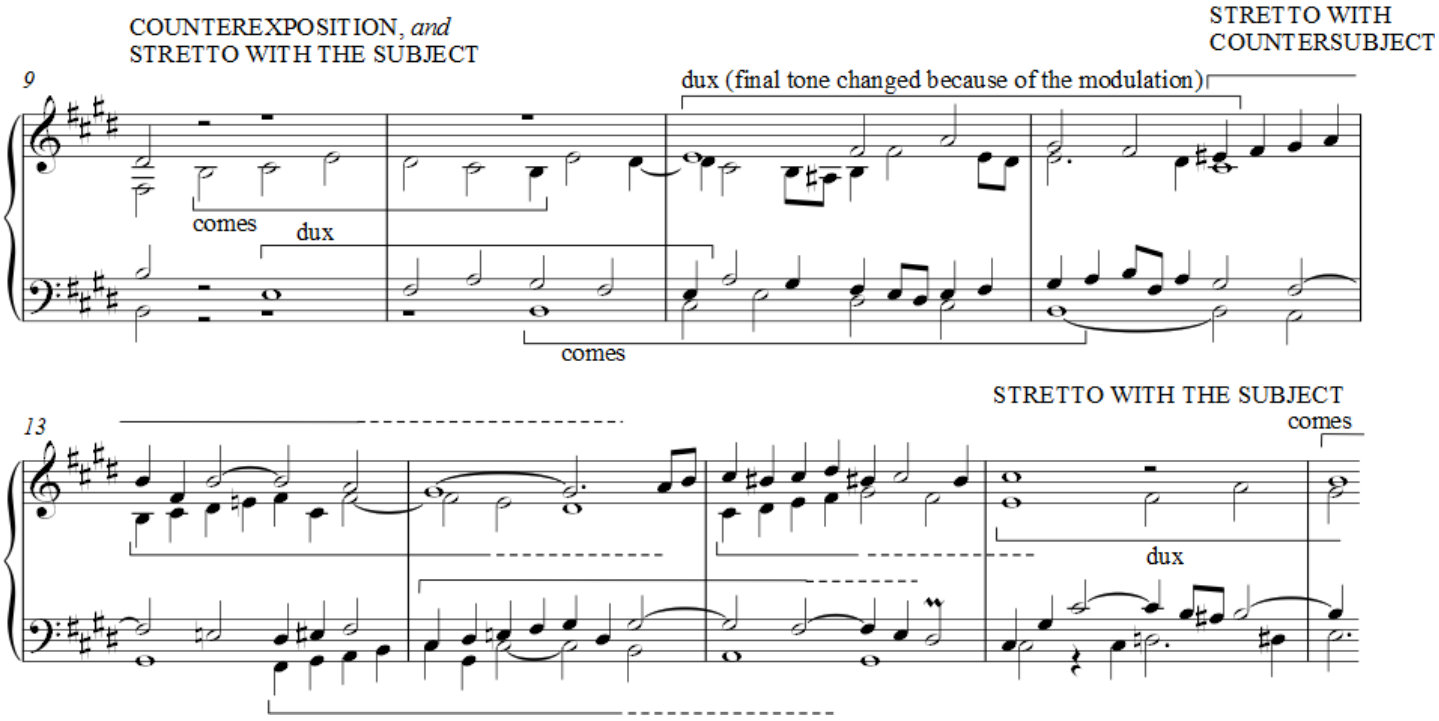
In the Fugue in E major, WTC II a stretto is combined with (maybe we should say: used in) the counterexposition. Example 63 shows the first notes of all entrances in exposition and counterexposition. In the score in example 64[174] you can also see that a second stretto follows in measures 9-12, in which not the subject, but the *countersubject* is used:

Example 63 Fugue in E major, WTC II: entrances in exposition and counterexposition



174 Again, it is clearly visable that not only the dux and comes are reverted in the counterexposition, but that also the *consecution of the voices* is changed: B – T – A – S in the exposition becomes A – T – B – S in the counterexposition. See example 50 for the score of the exposition of this fugue.

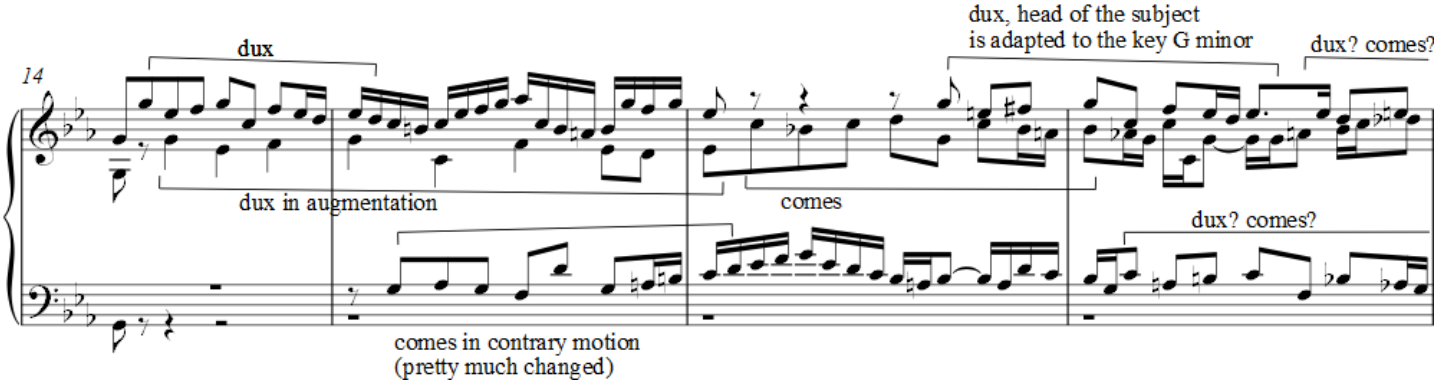
Example 64
Fugue in E major, WTC II[175]: first stretto (and at the same time: counterexposition) / second stretto (with a variant of the countersubject)



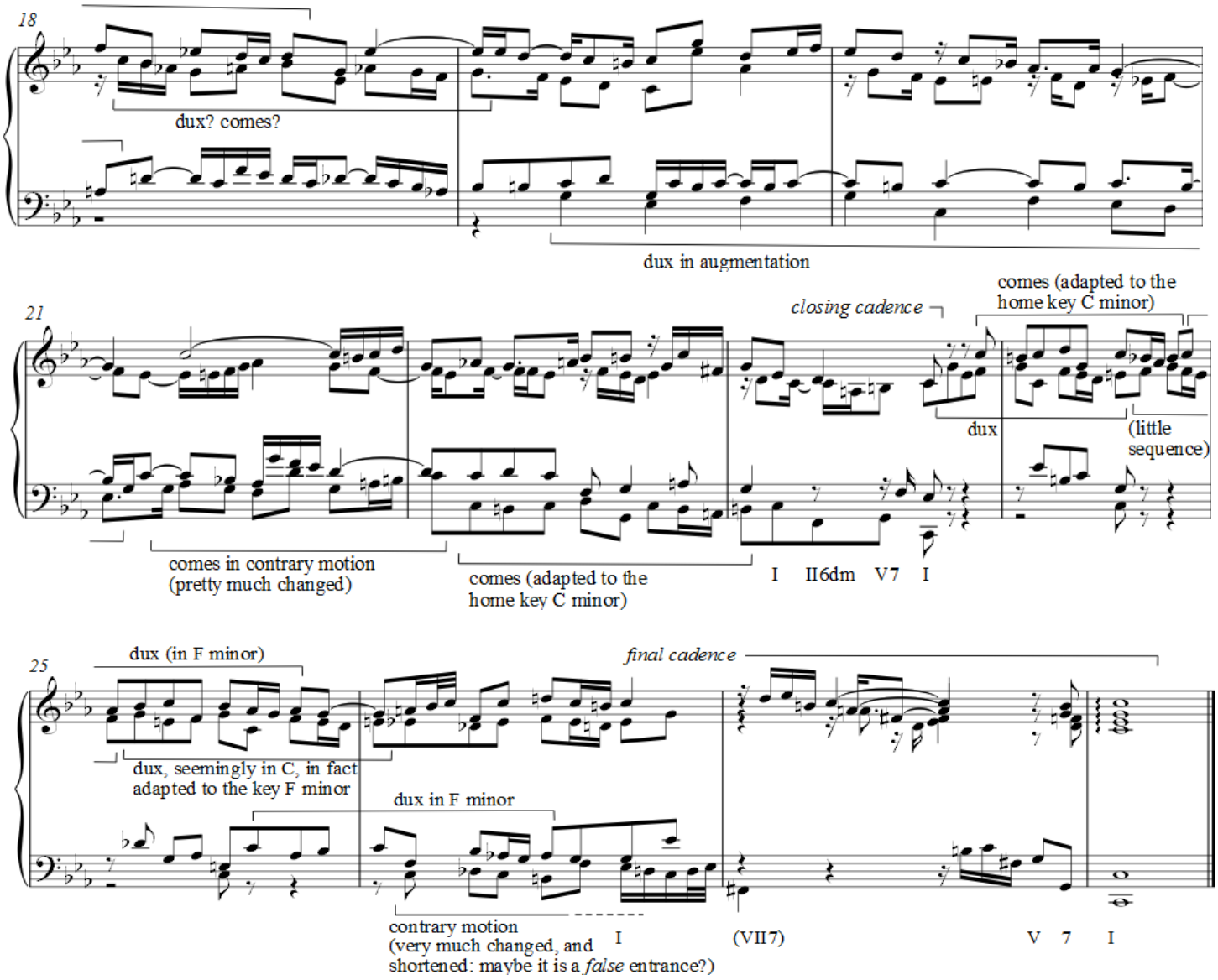
This fugue includes more stretti; in these we see at times that stretto technique is combined with another contrapuntal technique, namely diminution of the subject; and at an earlier place we find a stretto with a *variant* of the subject. See example 11 for the relevant part (measures 23-32) of this fugue:
- in measures 23-26 we find a stretto (in all four voices, modulating from F# minor to C# minor)
- in measures 27 and 28 we see a stretto with the subject in diminution (in all voices as well)
- from measures 30 diminution and the original form of the subject are combined in a stretto (in bass and alto; later a similar combination is used in other voices as well).

In example 65 you see the second half of the Fugue in C minor, WTC II. Starting in measure 14[176], several stretti occur, and we could say that the complexity of the stretti gradually increases. Furthermore, in the stretti both augmentation and contrary motion are applied: these are combined, and combined with the subject *in motu rectu* as well:

Example 65
Fugue in C minor, WTC II (from measure 14)[177]



175 See example 50 for the beginning of this fugue.
176 See page 67 for an explanation of the meaning and importance of the number 14.
177 See example 59 for the first part of this fugue.



From measure 14 a three-part stretto unfolds, in which the subject in augmentation in the alto is combined with the motus rectus (the 'normal' subject) in the soprano, and at the same time with the subject in contrary motion *(motus contrarius,* in the Tenor). These three entrances all start on G, so we can say the imitations are at the octave (though this description is a bit problematic when contrary motion is involved). Then, a second group of stretto-entrances follows (three-part again; five entrances in measures 16-18); this time the voices make their entrances on various tones; no contrary motion or augmentation is used. From measure 19 the bass finally participates again (after a long interruption), and 'recapitulates' the three shapes of the subject we meanwhile know: until measure 23 the bass has the subject successively in augmentation, in contrary motion and finally as motus rectus. Meanwhile, the remaining three voices do not have any entrance between measures 19 and 23.

We can say that the cadence (PAC in C minor) in measure 23 marks the end of the *"developmental section'* of this fugue.[178] The section from measure 23 then can be labeled as the *final section,* so that we can conclude that the piece is a (kind of) ternary form. This final section is characterized by stretto technique as well - and this time all four voices participate in the stretto, for the first time in the entire piece (although the bass entrance in measure 26 is pretty 'vague'); therefore, and because the stretti in

178 Though this characterization is at the same time somewhat problematic, as the actual developments, in the form of further elaborations of the subject just go on from measure 23. Likewise, the section from measure 23 is not only a final section (in the sense of: conclusion, coda etc.), but at the same time just another 'developmental section'.

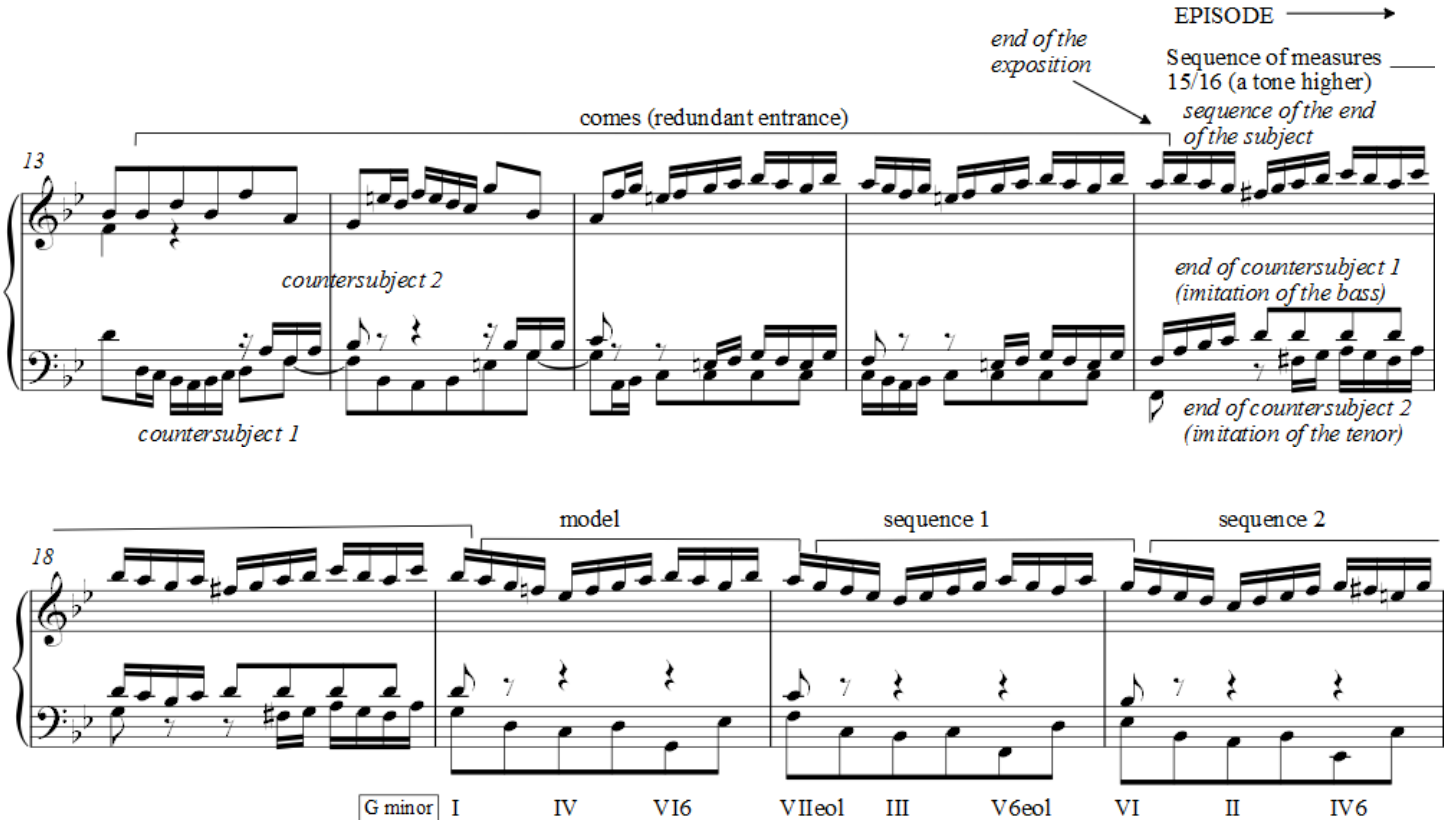
this final section are more 'dense' than in the previous section (imitation after just one beat!), this fugue can serve as a good example of *contrapuntal compaction:* in the first 14 measures there is no stretto yet, and thereafter the first stretto-group in measures 14-19 is (though complex enough) less 'dense' than the second (in measures 24-27).

In the Fugue in D# minor, WTC I the subject in contrary motion is initially introduced in a sort of 'new exposition': from measure 36 the subject in contrary motion appears in succession in all three voices. Later, from measure 62, augmentation, contrary motion and motus rectus are combined.[179]

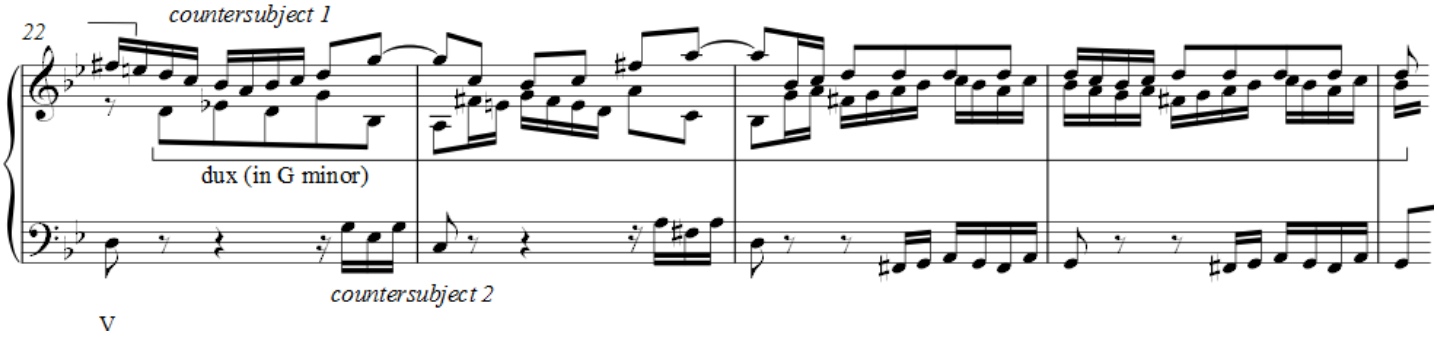
episodes

Episodes normally stand between two sections of the fugue in which the subject is deployed; in episodes the subject is absent. We can therefore say that episodes often function as 'connection' of two 'thematic sections'. It is in particular logical to compose an episode when a 'developmental section' starts in a new key, as then the episode can contain the modulation to that new key. Another function of episodes is to provide variety - the subject is absent for a while, along with the fugal imitation techniques. Therefore we focus on other things (for instance: sequences, modulations, motivic fragmentation), and the first recurrence of the subject *after* the episode therefore may become a very prominent moment. In episodes often motivic materials from (a) previous section(s) are used (often parts of the subject and/or of the countersubject, when the fugue contains one, or elements from a preceding interlude). Sequences are a very common feature, like in the example below:

Example 66
Fugue in Bb major, WTC I (from measure 13)[180]



179 In example 10b you see the beginning of this process. Example 10c shows the combination of two of the three forms (augmentation and 'normal pace') from measure 62.
180 See the exposition of this fugue in example 55.



In this fugue, starting on the first beat of measure 17 fragmentation is used in an episodic context. The final notes of the last comes of the exposition *and* the final notes of both countersubjects are separated[181], and put in sequence. As the (two-bar) sequence is one tone higher than the last two measures of the exposition we modulate from F major to G minor (compare measures 15/16 and 17/18). From the first beat of measure 19 we find further curtailment, because the repeat originating from the second part of the subject is omitted: the group of two measures (17/18) is shortened to just one measure. Though the higher voice in measure 19 forms a sequence of the preceding measure, the other two voices are different. Therefore measure 19 forms the model for the sequences in measures 20 and 21. The descending scales at the beginning of these sequences look exactly like the countersubject in measure 22. Because of this consistency, and as the beginning of the countersubject is in fact a (third) sequence, once more a tone lower, the connection between the episode and the 'developmental section' (from measure 22) is seamless.

Moreover, measures 19-23 harmonically form a *diatonic sequence of descending fifths,* with 'intermediate steps': **I IV** [VI6] **VIIeol III** [V6eol] **VI II** [IV6] **V**. These 'intermediate steps', the 6-chords, are 'weaker' than the surrounding root positions, and thus can be understood as *neighboring chords* - that is why in the background the sequence of descending fifths 'reigns' in this passage.[182]

In the Fugue in D major, WTC I[183] the subject *in whole* does not return after the cadence in E minor in measure 18: the remaining portion of this fugue consists of an episode and a final section (which eventually can be called episode as well), in which only the first part of the subject recurs. All harmonic progressions from measure 18 are connected to sequences of descending fifths, and the elaborations on this basically simple pattern form an ingenious process in itself. But this process in fact starts long before measure 18: Already in the first interlude in the exposition (measures 3/4) we see a pattern of descending fifths in the *melody:* F# – B – E – A ; in the second interlude (measures 6/7) this melodic pattern is changed in a *harmonic* pattern: the notes F# – B – E – A now form the roots of the degrees III VI II and V [184]. The first episode begins with a false entrance of the subject (in the bass in measure 9); this false entrance is in fact an imitation at the octave of the preceding entrance in the soprano.

From this moment, false entrances are becoming increasingly important, as they are used in all episodic passages in the piece. After the false entrance in measure 9 a sequence of descending fifths is combined with a (quasi) *'faux-bourdon'* in the three highest voices (see measures 9 and 10). In the second half of measure 9 the *'faux-bourdon'* forms a prolongation of the E7-chord, leading to the A-

181 In German the term *Abspaltung* is used to describe such situations, in which musical material is split, and only a portion of the preceding material is reused (often: the beginning or the end of a preceding motif). In Dutch we speak of *afsplitsing.*

182 A very similar situation is in the second episode of the Fugue in D major, WTC I . See the comments on this fugue on this and the following page; the score is in example 57.

183 See example 57 for the complete score of this piece.

184 Alternatively, it is possible to interprete this second interlude as first *episode.* The exposition would then end already on the first beat of measure 6.

chord in measure 10. Measure 10 is a sequence of measure 9, and a continuation of the sequence of descending fifths (b – E – A – D – G) until the next entrance in measure 11, in G major.

In the second episode, from measure 17, the pattern of measures 9/10 is repeated (and, as it turns out: extended), but now the voices are inverted: the false entrances are in the soprano, and the three *lower* voices have the *"faux-bourdon',* wherein the *bass* now has the melody (as opposed to the soprano in measures 9/10). This results in yet another 'exchange of roles', *within* the faux-bourdon: the middle voices from measure 17 take over the role of the two lowest voices in measure 9/10, *though the inversions of the chords are not changed.* Therefore, the original pattern of descending fifths changes to a pattern of descending *thirds,* in which nevertheless the fifths prevail (as the chords on E, A, D, G C# and F# stand on strong beats):

(G) – e – c# – A – f# – D – b – G – e – c# – A – f#
|_____|_____|_____|_____|_____|

We therefore perceive the harmony of this passage as based on a sequence of descending fifths, moving at the same pace as in measures 9/10 (two chords per bar), even though the chords are actually a third apart all the time.[185]

In measure 20 we see another sequence of descending fifths, moving at twice the pace of the previous one. It is based on the same notes as (and moves as fast as) the second interlude in measures 6/7: F# – B – E – A (only at the end D is added). Melodically, this measure is entirely based on false entrances. From 21, first the pattern of measures 9/10 is repeated, before a PAC concludes this episode. The final section from 23 is again based on a sequence of descending fifths, combined with false entrances of the subject.

We now can probably conclude that in this fugue the *elaboratio* of the subject does not take the form of increasingly complex contrapuntal techniques applied to an, in principle, unchanged subject (the more typical procedure in a fugue); it rather forms a process of fragmentation, wherein a condensed form of the subject is used in a process of motivic and harmonic development and intensification - whereas the original, complete subject appears to be “lost on the way”.

The three episodes in the Fugue in F major, WTC I[186] are less complex, and have up to a point a clearly definable function. The first episode, from measure 13, is based on the *countersubject:* during the exposition the soprano and the middle voice both have played the countersubject after finishing the subject. It is not illogical that in the bass (the voice that enters last) an entrance of the countersubject follows after the subject as well. In fact, it is quite common that, when expositions contain a countersubject, the countersubject or a portion of it is played in the voice that enters last.[187] In this fugue, as the countersubject follows twice without any interruption after the dux entrances (in the soprano in measure 1, and in the bass in measure 10), and as it is strongly connected with the subject, we could even argue that measures 13-17 are still part of the exposition. The function of these measures is clearly to establish a connection to the counterexposition (from measure 18), by this harmonic pattern (which is largely sequential, the sequences forming combinations of descending thirds and descending fifths):

185 Compare this use of a sequence of descending fifths with the situation in the Fugue in Bb major, WTC I; see page 75, and example 66.

186 Example 60 contains the complete score of this fugue.

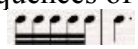
187 See for example the Fugue in C minor, WTC 1: measure 9 marks the beginning of the first episode; in the bass (which had the last entrance of the subject in the exposition) the beginning of the countersubject is used (and put in sequence).

F F | C a | e C | G C
(in the sequence 'replacing' a)
I6 I V III "VII" V (V6/5) V V6/5
|_____| |_____| |_____| |_____|
model *sequence 1* *sequence 2* *'continuation' and HC*
(bass in contrary motion)

The harmony in the second episode (measures 31-36) is based on a pattern af ascending seconds and descending thirds. Clearly the function of this episode (in which part of the counterubject is combined with the head of the subject in contrary motion and *motus rectus*) is to effect the modulation from F major to the relative minor key, D minor:

F | d | e C# (dim) | d g |A
(in the sequence 'replacing' Bb)
F major: I6 VI
D minor: I II (dm) VII I VI6 V
|_____| |_____| |_____|
model *sequence 1* *'continuation', partially contrary motion, and HC*
(bass in contrary motion)

Simultaneously with these displacements through sequences we see a pattern of imitations (like in the the last sections of the Fugue in D major, WTC I[188]): the alto imitates the soprano.

From measure 56, after the PAC in G minor, the main harmonic function of the (third) episode is to re-establish the home key. The scales in the bass in this section are in fact sequences of the head of the subject in contrary motion, the sixteenth notes-figures in the other voices: 
are derived from the tail of the subject.
In the harmony, the sequences are based on the fifth: from measure 56 the pattern is: g – C – F – Bb (ascending fourths 'replacing' descending fifths); from 60 we find C – F – Bb – e/C → F. The last entrance of the subject follows in measure 64, and finally we hear a short 'conclusion' in which similar material is used as in the third episode.

We have the feeling that the entrance in measure 64 does not interrupt the process that starts in 56 (and ends at the end of the piece). In other words: we feel that the entrance is part of the episode, more than that it causes any kind of 'separation' between episodic and thematic sections. This situation is not uncommon: quite often, a *single entrance* of the subject does not really interrupt or 'disturb' an episode, and maybe even can be seen as part of it. [189]

You may have observed meanwhile that I did not label measures 44-46 and 54-56 as episodes. I believe that these places, as in similar cases in other fugues, better can be labeled as *closes, final cadences,* or similar. In other words: Such passages, in which mainly a cadence is achieved after a group of entrances of the subject, are too dependent of the preceding to consider them as self-contained sections - even though 'technically' they are episodes, as the subject is absent, and they therefore stand *after* a group of entrances.[190]

188 See example 57, especially from measure 20.
189 The Fugue in C minor, WTC I (example 67) contains a sinilar situation: In measures 15 and 16 a single entrance is placed between two episodes, and we could pose the question whether it is not in fact *part* of an *'episodic process'* that starts in measure 13, and goes until measure 20.
190 Similarly, in the Fugue in C minor, WTC II I would label measures 12/13 (from the third beat of 12) and 23 (from the

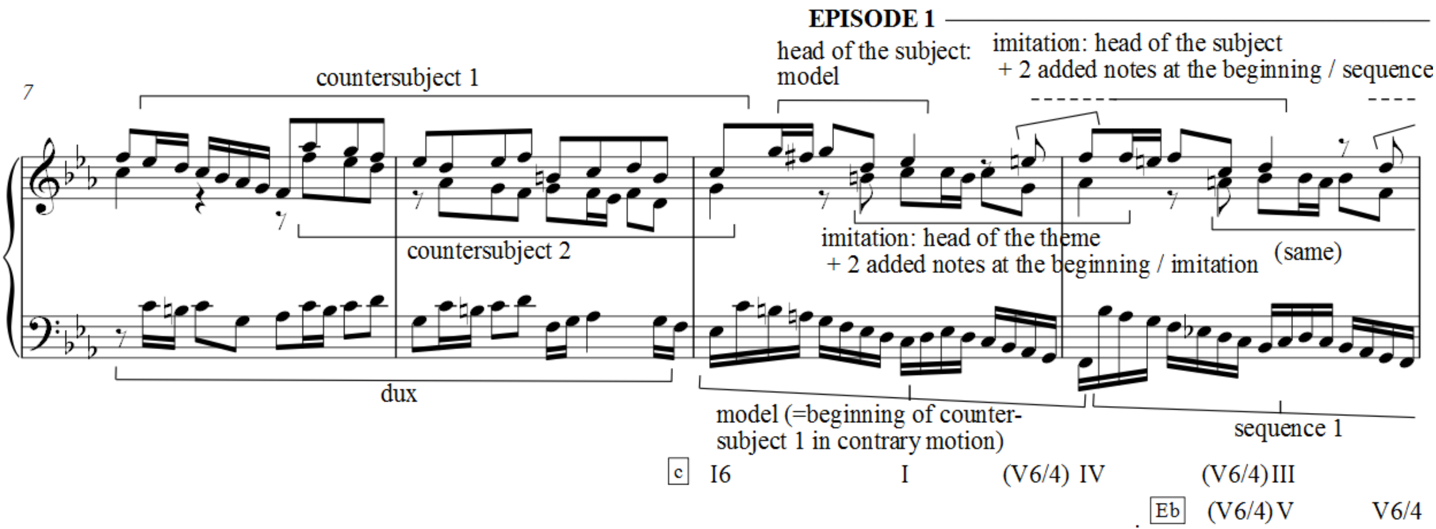
In the Fugue in C minor, WTC I[191] the episodes are (as often) based on material that originates in the exposition. In the first episode (measures 9/10), the head of the subject is used in a set of imitations between the two higher voices, whilst the bass plays descending scales, which no doubt are derived from the first countersubject. The harmonic function of this episode clearly is to establish the modulation to the relative major key, Eb major.[192] In the second episode (measures13/14), the two lower voices contain a motif from the second countersubject; we can say that the ascending scales in the highest voice are derived from the interlude in measures 5/6, or equally can be perceived as countersubject 1 in contrary motion. Harmonically, this second episode is intended to modulate back to the home key. The sequence used here is based on a *faux-bourdon,* moving in eigth notes, this fast-moving pattern at the same time is bound in a pattern of falling fourths (moving at a pace of two beats per step):

Eb major: I II6 [I6] VII6 I6 VI6 [VII6] (VII6) | V6 (VII6) [II6] (VII6) II6 VII6 [VI6] |
→ ~~IV~~
[F minor:] | I II6 [I6] VII6 I6 'VI6' |
C minor: | II6 [I6] VII6 | I6

larger pattern:
Eb ('replacing' Ab) → **Eb** → | **Bb** → **f** → | **c**

Sequences play a major role in all episodes (from measure 9, see example 67).[193] The third episode contains a model and a sequence, each of which consists of shorter sequential elements (half a bar each). Here the head of the subject is always in the soprano, making that this episode connects seamlessly with the dux entrance in the soprano in measure 20. The same applies to the first episode: here we see the head of the subject in the soprano, and the sequences thus connect beautifully with the dux entrance in measure 11:

Example 67
Fugue in C minor., WTC I – the first three episodes (from measure 9)[194]



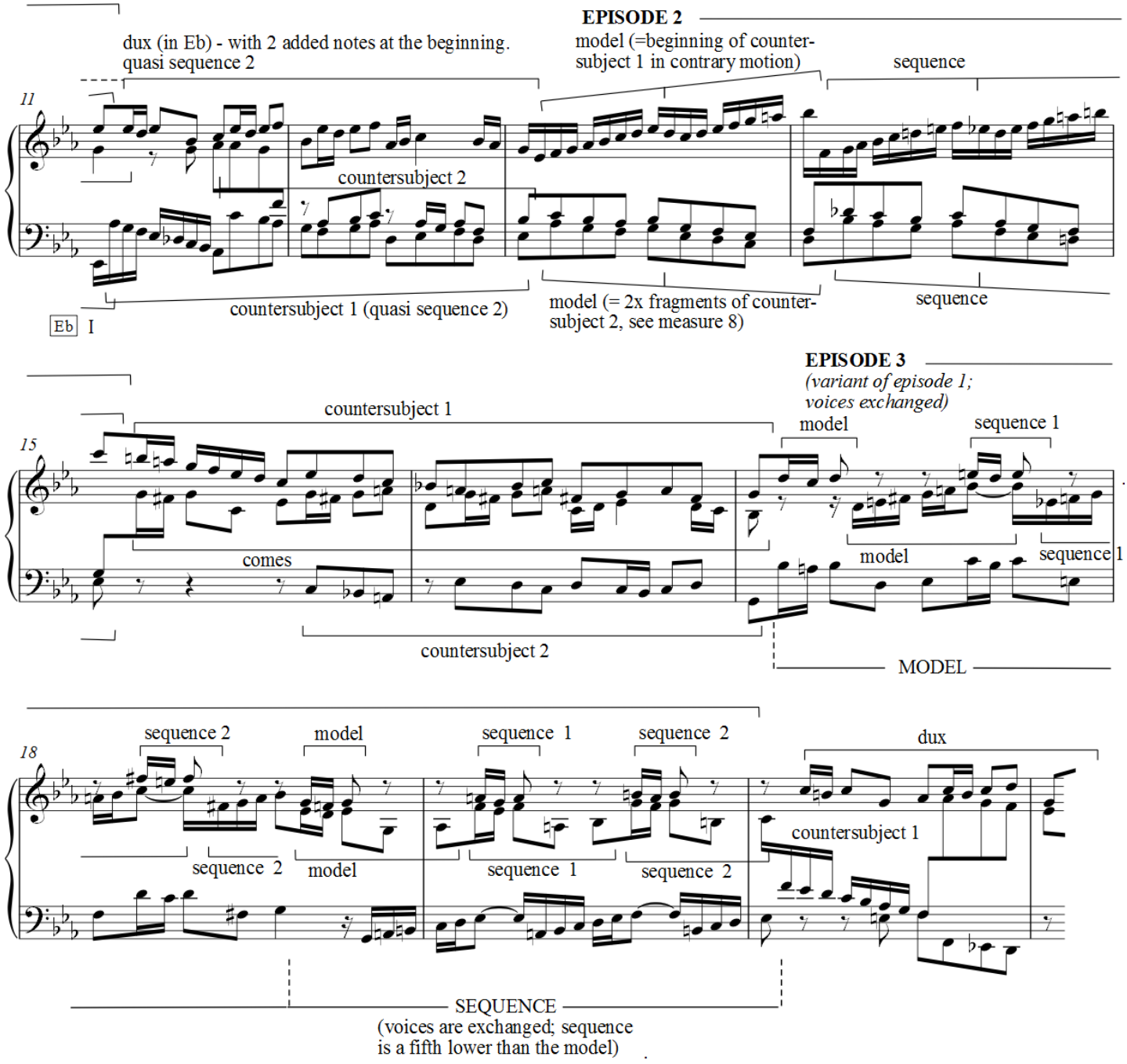
second half of the first beat) as *close* or *final cadence,* rather than as episode. See examples 59 and 65. And I would do the same for instance in:
– Fugue in Eb major, WTC II, measures 27-30 (example 53): here we find a cadence in the dominant key
– Fugue in E major, WTC II, measures 8-10 (example 50): half cadence in E major
In the Fugue in Bb minor, WTC I it is probably a good idea to see the conclusion of the first section as episode (measures 17-25, see example 48), as it not only contains a cadence, but also a modulation and sequential passages.

191 See example 47, and example 67 below.

192 Compare the second episode in the Fugue in F major, WTC I. See example 60.

193 Compare for example the episodes in the Fugues in F major, WTC I (example 60) and in D major, WTC I (example 57).

194 See example 47 for the beginning of this fugue.



All episodes mentioned to this point show clear (melodic, motivic) correlations with the subject and/or the countersubject. Of course, it is possible to write episodes that rather form *contrasting* sections, by introducing new materials.[195] But even though many episodes 'distract' from the subject and the specific fugal techniques as they are applied where the subject is present, the tendency is that they contain elements of the subject and/or the countersubject, and apart from that, show at least some contrapuntal work and sequences.

It is true that many fugues do not contain episodes *at all.* A fairly clear example is the Fugue in C major, WTC I[196]: in this piece the subject is omnipresent, except at the cadential moments in measures 23 and 26/27. The same can be said of the Fugue in C minor, WTC II: the subject is only absent in the closings in measures 13/14, 23 and 27/28.[197] So, when we do not consider closings as (seperate)

195 Clear examples are in the Fugue (second movement) of Bach's first *violin Sonata* in G minor, BWV 1001.
196 See example 61.
197 See examples 59 and 65.

episodes we can rightfully say that these fugues do not contain episodes.[198] In the Fugue in D major, WTC I[199] on the other hand, even though the *complete* subject is present in only 10 of its 27 measures, and though this fugue thus largely consists of interludes and episodes, the subject is almost omnipresent - although in fragmented, divisional form.

key design and modulations

It is by no means unusual that in a fugue by Bach only the home and dominant keys are used - except maybe for a single temporary and instable key in the episode(s)[200]. Equally often another key is present at some places, but only a very short period of time: the key is only briefly touched upon, and then left again immediately. This is the case in the Fugue in C minor, WTC II[201]: during the dux entrance in the bass in measures 11 and 12 we are, or seem to be, in F minor - in fact though, this is just a short tonicization: there is no cadence in F minor, and we continue after just one measure in G minor, the (minor) dominant key. The first real cadence in this piece is in G minor, in measure 14. Similarly, and even more clearly, F minor is only touched upon in measures 24-26: I think here F minor can be perceived easily as subdominant [IV] in the home key.

Another common situation is that, although there *is* a final cadence in a related key (in major keys often the relative minor key), the continuation *after* the cadence is immediately in the home key or the dominant key, often without any connection or transition. In the Fugue in C major, WTC I[202] this happens twice:
- in the second half of measure 11 we modulate to A minor, the relative of C major, and on the first beat of measure 14 we end with PAC in the same key. Immediately thereafter, the continuation of the fugue starts in C major "as if nothing has happened".[203]
- in measure 18 there is a modulation to D minor (from C major just before); there is a (clear, but also weak) cadence in this new key in measure 19 (third beat); after this cadence, we continue quite suddenly in the dominant key, G major.

Another possibility is that we, after a final cadence in a related key (often the relative), continue with a group of entrances of the subject *in this related key and possibly its corresponding dominant key.* In this case the relations between the entrances are as they were in the exposition - only now the entrances are displaced to another pitch, and thus to a new set of two keys. Therefore it is a good idea to label entrances in the new key as dux, and entrances in the dominant key of the new key as comes (or, alternatively, speak of subject and answer).

The Fugue in G minor, WTC I contains a clear example of this situation[204]. Logically, the exposition of this fugue (measures 1-8) is in the keys of G minor (home key) and D minor (dominant key). After

198 In the Fugue in E major, WTC II, likewise the subject is only absent in the closes.
199 See example 57.
200 This happens for example in the Fugue in C minor, WTC I - see examples 47 and 67; also in the remaining eleven measures (not in the examples) we only find the keys C minor and G minor.
201 See examples 59 and 65.
202 See example 61.
203 The same situation occurs in the Fugue in E major, WTC II (see example 64): after the first two stretti we hear a PAC in C# minor in measure 16. The section starting here is (apart from the C# minor chord on the first beat) in E major again. More in general, this procedure: a clear ending in the relative minor key, immediately followed by a continuation in the home key, strongly reminds of a common practice in Arias in the Baroque - in which often the (contrasting) middle section ends in the relative minor key; the repeat of the A-section (often in the form of a *Da Capo)* then immediately starts in the major home key, without any connection or transition. Similarly, in the Classicist period the 'lock on V' or dominant pedal point at the end of a development section, when it is *on the 'wrong' dominant,* often is on V of the relative minor key.
204 See examples 68 and 69. Compare the Fugue in F major, WTC I; here we find two groups of entrances in related keys after a modulating episode: in the relative (D minor) from measure 37, and after a PAC in D minor, in the relative of the subdominant (G minor), from measure 47. See example 47.

the exposition, during the first episode, a modulation to Bb major comes about (the relative major key, see measures 8-12); a clear PAC in Bb major marks the end of the episode (in measure 12). The first three entrances in the subsequent section are:
- a dux entrance in Bb major, the relative major key (in 12/13)
- a comes entrance modulating from Bb major to F major, the dominant key of the relative (13/14)
- an entrance in F, which could be seen as dux *or* as comes (15/16); that this entrance is a bit 'strange' relates to the fact that there is no interlude after the comes entrance in 13/14

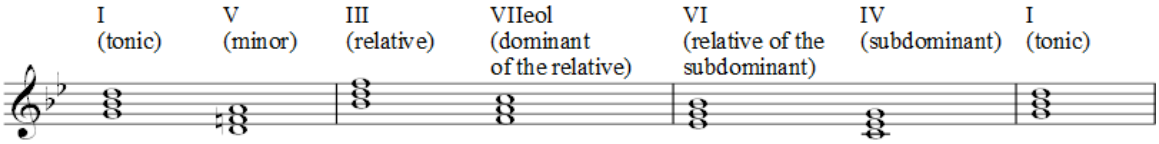
During the fourth entrance in this group (in the bass in measure 18) a stretto starts, in which we modulate to Eb major (=VI in G minor, or: relative of the subdominant). At the end of the fifth (and last) entrance (in 17-19, in the Alto) we clearly are in Eb major. After a short, modulating episode (in measure 19) two entrances in C minor follow (subdominant key, in measures 20-22). Then we return to the home key G minor (see the entrance in measure 23). We then conclude that in this fugue almost all possible keys are used, namely those keys whose tonic triads form diatonic, consonant scale degrees in the home key.

To put in a more general way: in *minor keys* normally only the degrees III IV V (minor) VI and VII eol. can become temporary tonics; sometimes even II becomes a temporary tonic; it is then changed to a *minor* triad (the 'normal' II in minor keys, a diminished triad, can of course not function as tonic).[205] In *major* keys the degrees II III IV V and VI can become temporary tonics.[206]
In a fugue in G minor are therefore, next to the home key, useable as keys: Bb major, C minor, D minor (not D major !), Eb major, F major, and (rarely) A minor. F# is not possible, as the triad on this note is dissonant (namely diminished), and hardly can be changed to a minor triad (F# minor would be too 'far away' from the home key). In a fugue in G major, the useable keys are normally: A minor, B minor, C major, D major and E minor. Temporary keys pretty often occur *in groups* - similar to the situation in the exposition, where the home and dominant keys always are used as a group. In the Fugue in G minor, WTC I the complete *key design* can be summarized as in example 68a.

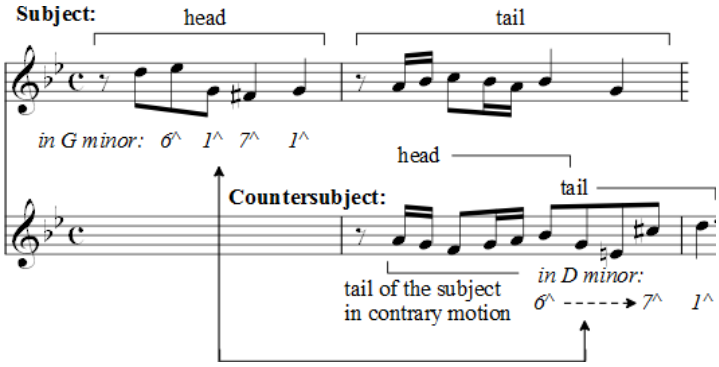
Apart from that, it is interesting to see how subject and countersubject in this fugue relate: the first part (the 'head') of the countersubject is the same as the second part of the subject (the 'tail') in *contrary motion*. And I believe we can see a relation between the head of the subject and the tail of the countersubject as well (though that is a bit more vague). See example 68b.:

Example 68 Fugue in G minor. WTC I

a. key design



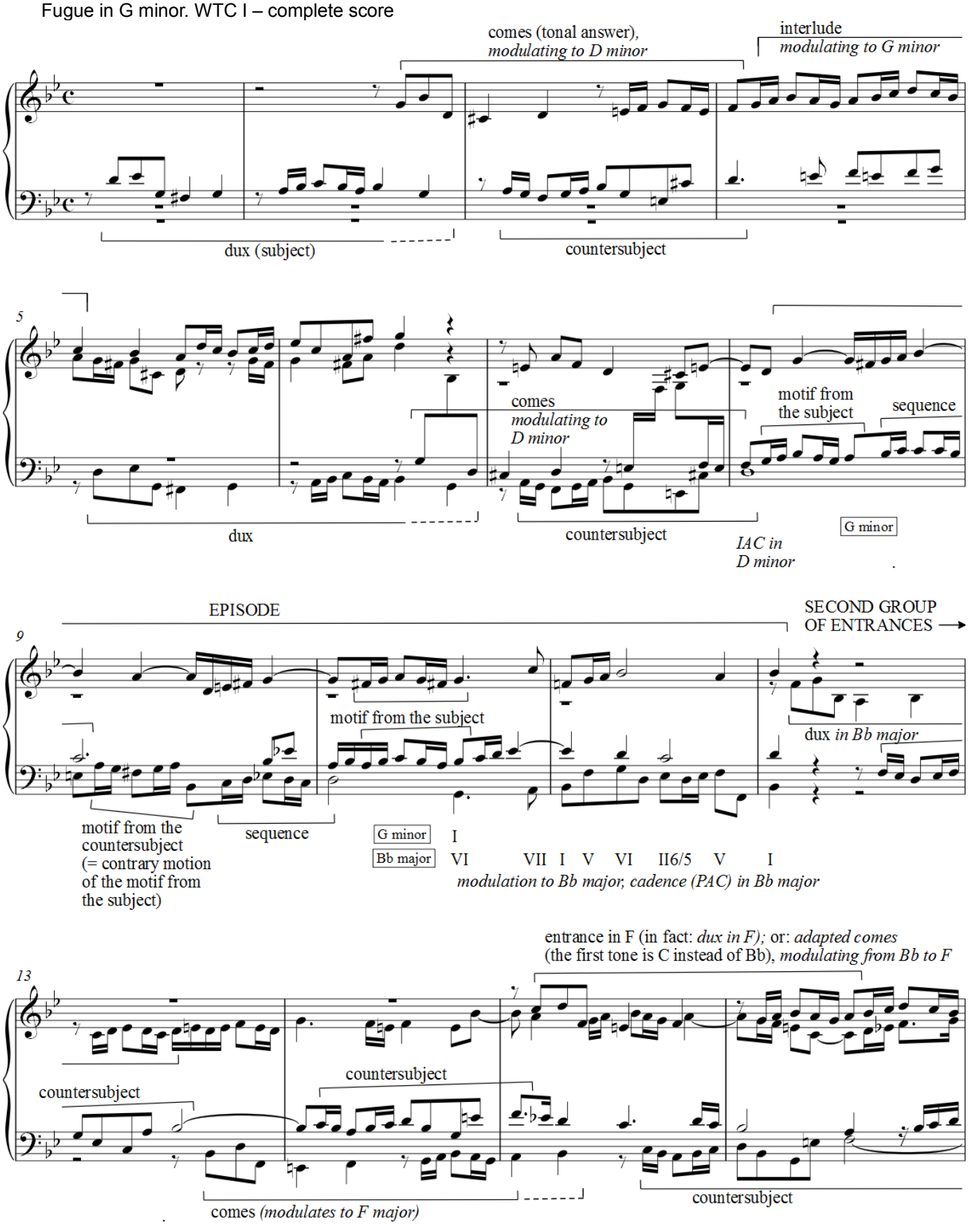
b. relations between subject and countersubject:

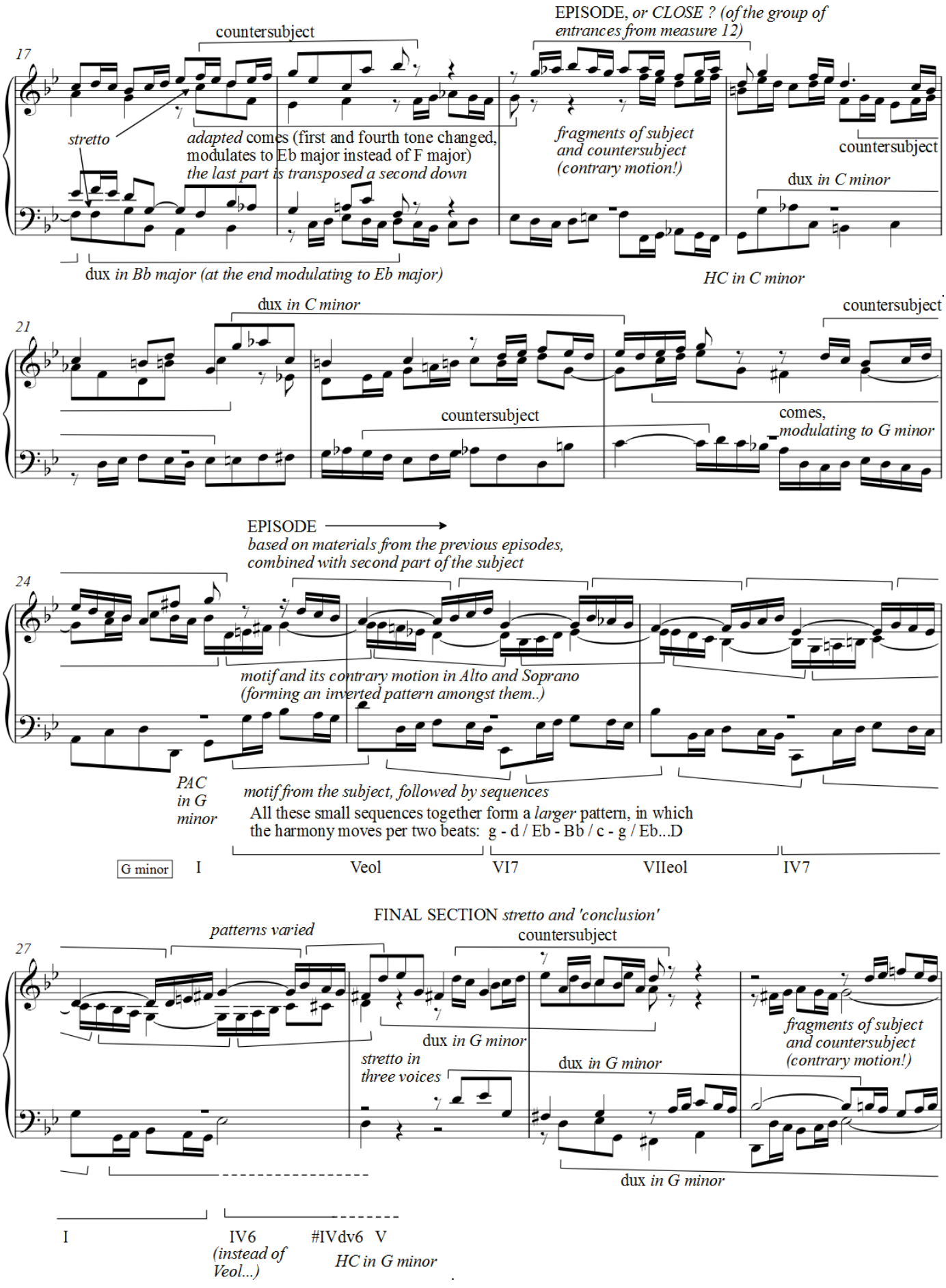


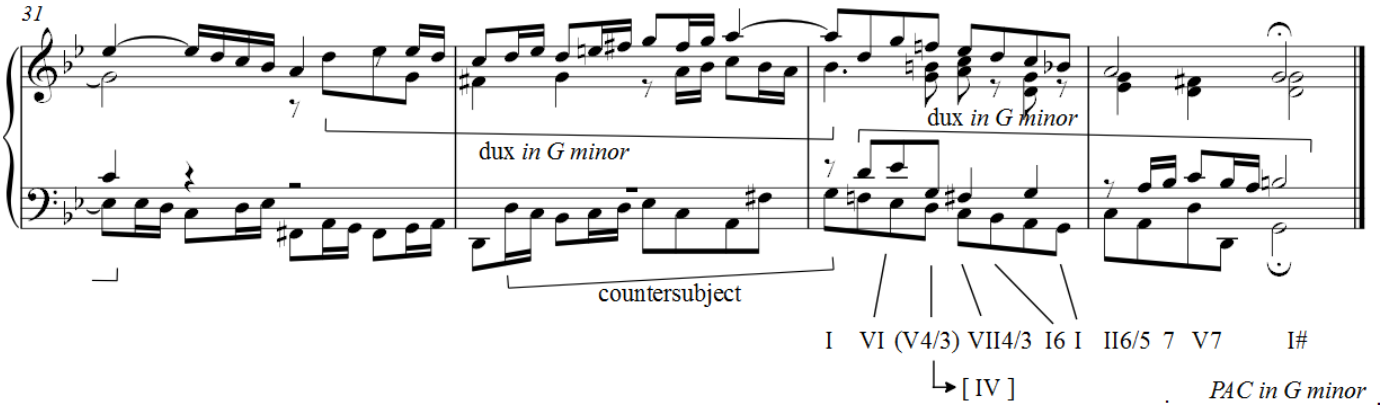
205 This occurs for instance in the Fugue in F# minor, WTC II – see the comments on this piece on page 78.
206 Some exceptions do exist, though they are really rare. And *after Bach* more keys become possible.

In example 69 you see the complete score of this fugue, with some annotations:

Example 69
Fugue in G minor. WTC I – complete score




EPISODE, or CLOSE ? (of the group of entrances from measure 12)
countersubject
17
stretto
adapted comes (first and fourth tone changed, modulates to Eb major instead of F major)
the last part is transposed a second down
fragments of subject and countersubject (contrary motion!)
countersubject
dux in C minor
dux in Bb major (at the end modulating to Eb major)
HC in C minor
dux in C minor
countersubject
21
countersubject
comes, modulating to G minor
EPISODE
based on materials from the previous episodes, combined with second part of the subject
24
motif and its contrary motion in Alto and Soprano (forming an inverted pattern amongst them..)
PAC in G minor
motif from the subject, followed by sequences
All these small sequences together form a larger pattern, in which the harmony moves per two beats: g - d / Eb - Bb / c - g / Eb...D
G minor
I
VIeol
VI7
VIIeol
IV7
FINAL SECTION stretto and 'conclusion'
patterns varied
countersubject
27
dux in G minor
stretto in three voices
dux in G minor
fragments of subject and countersubject (contrary motion!)
dux in G minor
I
IV6 (instead of Veol...)
#IVdv6
V
HC in G minor



The Fugue in E major, WTC II shows cadences in almost all possible keys: E major, B major, C# minor, F# minor and G# minor (only A major does not occur). But almost all keys other than E major and B major are immediately left again, right after the cadences. How this can be done is visable in measure 16: though we clearly reach a PAC in C# minor, the dux entrance starting together with the final chord is in fact in E major - and the harmony is adjusted as soon as possible (already in the same bar) to the dux entrance, by modulating back to E major. [207]

In the Fugue in C# minor, WTC I[208] mainly the keys C# minor and G# minor are used. Having said that, it is striking that even in the dominant key G# minor there are no clear cadences, and that only at two places during the entire fugue a PAC can be found: In measure 35 in the relative major key, E major, and at the end, after a dominant pedal point, in the home key (PAC on I#3 in measure 112, though this cadence is somewhat 'distorted' by the fact that we first move - through a very dissonant suspension - to a suspending 6/4-chord).

Two other keys are several times (mostly briefly) touched upon: A major and F# minor, the subdominant and its relative. Cadences in these keys do not occur. The harmonically most spectacular moment in the piece is when, in measures 95 and 96, the keys of *E minor* and *B minor* are suggested (but not reached - that would be hardly conceivable in a Baroque fugue: E minor is in C# minor something like the *minor version* of the relative; B minor is hardly 'closer' to the home key, as it is something like the *minor version* of bVII (or relative of bII?) - it is definitely 'outside the sphere of influence' of E major as well.

In the Fugue in F# minor, WTC II there are much more cadences, though most are imperfect, somewhat hidden or incomplete. Five times in the piece we find a PAC:

- in measure 20 in the relative major key, and logically at the end of the piece in the home key
- in measure 37 in the minor dominant key, C# minor, and (pretty 'special'!) in 43 in G# minor, the 'minor II'. These cadences are less clear than the cadences in 20 and 70, as they take place in the middle of ongoing motivic elaborations (see the middle voice in both cadences).
- in measure 51 in the relative of the subdominant, D major. Even though the motion in sixteenths goes on after this cadence, this place is a clear division, as the (main) subject of the piece returns shortly thereafter.

The cadences in measures 20, 37 and 51 clearly mark a division in the form (even when the situation in 37 is somewhat unclear: around this measure one 'process' is ending, and another starting). Measure 43 is less clear in this respect: there is no obvious division around this place.

Other keys in this fugue are only touched upon; among these, B minor is the most prominent, as only in this key (weak) cadences occur: IAC in measures 29 (or maybe we should say here: incomplete or

207 See example 64.
208 See example 70.

'avoided' cadence?) and 39. And B minor is the only key in which - apart from F# minor and C# minor - the main subject is written (see measures 52 - 54).

I end this chapter with some general observations:

If we want to understand the harmony and the key design of a fugue, it is primarily important to find the (main) cadences in the piece, as these often are important caesuras in the form. Beyond that it is certainly possible and meaningful to analyze the complete harmony of a fugue, even though this is usually a difficult task, as the almost omnipresent polyphony often hampers the understanding of the harmony. In many passages in fugues it is worthwhile to look for *patterns* and characteristic *harmonic progressions,* such as sequences of descending fifths and fourths, faux-bourdon passages, chromatic bass patterns etc. Often such patterns are repeated in the course of the piece, whether or not varied, and they thus contribute to the consistency of the form and the 'logic' of the polyphonic elaborations.

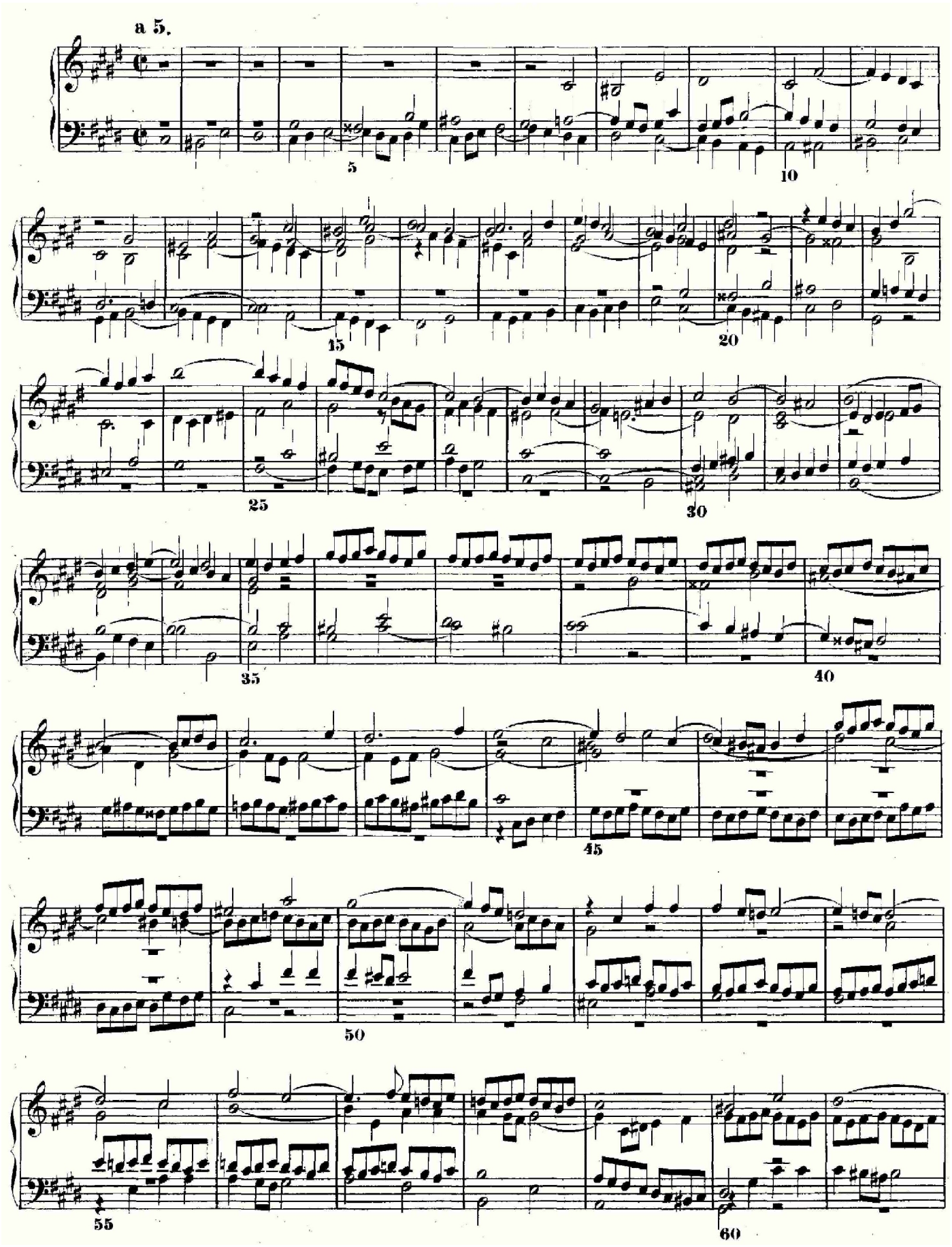
special types of fugue; fugato

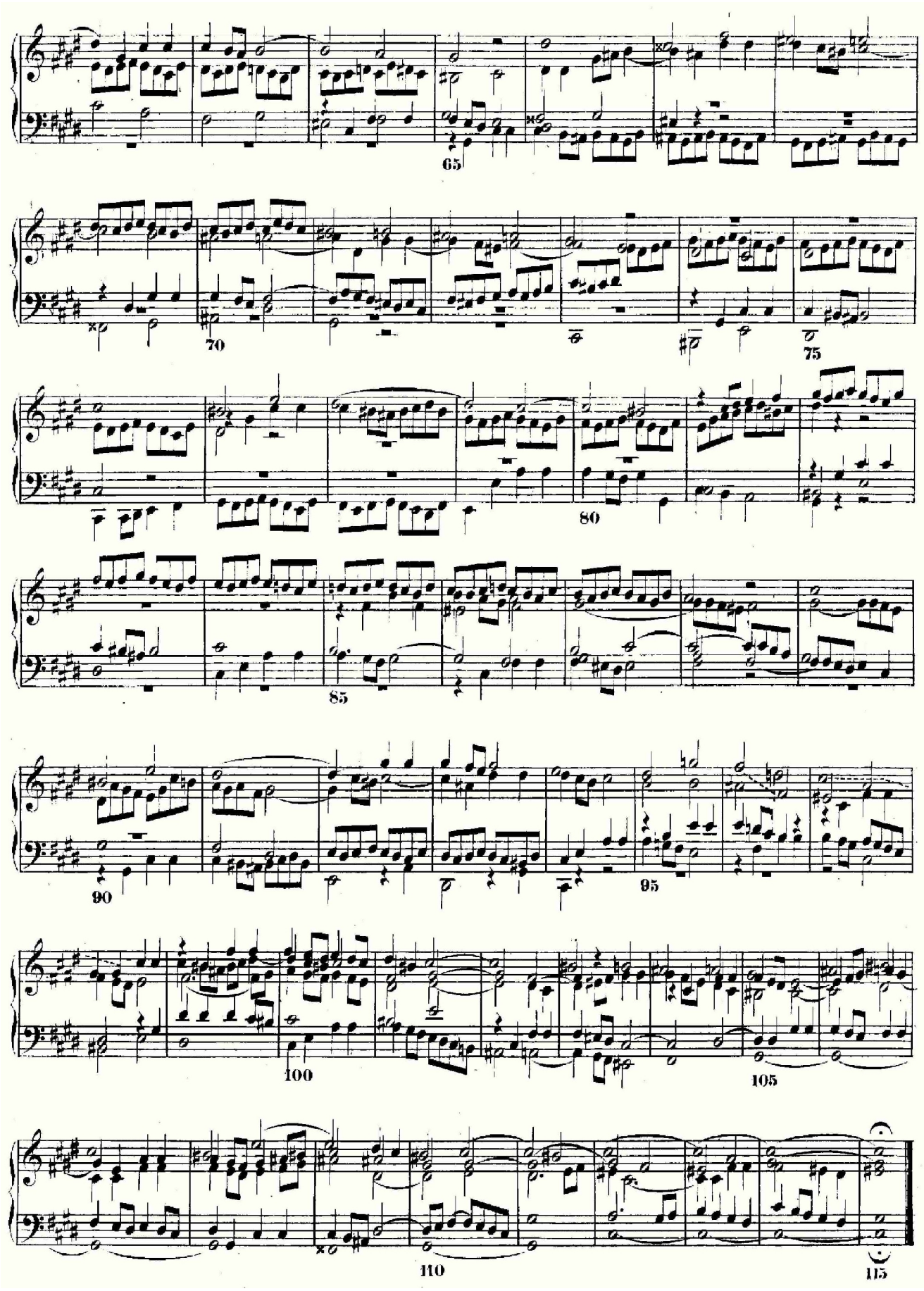
In some fugues more than a single subject is used. This contradicts of course the idea of fugue as a *monothematic* 'form'[209], especially when a second or even third subject is introduced at a later moment in the fugue. Bach, when writing a fugue with several subjects, usually introduces only the *first* subject during the (first) exposition. Other subject(s) then are introduced at a later moment. The introduction of a new subject then can take the form of a *second exposition,* if the new subject is indeed played by all voices, and in the typical 'fugal pattern' of imitations at the fifth. In some fugues, probably some place near the end of the piece, the subjects then appear combined (and interwoven). Often, moreover, a second or (even) third subject is used in a (much) freer way than the main subject: for example: imitations may occur at other intervals, maybe not all voices take part in these imitations etc. Often it is therefore somewhat doubtful whether we should speak of a 'real' fugal *subject*[210] Fugues that deploy two subjects are callled: double fugues , fugues with three subjects: tripelfugues, and with four subjects: quadrupelfugues.[211]

Another sort of doublefugue is that both subjects are present from the beginning of the fugue. Useally such fugues start with two voices (each of them playing one of the subjects. Commonly then the two subjects 'stay together' in the course of the fugue as well. An example of this is the Kyrie from Mozart's Requiem [212]. See Example 72 .

209 See page 27.
210 As it is the case in the Fugue in C# minor, WTC I, see example 70.
211 Examples 70, 71 and 72 contain doublefugues (and possibly a tripel fugue).
212 See example 72.

Example 70
fugue in C# minor, WTC I

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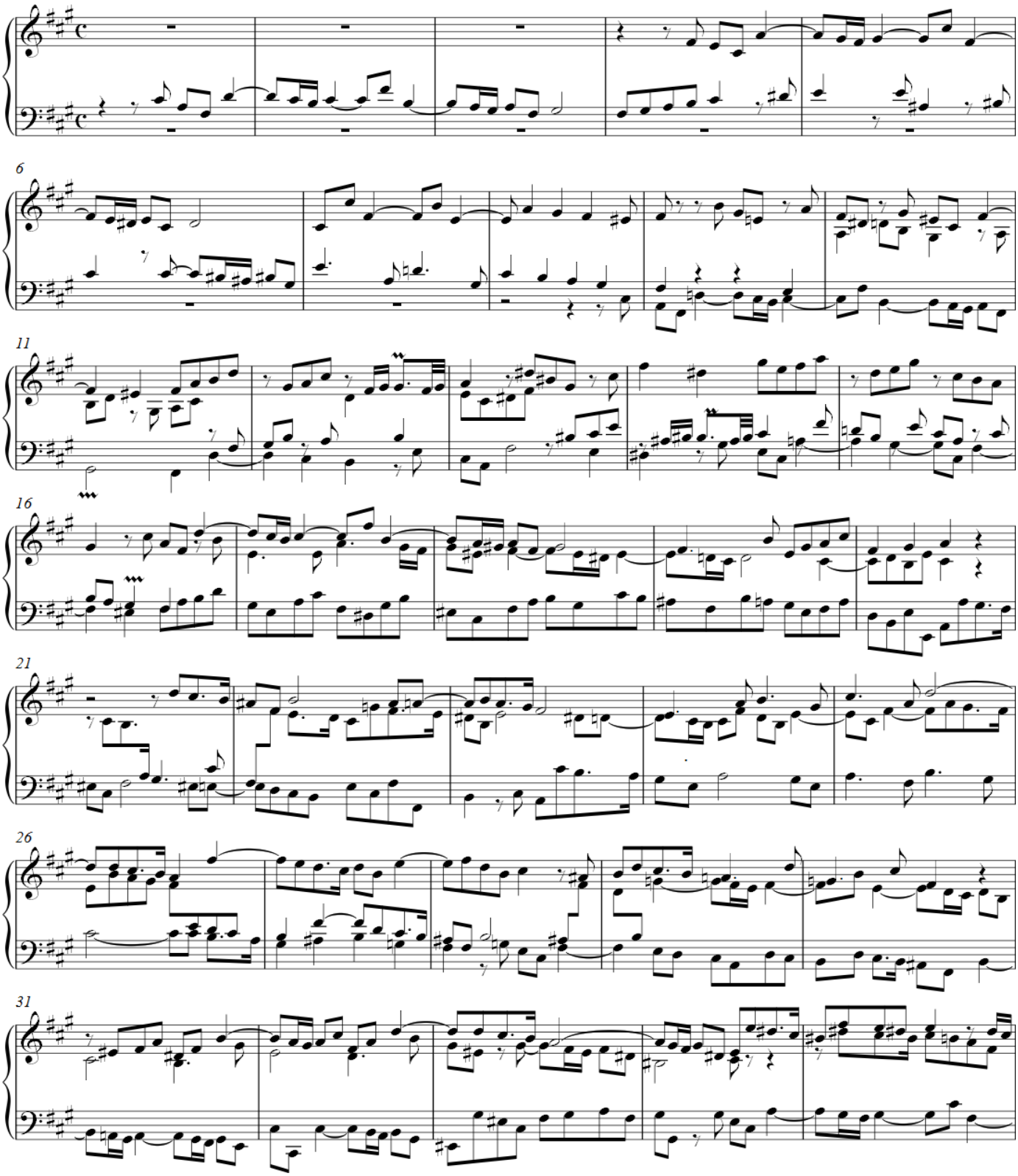
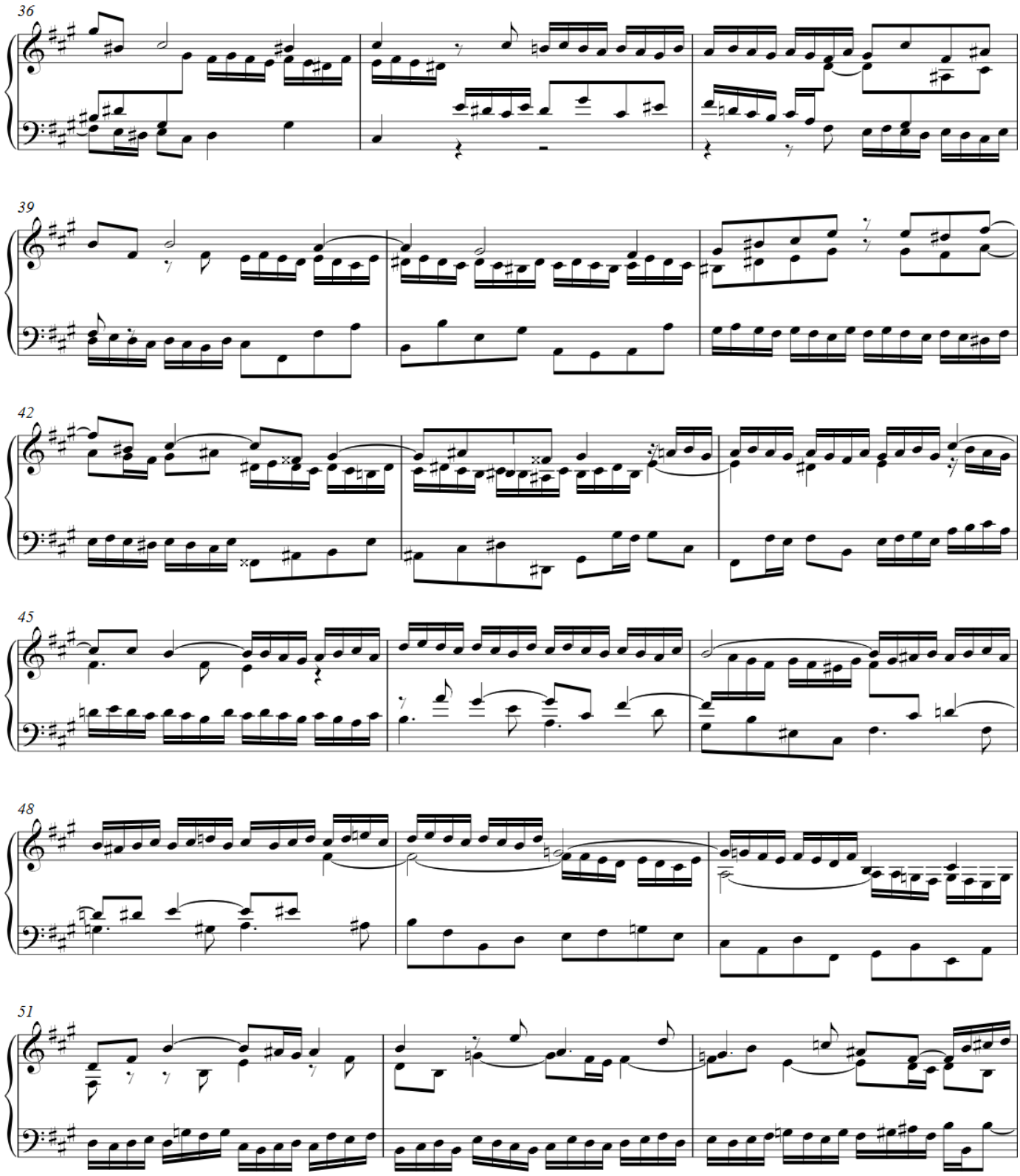
Example 71
fugue in F# minor, WTC II

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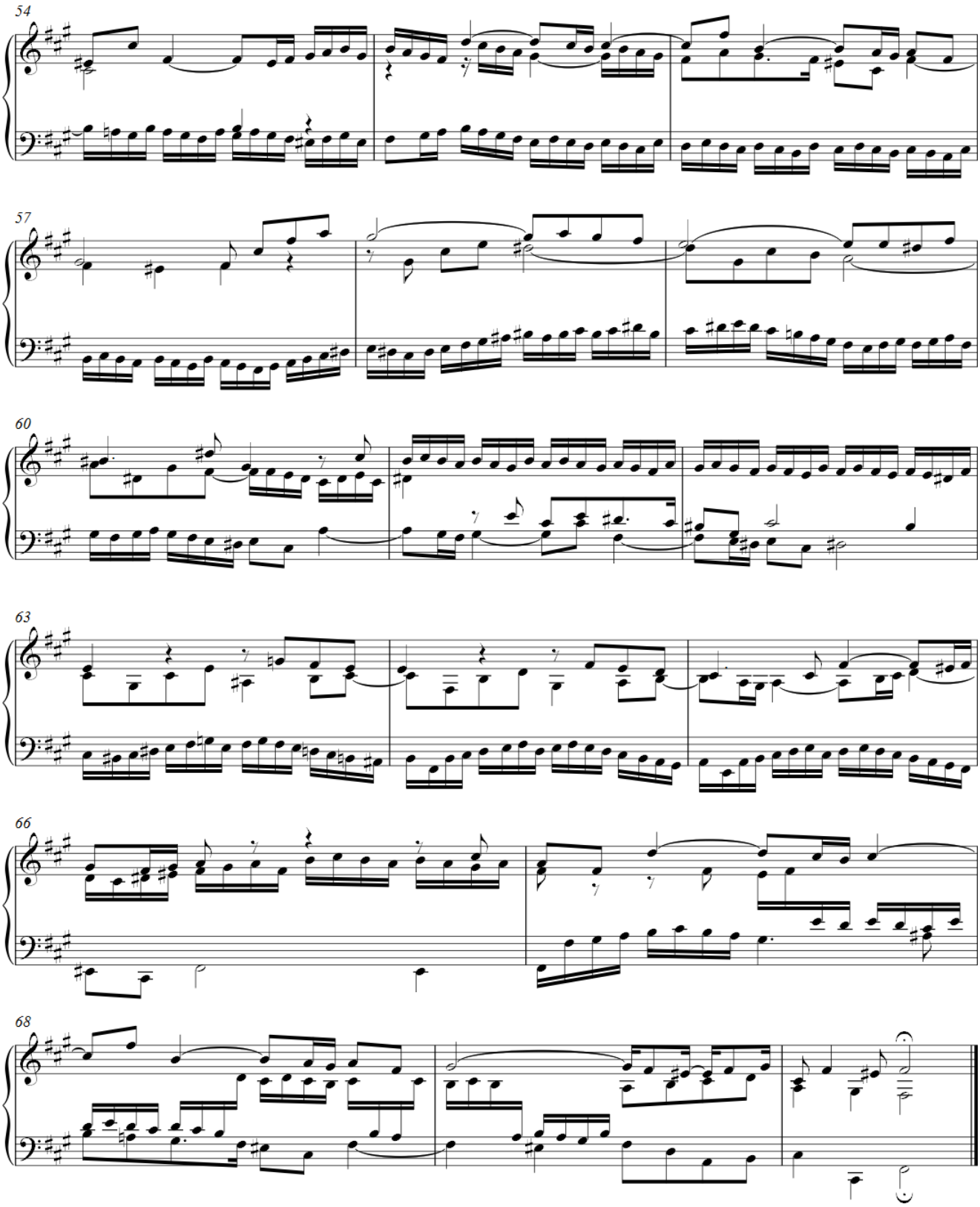
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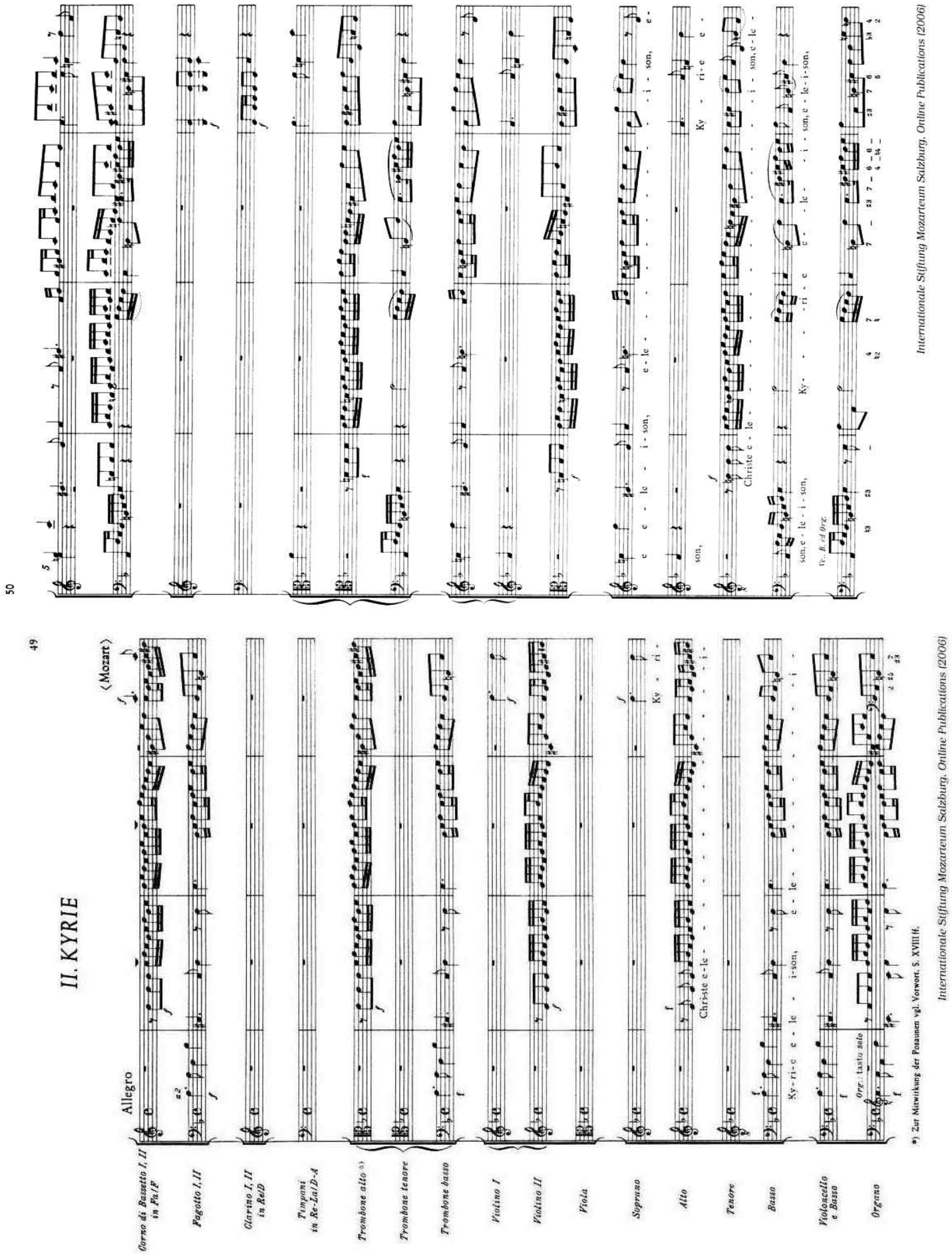
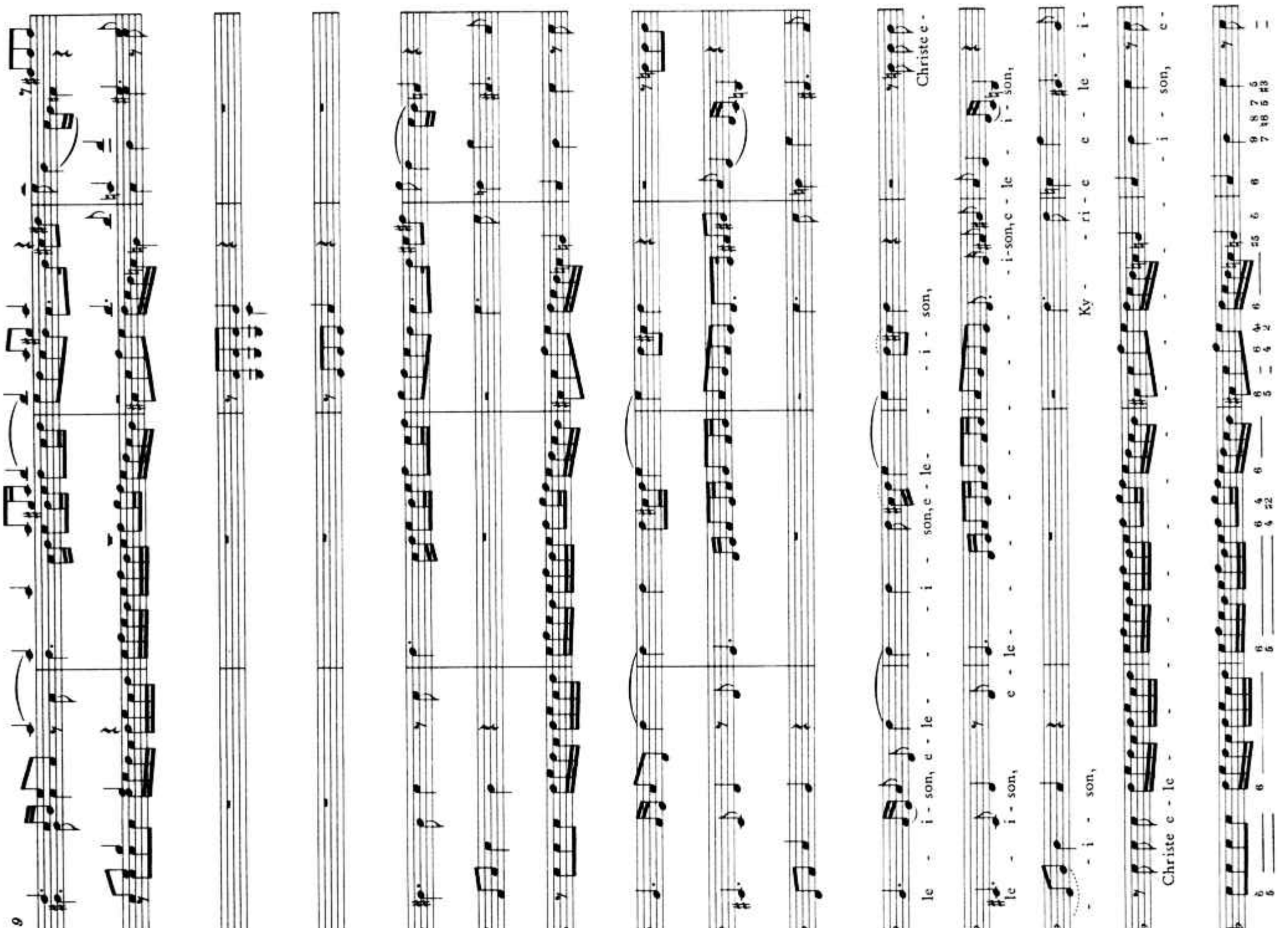
Example 72 Mozartt, beginning of the *Kyrie* from the *Requiem*





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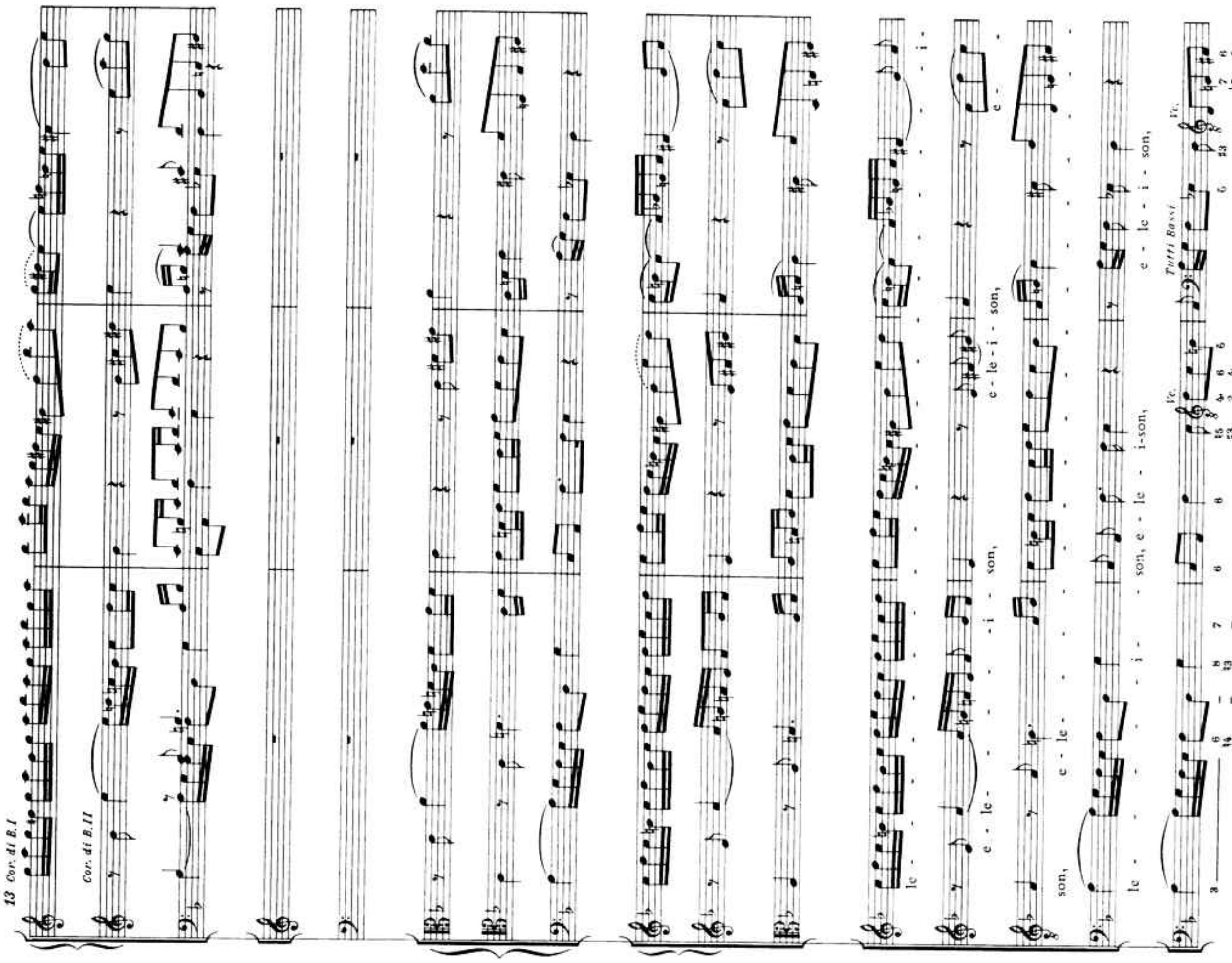

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EXAMPLES

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