

Manual
of
Music Reading

Elementary Phrasets (Expanded Version 2022)
-Minimum division of a phrase and its importance in a performance-

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NKB

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Preface

On the analysis of a music performance, the study about the musical form is usually applied. However, few players have had consideration on the melody form that is more important in actual performance.

I define the minimum division of a phrase that makes meaning as *Elementary Phrasel*. I call it "*Phrasel*" hereafter.

The necessity for it has been discussed by many people.

Tamehiro Kumada writes, "It is no exaggeration to say that the music analysis is actually only grouping." in MUSICAL ANALYSIS METHOD FOR PLAYING¹). The term, "grouping" is used by G. W. Cooper and L. B. Meyer in their book THE RHYTHMIC STRUCTURE OF MUSIC²). They also say grouping is necessary for melody to pattern recognition of rhythm.

Recently, Composer Hiroshi Hoshina insists that the grouping of notes is necessary in his book. "Then, what shall we do to add the meaning to notes just like a line of alphabets. In written English, spaces of every word have the function of conveying some meaning. Or grouping of every alphabet has a meaning as a word. It is similar to music. To give musical meaning to notes, we have to classify some notes into groups."

From the point of view as a composer, he writes "The starting point should be **to group sound according to the state of the notes written in the score, and the composer's intention should be read through it.**" (cf. APPROACH TO LIVELY MUSICAL EXPRESSION -Performance interpretation method based on energy thinking- Chapter 1, Section 2, p.21³), even emphasized in bold.

Like as these, the necessity for trying to analyze melody has been discussed by many people. But actual performances did not reflect it yet and these methods are not common. Now, many performances not only carry little persuasiveness without such analysis, but also are played by too excessive dramatic effect in order to compensate this aiming to make audience "impressed".

I think one of the reasons for these performances is that the melody analysis is not established.

Therefore, in this paper, I would like to describe the new way how to analyze phrase elements.

How to analyze melody is to try to divide a sentence into each segment as quotation from Hoshina's book³). But it is not easy to do so clearly, unlike a sentence. Melody is a line of music which is changed to symbols called notes. It is like a line of alphabets without spaces.

In performance, players add their own intonation to each *Phrasel*. In order to add own intonation by player's interpretation, the analysis must be correct. The performance by player's own taste or custom goes far from the composer's message.

However, there are too many performances without empathy or respect for composers, because such the correct analysis isn't made.

I mentioned melody analysis is necessary for good performance in my previous paper PERFORMANCE ANALYSIS BY SOUND SPECTROGRAM⁴). I explained the way of judging for good performance by Sound Spectrogram. I verify the necessity of this *Phrasel* analysis by "The Analysis Method for Resolution of the Intonation's Problem" in that paper.

I think that this *Phrasel* analysis becomes the concrete standard in juggling the quality of performance.

Phrasets Analysis

Procedure for analysis

First of all, I describe the procedure for *Phrasets* analysis, and then explain its rationale.

The basic idea is to see to which note one note is going to connect.

1. Start with the first note and find its reaching note.
2. Start with the next note, find the next reaching note and proceed in sequence.
3. Identify a sound group of that should be one. (**A. Division of a note, B. Shorter note**)
4. Consider confusions by signs except notes of the original melody. (**C. Slur, staccato, bar line etc.**)
5. Consider contradictions in melody feeling before and after, motif and its variation. (**D. Auftact (anacrusis), E. Improvisation, ornament and variation**)
6. Consider proper explanation for harmony progress. (**F. Consideration of cadence**)

Sections in () are explanations for each.

Capital alphabet in this text is German note name, and so on.

The purpose of *Phrasets* analysis is to bring logic into expression of performance by making meaning to each note. All written notes have to be checked for that.

A phrase is divided as small group of notes as possible not to become a large group. As the procedure of the analysis, it is the first to find a starting note and its reaching note one after another from the first note, or rather the reaching note is the important one. So, to try to find a leading note toward its reaching note conversely is also necessary.

There are also connections of note in larger units, as I mention in detail afterwards.

The above-quoted grouping analysis is useful as a methodology analyzing a phrase construction. However, this *Phrasets* analysis treats the minimum units.

So, we must begin to see the minimum unit at first and then think about the connection of larger units. So, we can perform logically without contradiction.

Another point to note is this. When some contradiction and problem that upset larger units occur while analyzing with following this procedure, we sometimes doubt about the analysis. These sometimes happen in 5 or 6 of the procedure. However, the problem is solved when we find out logical relation positively between *Phrasets* divided to the minimum in many cases. In almost of such cases, variations are piled up, and these are not musical but analytical contradictions.

Contradiction comes when the knowledge of musical analysis, including harmony analysis, is not enough. Initially, it should be the role of music analysis to clear such contradictions and it would be the interpretation of music.

It shouldn't be the other way around. The natural connection between notes is so strong and music should be expressed with this feeling. The most important thing is to perform without breaking this connection.

Phrasets analysis is not difficult if you listen to tones. Rather, it can be said that the notes combined naturally explain as a theory what connection lies between notes.

1. Concept of *Phraset* analysis

As mentioned in the procedure for *Phraset* analysis, the purpose is to explain the connection of tones, but the theoretical proof for its basis may be necessary. Although analysis by harmony theory is often done, but this analysis method approaches by melody.

The above-mentioned Hoshina's book³⁾ explains about "grouping of rhythm" as one of melody analyses in detail. *Phraset* analysis is not contradictory to it. *Phraset* analysis bases on "melody", and grouping theory bases on "rhythm". That is the difference. And the improvisation method of melody is the basis. The improvisation comes from ornamentation of Baroque Music. (cf. Bibliography⁵⁾)

In actual improvisation, it is combined with some patterns. The approach of *Phraset* analysis is to recognize the patterns on the melody written in the score.

It is generally thought that improvisation is difficult or needs special abilities, but in actual, it is surprisingly easy.

Revealing our hands may make you lose interest. However, I dare to list some patterns in order not to overestimate the values of improvisation.



example 1; improvisation pattern [sound source 1](#)

1. and 2. are scales, 3. is a turn (echo), and 4. is a broken chord, none of which is very difficult. Even if you play the piano for the first time, it is not difficult to play such notes. It's even easier to play these partly. It would seem to be an extreme argument that improvisation patterns are all for these.

But that's a fact. All music is made by these patterns. And others are application of them. How complex an improvisation of Jazz is, it is only a variation of their combination. Not only that, it's the same with Bach. All music composed in the past can be explained by these patterns.

That is, "all music (melody) are made up of scales and broken chords."

The methodology is in the explanation for composition method by Arnold Schoenberg FUNDAMENTALS OF MUSICAL COMPOSITION edited by Gerald Strang & Leonard Stein⁶⁾.

The method to variate a motif is written in detail in that book Part 1 Chapter 3. And it is defined as "the smallest structural unit is the phrase" in Chapter 2 Musical Phrases before that. I think composers may think that a smaller unit than phrase is too small to reflect their intentions. Or it is recognized as composers' subconscious parts. I make an issue on this point.

I would rather think such unit reflects the composers' deep intentions. When players investigate the composer's deep intention depending on score, these hints are in variation of motif.

Schoenberg quotes Beethoven's works as many variation examples attempted in Chapters 2

and 3. That is, it could be said he teaches his students the variation method as a result of *Phraset* analysis which I am trying to describe hereby.

The important point is that the purpose of the base note to be ornamented or varied is how to emphasize the ornamented notes, not only to change melody. It is very important to recognize which note emphasizes and which one is emphasized. This *Phraset* analysis explains that logically.

2. *Phraset* analysis method

A. Division of a note

To divide a melody into the minimum ends with each note, of course. But a single note makes no meaning as I mentioned above. As Heinrich Schenker says, "However the motif needs some, at least two consecutive notes to be considered also as a phrase, doesn't it?" (cf. BEETHOVEN FÜNFTTE SINFONIE, Universal edition p.10⁷), we cannot recognize any meaning by only one note.

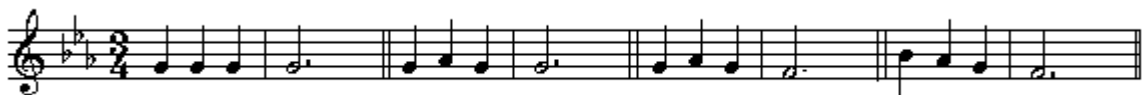
However, when one note is divided into some, a meaning is born.
I show one example of variation of one note as a procedure for *Phraset* analysis.



example 2; L. van Beethoven's Sym. No.5 c-moll III, [sound source 2a](#)

The four same notes that are repeated three times are created by dividing originally one note in example 2. The fourth notes in bars 7-8 is a variation of these notes rearranged into scales. The meaning as melody is added further by repeating only the same note until then. And it is accompanied by a change in sound. So, the force to lead to F, the final reaching note of this phrase, is strengthened further.

There is a process to change an improvisational pattern as this way.



example 3; from the first pattern to the final pattern, [sound source 3](#)

As shown in this example 3, a change is created by moving a divided note to the next upper note, and finally it is varied into a descending passage.

If it is varied to an ascending passage, it will be like example 4, and it will be the melody that appears in the recapitulation of the 1st movement in the end.



example 4; [sound source 4](#)

And if the motif is varied to a broken chord rather than to a scale, it becomes the beginning motif as top stave of example 5.



example 5; [sound source 5 of top stave](#) [sound source 5 of bottom stave](#)

The so-called "fate motif" of four notes is generally explained as G is divided into three and goes to Es. (The bottom stave of example 5 is the beginning of the 4th movement. The motif is varied to broken chord in the first half, and to scales in the second half.) However, this phrase is seemed to be a motif of four bars, if we take it as a variation of one note that the fourth note is major 3 down. (It is written in detail in **D. Auftact**.) This theory supplements motif interpretation logic described in Heinrich Schenker's book⁷⁾ quoted above.

In this way, one note can be added a meaning by dividing one to some notes or by making even more variation, even if one note itself has no meaning. Consequently, new melody is born. New *Phraset* is also born in it.

"Fate motif" is made as figure 1 when we see the relation of notes by prototype.

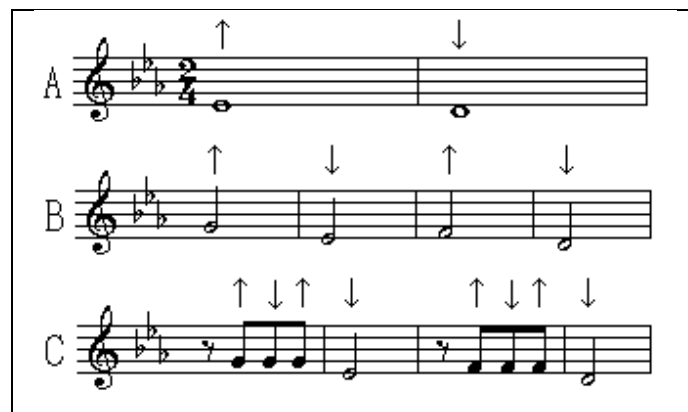


figure 1

↑ or ↓ in this figure 1 shows the direction of the tone.

It is similar to up and down beat. That is, ↑ has directional force to ↓. ↓ shows a reaching note.

Strictly, ↑ on stave A subsists in staves B and C, but I leave it now, because the minimum

unit's analysis. Would you understand that *Phraset* analysis is for the resolution of phrase? On this basis, we can divide it in four *Phraset*s like figure 2 when we take one *Phraset* to complete at ↓.



figure 2

To consider all 8th notes as ↑ is not wrong in the stage of stave B, figure 1. But analysis that is necessary for performance is shown in this *Phraset*, because there is a meaning to emphasize the prototype further by the development to the stage of stave C.

B. Shorter note

There are some general rules to be watched out for the division of *Phraset*.

Relatively shorter note ornaments or emphasizes the following longer note. So, these two notes must be made as one *Phraset*.

There will be some disagreements on this point. However, as general western melody style, ornament is given in front of the note. Ornament given after the note, like Japanese "kobushi", is hardly seen in western music. It may look like that at a glance. However, it doesn't just only ornament. To emphasize the note, it is put in front. ↑ and ↓ help to understand as above figure 1.

In the 2nd bar at the beginning of the 4th movement in the second half of bottom stave in example 5, the dotted half note G goes to the quarter note F. This G is F originally, but varied as a nonharmonic tone or as a suspension from the harmony of the before bar. The note length is relatively longer than the harmony notes in order to increase the sense of solution by its effect to keep stress long.

It is necessary to pay attention not to be bound by the general rule for nonharmonic tone that comes on down beat, such as appoggiatura or suspension.

I show the beginning of the 2nd movement of Beethoven's Sym. No. 5.



example 6; [sound source 6a](#)

In the top stave of example 6, shorter 32nd note, as a general rule, ornaments 8th or dotted 16th notes. The bottom stave is easier to understand. In the top stave, we tend to see the connection of flags as one phrase, and then 32nd note seems to ornament the former longer note. We can recognize automatically by thinking which note is more important.

is not a sign.

A bar line that divides stave may be thought to show the division of melody. However, "A bar line indicates main accent downbeat of the phrase" is the correct explanation. The right side of a bar line is downbeat and the left side is upbeat.

Musical grammar writes "Lines dividing a certain number of beats into measures; the bar-line also indicates the position of the main accent". (cf. William Lee, BELWIN POCKET DICTIONARY OF MUSIC Bar lines¹⁹⁾) Generally, "A bar line is a vertical line in a stave to divide beat unit and divided beat unit is a measure." (THE NEW GROVE DICTIONARY OF MUSIC AND MUSICIANS Shigemi Takei, measure / bar line VIII p.503-504⁸⁾) But when we divide notes by *Phraset*, it is easy to be mistaken.

That is, a measure as a part between two bar lines never indicates the group as phrase unit. Or there are many cases that aufтакт before a bar line and the next note after the bar line make close relation ↑ and ↓ over the bar line as one *Phraset*.

D. Auftact (anacrusis)

We need to understand aufтакт for *Phraset* analysis.

I quote the meaning of aufтакт (anacrusis) that is used frequently from a dictionary. It is "within rhythm of meter, just before a down beat (the main accent of the first beat), has a function to lead for a down beat. Or a note or some notes to lead down beat that exist before the first bar line of phrase or melody." (cf. THE NEW GROVE DICTIONARY OF MUSIC AND MUSICIANS Ichirou Kadokura up beat VIII p.504⁸⁾)

Down beat is limited as the first beat of a measure there. But I think medium strong beats such as the third beat of 4/4 or the second beat of 2/4 etc. should be included in it. I think each also has an anacrusis, but I set aside it now.

Please include all such cases in aufтакт. It is sign of ↑.

In the intonation of melody, western music almost always has aufтакт. Of course, not all. I forgot the source, but I remember to have read an explanation affirming that "No music has no aufтакт." It is extreme logic, but it may be said "almost".

Also, the intonation of western language has aufтакт in many cases. I think there is a significant relation in terms of intonation between language and music.

For example, languages without aufтакт are Japanese and the Slavic languages of Eastern Europe such as Czech or Russian. The reason may be that those languages have no articles as same as Japanese. This issue needs to be studied in detail hereafter.

When we listen to music with noticing that, Russian folk rhyme and works of Czech composers often does not have any aufтакт indeed. (example 8)



example 8; A. Dvořák's Sym. No.9 e-moll Op.95 II [sound source 8a](#)

In this example 8, if all melody is written one beat prior, aufтакт may be recognized. However, Dvořák seems to have wanted intonation without aufтакт, I think.

Even composers in the area of the language that has articles use such melody frequently, of course.

We can see a sample in Beethoven's Sym. No. 6 "Pastoral". (example 9)



example 9; L. van Beethoven's Sym. No.6 Op.68 F-Dur,
top stave; bars 16-19 of the first half, bars 151-154 of the second half I, [sound source 9-1a](#)
middle stave; the beginning III,
bottom stave; bars 165-168 III, [sound source 9-2a](#)

In this work, Beethoven seems to consciously use the cases with and without aufтакт as example 9.

In the first half on the top stave, he uses the part of the first motif in the 1st movement. (example 10) The beginning is a melody with aufтакт and starts with 16th note. (The first G is the last note of the former *Phrasen*.) And in the second half, he uses melody without aufтакт as a variation of the same third *Phrasen*. Though the passage in the development section in the second half seems similar.



example 10; theme of L. van Beethoven's Sym. No.6 Op.68 F-Dur I, [sound source 10a](#)

Beethoven adds the titles to each movement himself. In the 1st movement the title "Awakening of pleasant emotions when arriving in the countryside" is attached. It's my guess, but perhaps he went to Czech Republic or Hungary, a little further away than Heiligenstadt etc., on the outskirts of rural Vienna. Nowadays, we can go there in an hour by car. In those days, it may be a trip spot. He may have got the impression of arrival at the country by listening to such intonation without aufтакт of conversation and steps of folk dances around there.

Sudden birds' voices (also without aufтакт) by the clarinet and the fagot are heard in bar 53 would be one of the pieces of evidence of that.

In the middle stave of example 9, more clear melody appears in the 3rd movement. Melody with aufтакт begins from the third beat. From Trio in the bottom stave, melody suddenly begins from down beat without aufтакт unsophisticatedly. This is just "Happy Gathering of the country people"¹¹.

The culmination of the treatment of the presence or absence of this aufтакт, which captures the voice of talk or the way of dance of the people, and voices of birds in rhythm, appears at the end of the 2nd movement. (example 11)

example 11; L. van Beethoven's Sym. No.6 Op.68 F-Dur II bars 129-132, [sound source 11](#)

In example 11, the flute is written as *Nachtigal*, the oboe is written as *Wachtel* and the clarinet is written as *Kuckuck*.

Only *Kuckuck* has no *auftact*. However, the clarinet player becomes to want to play on *auftact*, so this part is often unexpectedly confusing. (You can hear its tendency a little in [sound source 11](#).) It is certain that Beethoven focuses on such intonation.

Of course, such example can be seen also in other Viennese composers. (example 12)

example 12; F. Schubert's *Moments musicaux* D.780, [sound source 12a](#)

This example 12 is a work that is well-known in Japan as Schubert's piano piece called "*Moments musicaux*". One of the reasons why these works without *auftact* are very familiar to Japanese people is that such intonation matches Japanese language.

Let us take a closer look at these melodies. "*From the New World*", "*Pastoral*" or "*Moments musicaux*" begin without *auftact* actually, but the intonation with *auftact* may be seen in the middle of melody according to the general rule of **B. Shorter note**.

Only the 1st bar of Trio in the 3rd movement of "*Pastoral*" ends with a shorter note against this general rule.

Based on these, the first three 8th notes of the first motif of Beethoven's Sym. No. 5 can be seen as *auftact*, if four notes are considered as one *Phrasen*. (example 13)

example 13; L. van Beethoven's Sym. No.5 c-moll I [sound source 13a](#)

Then, the division of the *Phrasen* as shown in figure 2 seems to be wrong. But we cannot go to Es smoothly, when we try to perform these notes as usual by dividing G into three and going to Es. We come to need to make pause on the bar line.

If we put together four notes, we can make the famous theme with no problem. If you are eager to divide them, it is the only way to perform each note *marcato* so slowly as former maestro did in the past. It is inevitable that conductors without knowledge cannot understand this sense. This could be understood in actual conducting orchestra live.

Considering the performance that is faithful to *Phrasen*, applying ↑ and ↓ to bowing makes you understood easily. (figure 2)

The topic is a little off, the other issue is the meaning of the half notes that are connected by a tie. There are several opinions, but if we think it is for change stroke of bow, all the bowing afterwards becomes reasonable.

Needless to say, *auftact* itself combines strongly to the next down beat and becomes one *Phraset*. *Auftact* emphasizes the next down beat over bar line.

E. Improvisation, ornament and variation

Here, I describe in detail about the baroque ornamentation once again.

Ornament and variation are used as the same meaning as improvisation. Or in playing method of Baroque, improvisation like ornament note used today is called French School and variation is called Italian School. Notes to be changed are the same, but only the speed of changed notes is different in both Schools.

Some examples are compared below.

The top stave; French School, familiar signs as ornament notes today

The bottom stave; Italian School, passage is changed in speed with the same notes of the top stave

This is similar to the explanation of ornament method. It explains to play these notes as quick as possible by reducing the length of notes on the bottom stave.

1 2 3 4 5 6 7

example 14; [sound source 14](#)

- For reference, here are the commonly used names for these ornament symbols.
1. acciacatura *It.* (long version: appoggiatura *It.*, before beat version: coulé *Fr.*),
 2. 3. Mordent *Ger.*, 4. 5. turn *E.*, 6. arpeggio *It.*, 7. Schleifer *Ger.*

The sound pattern is the same, Italian school makes melody changed (variated) by playing it slower.

Even though, we usually look ornamented score as the bottom stave today since the Classical period as around the end of 18th century. Surely, these are only some examples, but most of other passages belong to those patterns.

Divided note in **A. Division of a note** above is also one of the ornaments. However, melody is added such change of notes for each divided note. Fractal situation is made by the repetition in this way. We are so interested in analysis of this situation. But let me leave it to scholars of music. We should have an interest in the minimum *Phraset* the most. To incorporate ornaments complexed is the improvisation method as this. It would be possible to think that we look improvised score.

The score of G. PH. Telemann SONATE METODICHE FUR QUERFLOTE (VIOLINE) UND

BASSO CONTINUO¹²⁾ explains this process. It is an important score as an improvisation guide written for study in Baroque era.

As a more familiar example, I take the famous Canon's phrase from J. Pachelbel's Canon and Gigue (Kanon a 3 con suo basso und Gigue).

This is that two parts chase one phrase with a delay of two bars each and is a good example for *Phraset* analysis. Because the chord composition is simple and made in units of two measures in order to establish a canon. And because we can see the steps how the improvisation is added.

There is introduction of two bars by basso continuo before the melody begins. The rest is as per this score.

There is no slur. In those days, slur, in general, should be recognized not to be written. Then slur written in score is added by editor. Of course, it is no problem if it has no contradiction with *Phraset* analysis. But we need to doubt the most slur.

We must read all published score in doubt, not only about score in those days.

These days, the edition study has been progressed. It is very wonderful that Urtext has been published recently which is faithful to the manuscript or explains composer's intention clearly. However, there are many scores that are generally available and that we cannot believe.

Especially as for Mozart, his scores with many additional signs have been sold. Originally, his score has few signs as dynamics etc. Some signs are added by guessing that is done freely as a custom of that era. In particular, many orchestral parts still have old description scores. It is very disappointing.

Also, there are scores that have additional signs written by many very famous maestros or players in the past and those are believed blindly. It is probably because that "To add player's own signs to score is one's personality" has been believed. Such an era had continued until around 1970.

However, legendary maestro Wilhelm Furtwängler analyzed *Phraset* accurately accompanied with musicologist Heinrich Schenker. It can be understood by his recording. I think it is the key of his great performance.

Now let us verify J. Pachelbel's Kanon. (example 18)

A
 B
 C
 D
 E
 F
 G
 H
 I
 J
 K
 L
 M
 N
 B.C.

F: I -⁶/₄ vi -⁶/₄ IV -⁶/₄ - V I

example 18; J. Pachelbel's Canon
 from Kanon und Gigue in D-Dur für drei Violinen und Basso Continuo,
[sound source 18](#)

In example 18, alphabets (A-N) are added to each unit of four measures that repeat ornament (variation).

Like as this, we can see the process to ornament the first part A and the way of becoming more complicated in this work.

Nonharmonic tones are painted in blue on this score. Explanation of each is omitted, but these nonharmonic tones are very important for *Phrase* analysis. The approach to musical analysis in harmony is very precise and valuable. And moreover, in performance, and acoustically, the note that disturbs the harmony (nonharmonic tone) is a major element of expression.

In music, especially in ensemble or chorus, chords provide a well-organized sound and produce clear color feeling. When a nonharmonic tone is inserted there, its clearness is lost and stress is born. When the nonharmonic tone resolves to the next harmony tone, not only the clearness is instantly restored, but also the beauty can be felt even more. The feeling of relief from the stress impresses the audience.

The most effective one would be pedal point (Orgelpunkt), but on the contrary, nonharmonic tone is often used as a little ornament. The progression of harmony, such as the evolution from Orgelpunkt to the final reaching note, is called cadence. However, it can be said that the performance effect is the same as the solution for resolution of nonharmonic tone.

The variation of phrase is promoted by adding many nonharmonic tones as in this example 18.

There are places in the score where some notes are circled. These are sounds that are originally anticipation or suspension with further ornamentation.

It should be understood in advance that in Baroque improvisation, varied new melody is a large deviation from the original one. However, it is the basso continuo that binds freedom. It is the bottom stave written B·C of this example 18. This bass dominates the chords (sound) of every moment.

In other words, even if all the scores of each stave are assigned to other parts and played at the same time, there is no problem in chords. Of course, the same can be said for every two bars. However, the latter two bars are the answers of the first half or the questions to the next, so the intention should be understood.

The problem in play will be G part.

It seems that an ascending mordent is added to each beat of the basic melody A. However, if the stave G is played as it is by *Phraset*, a shorter note will be put after in terms of rhythm. This intonation is not Western, as mentioned in **B. Shorter note**. Rather, it may be tried to develop a new phrase by connecting it with the next eighth note. Like as this, there are many mistakes to see each beat as one *Phraset*.

I will verify this difference. I extract only this part in example 9.

The image shows a musical score for example 19, consisting of two staves: a treble clef staff on top and a bass clef staff on the bottom. The treble staff contains a complex, fast-moving melodic line with many sixteenth and thirty-second notes, including some grace notes. The bass staff contains a simpler, more rhythmic line with mostly quarter and eighth notes. The key signature has one flat (B-flat), and the time signature is 4/4. The score is divided into four measures by vertical bar lines.

example 19

When *Phraset* is divided as mordent of each beat, performance is like [sound source 19-1](#).
When *Phraset* is divided correctly, performance is like [sound source 19a](#).

These notes in sound sources are converted into MIDI data. The last note of *Phraset* is played by 80% of the real length of the note, and the others are 100%.

These sources are played just mechanically in this way. However, we can hear the intention of the music clearly. The impression of incorrect sound source 19-1 is childish. The music is stagnant. We cannot listen as ornament of stave A's melody, and only unsteady impression remains. However, such performance is frequently found in fact.

The performance that has been correctly analyzed by *Phraset* is dynamic. Its lively expression makes us feel the motivation for new ideas further from the melody E which was completed once.

It should be noted that even the difference in performance of these mechanical sounds shows the meaning and logical relationship of each sound.

However, no matter how I emphasize the necessity, the difference is not understood without listening to an actual performance. Even if we listen, there are many problems to make such sense as shared awareness. Therefore, I verify this point by sound spectrogram analysis. I wrote it as a method to judge whether a performance is good or bad in my paper PERFORMANCE ANALYSIS BY SOUND SPECTROGRAM⁴⁾ as "Analysis method that solves the intonation problem".

Following figure 3 and 4 show analysis by sound spectrogram of sound source that is converted as WAVE format from MIDI data. Everything is handled in the same computer and unrelated with live sound.

You may doubt how different in the lines of mechanical sound under the same condition owing its division of *Phraset*. How different in the intonation of melody, even though it's a mechanical sound? It's no wonder. But the difference is clear by comparison of these sound spectrogram analysis of sound source in actual.

In short, figure 3, detail in unit of *Phraset* is fine and the melody line appears smooth. On the other hand, figure 4, *Phraset* is almost out of recognition. Slightly, break in actual sound part (deep red) or in low tone range (light red) is shown, whole sound is uniform and intonation cannot be seen. Mechanical performance may mean such one.

In actual performance, this break of incorrect *Phraset* is listened blatantly. Also, the sound's impression is different from cluttered sound as shown in this sound spectrogram analysis. Study of music psychology may be necessary. I expect specialist's investigation.

At least, there is no doubt that correct *Phraset* analysis makes the stream of music better remarkably by these sound spectrograms.

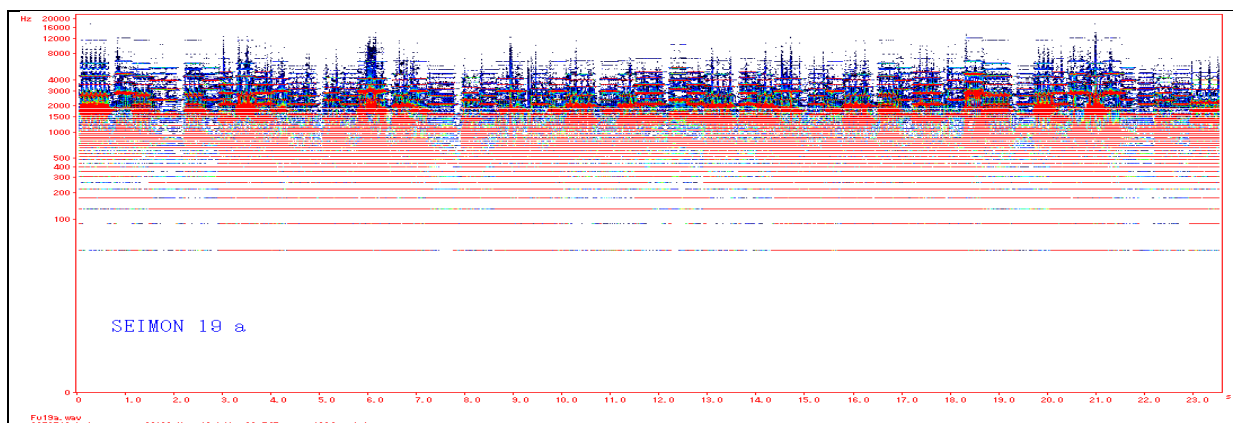


figure 3, [sound source 19a](#)

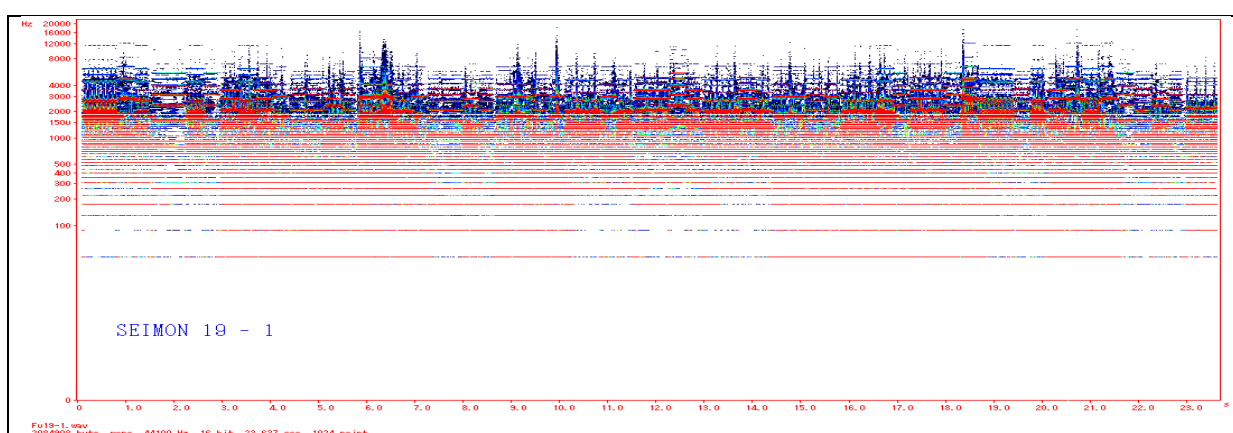


figure 4, [sound source 19-1](#)

There is also the difference in formant part of the highest overtones. In figure 4, every part is linear. In figure 3, changing occurs accompanied with melody.

That causes the performance to be listened as childish. As I mentioned in my previous paper⁴⁾, the sound of good performance differs with, so to speak, the overtones more than the sound on the actual score. Even in these mechanical performances, good sound is recognized to be borne by correct *Phraset* analysis.

F. Consideration of cadence

Cadence in the previous section is defined as "A close in a melody or harmony ending a period, a section or an entire piece. The cord progression at the close of a phrase." (cf. William Lee, *BELWIN POCKET DICTIONARY OF MUSIC*¹⁹⁾) I use it now for the meaning to converge the progress of note to a certain note here, including "resolution (where a nonharmonic tone progresses to a harmonic tone)".

That is to say, the purpose of *Phraset* analysis method is to show clearly the resolution note as explained by \uparrow and \downarrow .

In **A. Division to some notes**, divided notes converge to the last note. In **B. Shorter note**, every note goes towards the last longer note, too. In **D. Auftact**, the purpose is to progress the melody to the next down beat, of course. Or all of them show cadence. In the original meaning, cadence is a term in the harmonic theory where the chord progression from Dominant to Tonic makes the end-form. In fine consideration of each harmony, such chord progression can be applied to each. It is a harmonic theory and let the work left to the field of harmony. Here, I would like to make a problem of determining whether one note is going

toward the reaching note or it is reached.

So, the quoted words of Heinrich Schenker: "However the motif needs some, at least two consecutive notes to be considered also as a phrase, doesn't it?"⁷⁾ is necessary for solution of this problem. One sound cannot show its intention of the direction. One note must complete itself. We can regard such note as "oh!" in a language. Existence can be understood if it is such a sound, but it will not be frequent.

In other words, in the case that there are two notes, one (naturally the last note) is ↓, and another must have function ↑ to progress to it. We should investigate such a relation about every note.

Harmony theory has a term as chord progression, but analysis of progression about each note of melody has not been done.

It may have been missed as a matter of course. There is certainly no problem in the parts that are easy to understand. But when we analyze every note, there are always ambiguous notes left. If it is still left mistaken, function of every note thereafter is displaced in order. Though this is a slight thing in case of thinking about structure or form, we may see only the important parts. But player should always have an intention for every note and express the direction of every note. So, we can play the meaningful performance.

This is the importance of *Phrasen* analysis as the investigation of the combination that concludes the meaning by the minimum unit.

Exercise of analysis

Here, we practice *Phrasets* analysis. Exercises are example scores quoted in this text. Divide each score into *Phrasets*, and insert a line (white line in this figure) at the division, referring to figure 2.

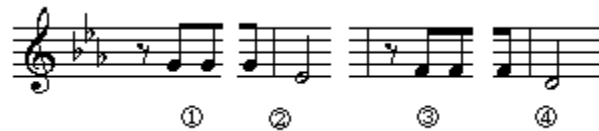
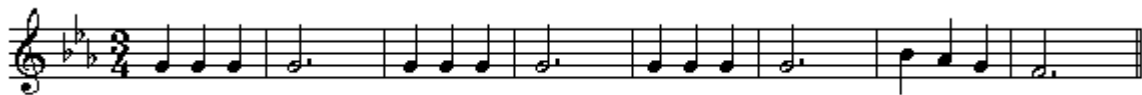


figure 2

exercise 1. L. van Beethoven's Sym. No.5 c-moll III



exercise 2. L. van Beethoven's Sym. No.5 c-moll II



exercise 3. A. Dvořák's Sym. No.9 e-moll Op.95 II



exercise 4. L. van Beethoven's Sym. No.6 Op.68 F-Dur I theme of the beginning



exercise 5. F. Schubert's Moments musicaux No.3 D.780



exercise 6. J. Pachelbel's Kanon

exercise 7. L. van Beethoven's Sym. No.9 d-moll IV

"Freude, Schöner Götterfunken,"
from Symphony No.9 d moll 4th mov. op.125

F.Schiller
Lvan Beethoven

1 2 3 4
Freu-de, schö-ner Göt-ter-fun-ken, Toch-ter aus E-ly-si-um,

5 6 7 8
wir be-tre-ten feu-er-trun-ken, Him-mli-sche, dein Hei-lig tum!

9 10 11 12
Dei-ne Zau-ber bin-den wie-der, was die Mo-de streng ge-teilt; al-

13 14 15 16
-le Men-schen wer-den Brü-der, wo dein sanf-ter Flü-gel weilt.

Answer and explanation for the exercise

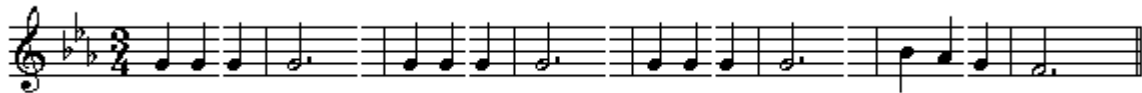
Here, the breaks in *Phraset* are shown by white lines as figure 2.

correct sound source NO. incorrect sound source No.

Both of correct and incorrect sound sources are available
on each click of number in every frame.

Notes are converted into MIDI data. The last note of *Phraset* is played by 80% length of the note and the others are 100%. The division is a little extreme, but you can confirm that the performance changes surprisingly even with such difference.

exercise 1. L. van Beethoven's Sym. No.5 c-moll III



①

②

③

correct [sound source 2a](#) incorrect [sound source 2-1](#)

Explanation

When G is divided into four, each note becomes to have a new meaning.

That is, the first note is the beginning, and there is a directing force to the next note or a few notes ahead in order to predict what will happen hereafter. The second note receives it and enhances the force to the next. The third note has a more force toward the last note.

Even if the four notes are grouped together ①+②, it is not wrong. However, setting the minimum internal unit to two makes the meaning of dividing it into four appear.

In particular, to show the element of ③ adds two meanings. One is of repeating the same sound shape with the same pitch three times up to that point. Another is of transition to new F by letting the same sound be heard once more.

There is a big phrase of G-G-G-F motif in the whole score. In order to show it clearly, we have to divide like above.

exercise 2. L. van Beethoven's Sym. No. 5 c-moll II



①

②

③

④

⑤

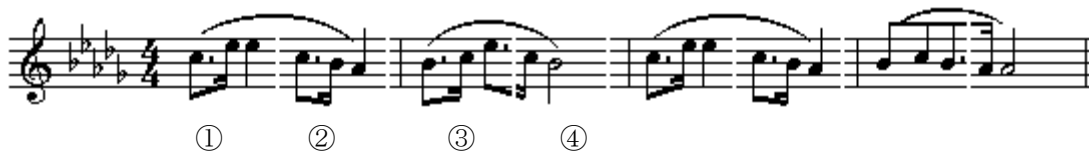
⑥

correct [sound source 6a](#) incorrect [sound source 6-1](#)

Explanation

It is possible to divide ① between Es and As, and so the connection of As-C can be considered. However, that would make Es isolated. By combining them as one, Es can make a jump and show a strong force toward C. I think that the rhythm of As-C is set quickly in order to increase the force of broken chord of EsAsC. We can see the contrast between the smooth descent and the descent jump in ② and ③, and the reaching to F becomes clearer. When ④, ⑤ and ⑥ are combined into one, we can see that B-Des-B-G-E-C is consists of the only large longer notes. However, the meaning is clearer when ⑤ is isolated, because the end of ⑥ is closed with broken chord EGC.

exercise 3. A. Dvořák's Sym. No.9 e-moll Op.95 II



correct [sound source 8a](#) incorrect [sound source 8-1](#)

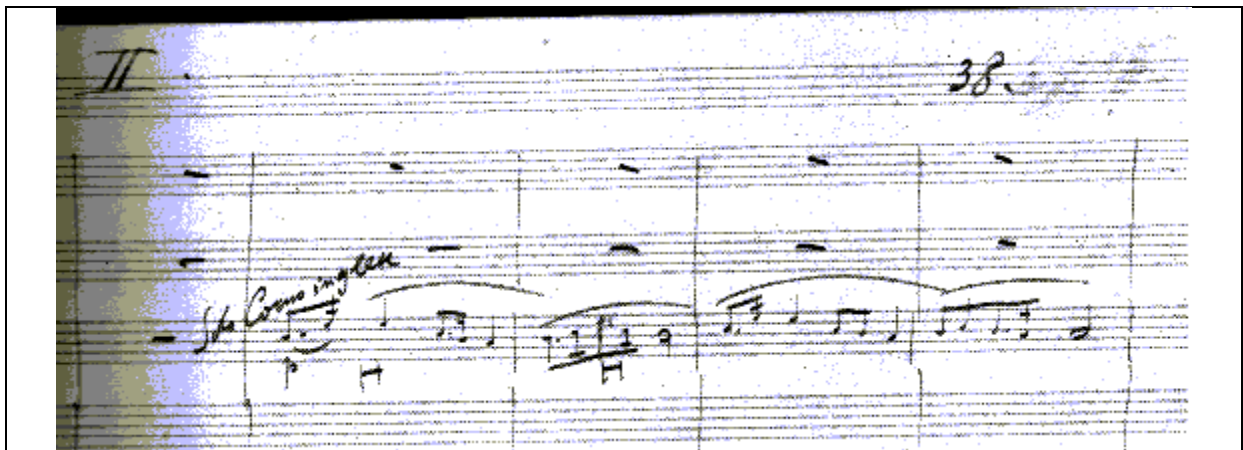
Explanation

There may be no problem with ① and ②. However, 16th note belongs to quarter note anyway. So, when it is divided there, the dotted 8th note becomes isolated and the force to the 4th note weakens. The part of ③ can be ③+④, however, the meaning that it is a variation of bar 1 should not be broken.

As these, when we divide by *Phraset*, the sense of pitch and its sound change due to the acoustic cause. I mention about this afterwards.

The slurs written on this score also need explanation.

I verify this part in the manuscript. (cf. reference materials 1 and 2 ¹⁴)



reference material 1; manuscript of A. Dvořák's Sym. No.9 e-moll Op.95 II
the beginning melody p.38

The third beat in bar 3 of the melody is 8th note. By the way, it is dotted 8th note in the reproduction part. This is where to be considered whether we have to correct the general score.

Pay attention to how the slur is written.

In the beginning, a slur starts to be written on the first beat, just like bowing. But the rest is just to emphasize smoothness. That is recognized by this manuscript.

In this era (1893), it is clear that slur is also used to direct smooth phrase. Though, the composer himself seems to still have a strong consciousness for bowing.

Looking at the last measure of reference material 2 below, this kind of consciousness clearly appears.



reference material 2; manuscript of A. Dvořák's Sym. No.9 e-moll Op.95 II coda melody p.52

This is the part of the same phrase by the strings in the final part of the 2nd movement. The last two bars are performed by soli of Vn., Va. and Vc. The description of the slur in this strings part is more accurate and firmer than the previous slur of English Horn.

There are traces of rewriting in this last bar. Finally, a slur is written over the entire measure. However, we can see the trace that a slur was written once as bowing according to *Phrasen* as mentioned above.

exercise 4. L. van Beethoven's Sym. No.6 Op.68 F-Dur I theme of the beginning



correct [sound source 10a](#) incorrect [sound source 10-1](#)

Explanation

It may not be a problem as ①+②. However, it is more likely that the beginning three notes A-B-D are played one passage. So, the first note C in bar 2 is made overweight and may become a new element from that note. Beethoven seems to be concerned about that and write bowing by slur. Then, all of this theme is played by very convincing bowing, and the phrase flows smoothly.

exercise 6. J. Pachelbel's Kanon

The image displays four systems of musical notation for exercise 6, J. Pachelbel's Canon. Each system consists of a grand staff with a treble clef and a bass clef. The music is in 4/4 time and B-flat major. The first system contains measures 1-8, the second 9-16, the third 17-24, and the fourth 25-32. Circled numbers 1 through 32 are placed below the notes in the treble clef staff of each system, indicating specific points of interest for analysis.

correct [sound source 16a](#) incorrect [sound source 16-1](#)

Explanation

Analyzing this phrase as an element is the same as in exercise 5, Schubert's "Moments musicaux", bar 7.

The first C is omitted, because this is the last note of the previous element, that is the reaching note of the former *Phraset*.

The elements of the ascending scale starting from C in ③ may be divided by every four notes. There is a turn G-A-B-A on reaching note A. Schleifer C-D-E-F (the last formation of example 14) rises vigorously from C that follows A. These may be combined as one ③+④, and so the force can be expressed well.

There are similar points in ⑦ and ⑧. ⑧ goes toward B. There is not much force, because harmonic tones are A and C there and the note just before the reaching note is a harmonic note. So, these cannot be taken as one.

Element ⑮ starts from D. You may want to begin from C, but so, it becomes like "too much" at reaching note A. One note is too much. When you divide the elements by the scale from C to C, the next first A will be isolated. After all it doesn't make sense inconsistent. Disappointingly, there are many such performances.

⑲ and ⑳ in bar 3 are also the same elements. Eight notes are not combined as one ⑲ + ⑳, because the phrase of ascending and descending loses its force toward the end. It's going to lose the meaning.

At the end of bar 4, two 16th notes are auf tact. Then cadence stands out and becomes suitable as a phrase ending.

Not only the main melody but also the accompaniment phrase needs *Phrasnet* analysis like this, though I haven't mentioned on it. It's not easy to understand, because it doesn't sound melodious. But rather, it is more musically important.

exercise 7. L. van Beethoven's Sym. No.9 d-moll IV

"Freude, Schöner Götterfunken,"
from Symphony No.9 d moll 4th mov. op.125

F.Schiller
Lvan Beethoven

1 2 3 4
Freu - de, schö - ner Göt - ter - fun - ken, Toch - ter aus E - ly - si - um,

5 6 7 8
wir be - tre - ten feu - er - trun - ken, Him - mli - sche, dein Hei - lig tum!

9 10 11 12
Dei - ne Zau - ber bin - den wie - der, was die Mo - de streng ge - teilt; al -

13 14 15 16
- le Men - schen wer - den Brü - der, wo dein sanf - ter Flü - gel weilt.

correct [sound source dai9a](#) incorrect [sound source dai9-1](#)

Explanation

This phrase is well known. It's very simple, but hence it is handled easily.

Therefore, it is easy to neglect detailed consideration. This answer should be convincing from the answer and explanation. It is necessary to recognize the difference.

I explain it in detail in the following *Phrasnet analysis example and verification*.

Phrasets analysis example and verification

Analysis example 1

1-1 Phrasets analysis

The first phrase to be taken up as a subject of *Phrasets* analysis example and verification is L. van Beethoven's Sym. No. 9 d-moll Op. 125 IV bars 241-256. That is, melody of "Freude, schöner Götterfunken", same as exercise 7.

The score of exercise 7 is shown again in example 15.

"Freude, Schöner Götterfunken,"
from Symphony No.9 d moll 4th mov. op.125

F.Schiller
Lvan Beethoven

1 2 3 4
Freu- de, schö- ner Göt- ter- fun- ken, Toch- ter aus E - ly - si - um,

5 6 7 8
wir be - tre - ten feu - er - trun - ken, Him - mli - sche, dein Hei - lig tum!

9 10 11 12
Dei - ne Zau - ber bin - den wie - der, was die Mo - de streng ge - teilt; al -

13 14 15 16
- le Men - schen wer - den Brü - der, wo dein sanf - ter Flü - gel weilt.

example 15

I select this as *Phrasets* analysis example, because complex and meaningful elements are included unexpectedly, though this phrase is very simple and its *Phrasets* analysis seems easy. The reason why it seems easy is to make mistakes as to divide *Phrasets* by bar unit. I mentioned in **C. Slur, staccato, bar line, etc.** to pay attention.

The score divided by correct *Phrasets* is shown again in example 16 below.

"Freude, Schöner Götterfunken,"
from Symphony No.9 d moll 4th mov. op.125

F.Schiller
Lvan Beethoven

example 16; correct *Phrasets* analysis
correct [sound source dai9a](#) incorrect [sound source dai9-1](#)

Note 1) Both of correct and incorrect sound sources are available. Notes are converted into MIDI data. The last tone of *Phrasets* is played 80% length of the note and the others are 100%. The division is a little extreme, but you can confirm that the performance changes surprisingly even with such difference. Click each sound source and check it.

Note 2) This example is a rewrite of phrase sung on a baritone solo at the beginning of "An die Freude, Ode to Joy" one octave high. The bar numbers on the score are specific to this score.

Note 3) There is no other signs in the manuscript for this part. In some cases, cresc. is written like other orchestra part in bar 12 (252), but it is not written in this part originally. In the latest research version, angenehmen is written at the beginning of this score, and the decrescendo sign > in bar 14 is just an accent sign > . (BEETHOVEN SYMPHONY NO.9 IN D MOLL Op. 125 BÄRENREITER 1999¹⁵⁾) This > has a problem.

Note 4) This phrase is played on Vc. (violoncello) and Db. (contrabass) before being sung on a baritone solo. There are two differences between them. One is that the same two quarter notes of the first and the second beat are written as one half note in bars 1, 3, 5, 7, 9 and 15 of example 16. Another is that slur is written almost every measure. (cf. example 17 and 18)

There will be some disagreement with this *Phrasets* analysis. Because there is division in the middle of a word in the lyrics sometimes. And because some people may think that there is a contradiction with the slurs for Vc. and Db.

I think that the part that seems to be a contradiction is the part where Beethoven's intention can be captured.

To find out the intention, its *Phrasets* analysis is necessary, because the arrangement of the tones of this phrase would be the original idea. I would solve such doubt with verification by the sound spectrogram of the actual performance.

1-2 Explanation for *Phrasets* analysis of example 16

Bar 1

The first two Fis can be thought of as one tone. When there are multiple syllables of words, it is customary to assign one note to one vowel basically. Therefore, one note is for Frou- and another note is for -de. Of course, it seems that all four notes in this measure can be combined as one, because all notes in this measure are auf-tact (anacrusis) of the phrase from bar 2. (Similar to that bars 541-542 are the introduction from the rehearsal letter M in bar 543 of usual score.) However, I want to separate A on the fourth beat from Fis-Fis-G on the previous three beats, because A on the first beat of bar 2 comes out in advance to the next bar.

We can understand by actually singing that the first A (Göt-ter-fun-ken,) of bar 2 becomes to have a sharper accent than the weight of the phrase and the pronunciation of Göt-ter becomes jammed when bar 1 is combined as one. If Beethoven wants it, he would write A as an eighth note and an eighth rest on the first beat.

It seems like it would be good to divide *Phrasets* by the word break, but then the first Freu-de, would be isolated. There may be an opinion that it is okay because there is comma. However, that is too grammatical and too weakly related to subsequent words. If Beethoven thinks that way, he would leave a clearer message there. And already before that, "Freude!" is sung with a male chorus twice highly, so three times is too much. The third time should be a sentence.

By proceeding with Fis-Fis-G, the intention to move forward appears. Prepare a more positive A and connect it to A in bar 2.

With the latter half of Schö-ner becoming the next *Phrasets*, the adjective works well on the next Göt-ter-fun-ken.

Bar 2

It is a descending scale *Phrasets* from the first A that receives A of the fourth beat of bar 1 and has a weight.

Also, the problem is whether it is up to the third or fourth beat. If up to the fourth beat, then bar 3 becomes the same as bar 1. The reaching note of the scale that follows A-G-Fis-E is D on the first beat of bar 3, anyway.

However, if up to the first beat of bar 3 is made into one *Phrasets* in this way, the relationship with the next phrase becomes bad. Therefore, it is better to regard E on the fourth beat and D of bar 3 as one *Phrasets*. Then, the consistency of intonation is created that the fourth beat is an auf-tact same as bar 1.

Bars 3-4

D is the first beat as the last note of the descending *Phrasets* of bar 2. And another D of the second beat is the beginning of an ascending *Phrasets*. *Phrasets* from here is the ascending scale.

Now, it can be taken as one turn (inverted from the second note of the third *Phrasets* in example 1) that includes all the notes in bar 4. That would be correct. But it is better to take the next *Phrasets* from the fourth beat Fis. Because Beethoven has a special emotion for the word E-ly-si-um. (The evidence is that *sf* is written and emphasized in the chorus part (bar 549) that comes out later.) Also because it consists the intonation anyway.

Bars 5-8

This is the same as bars 1-4. The difference is that it is not a turn from the second beat of bar 7 to bar 8. It is a descending scale of Fis-E-D from the fourth beat of bar 7. It is the

same as the intonation of the words dein Hei-lig tum! If you think it is a turn of D-E-Fis-E from the second beat of bar 7, you have to make *Phraset* with only the eighth note and the half note of D, and it doesn't become the intonation of the deep words.

Be careful not to make *Phraset* with only the same sound as possible, because it is too small as *Phraset* of melody and it is hard to make meaning by only one sound. That is the difference from "grouping of rhythm"¹⁾²⁾³⁾. If you dare to make as one, it would not be a mistake to take as a descending *Phraset* of E-D. It means a progress from a turn of D-E-Fis-E to D as an emphasis on E. However, it is still a problem as an intonation of words. *Phraset* of D-E-Fis-E in bars 9-11 is similar.

The reason for making a new *Phraset* from the fourth beat of bar 7 is the same as from the fourth beat of bar 3. Dein in the lyrics is an article of Heilig. Therefore, it is necessary to note that it should be regarded as one word.

Bars 9-11

These three measures are a series of the same *Phraset*. *Phraset* of the beginning with E-E-Fis is the same as bar 1. *Phraset* mentioned at the end of the explanation of bars 5-8 may be used. However, to make the ascending mordent of the eighth note (ascending pattern of the simplest turn going up or down) into a single *Phraset* is better. Then, it can be an underplot that develops into the phrase of Fis-G-A from the second beat of bar 13.

Bar 12

The first note is the last one of *Phraset* from the fourth beat of bar 11. I once try to make one *Phraset* with four notes including the second and the third beats. However, I take another *Phraset* with only the second and the third beats, because deceptive cadence is clarified with them.

The fourth beat is probably an emphasizing syncopation (jumps out actively) by rhythm. That is reasonable to the meaning of words Al-le Men-schen. In order to avoid the unusual impression of this part, the intonation that starts from the fourth beat has been repeated. If there is no repetition, the emphasis on this part will be excessive, and the original meaning of the lyrics will lose its deep nuance.

Bar 13

The same as bar 1.

Bar 14

It's basically the same as bar 2, but by setting it up to G on the fourth beat, it takes the form of a turn instead of a descending *Phraset*.

There may be a description of \succ not to make new *Phraset* with two eighth notes on the fourth beat. Without this, it would be G-E-D *Phraset* on the fourth beat due to the consistency of the intonation. Therefore, \succ is more appropriate than the changed \succ in the latest version¹⁵⁾ from this point of view. Accent \succ is not often seen in the other part. He uses *sf* for accent. Manuscript shows so, too.

Bars 15-16

The same as bars 7-8. However, bars 9-16 are repeated once again by the chorus after this originally. So that, in the accompaniment part, eighth notes of D-E-Fis for the passage of the transition to the next are inserted from the latter half of the third beat of bar 16. Also, a new phrase starts from the fourth beat again.

Meaning of this *Phraset* analysis

The above is the explanation of this melody analyzed by *Phraset*. However, in the actual

performance, the breaks in this *Phrasets* are not clearly played. It is similar to theatrical lines or recitation. If sentence is analyzed by grammar and is read like an explanation, it is not good. Beyond analysis, read the author's intention further, and add reader's intonation that makes it meaningful as the expression. Then it may be said to be good lines and recitation for the first time.

As I quoted composer Hiroshi Hoshina's words³⁾ in the section of **Preface**, composer writes to appeal to consciousness of a player as a reader. This point is important.

For that reason, player needs to think more deeply. In other words, I think that the composer's message expresses not only one's direct intention but also one's experience and emotion in deep psychology. It clearly exists there, even though if you ask the composer oneself, it may not be answered because of deep psychology.

And player has a duty to explore the score deeply and play.

Baritone soloist will not sing with such *Phrasets* at first. Because there is lyrics, he will follow the intonation of lyric. But as he sings several times, he becomes to sing as the new Beethoven's intended nuance. Because the intonation of the lyrics (not the words) and the expressions of each sound coming from this *Phrasets* are combined.

It's different from singing simply by following the word breaks in the lyrics. It can be said that the depth of thought of the player is clearly shown there. Furthermore, the place where the ability of the player whose problem is solved can be clearly seen is the part of Vc. and Db. which seemed to be a contradiction.

The performance of that part will be verified later by sound spectrogram analysis.

"Freude, Schöner Götterfunken,"
from Symphony No.9 d moll 4th mov. op.125

F.Schiller
Lvan Beethoven

example 17-1; articulated bars 164-187

"Freude, Schöner Götterfunken,"
from Symphony No.9 d moll 4th mov. op.125

F.Schiller
Lvan Beethoven

example 17-2; articulated bars 92-107

Example 17-1 is Tutti part from bar 164 with a symbol such as a slur written on the wind instrument part. Example 17-2 is the part of Vc. and Db.

1-3 Comparison between example 16 and examples 17-1, 17-2

Note) Of course, the lyrics are not attached to the parts written in example 17-1 and 17-2. It was attached by the author for convenience of comparison.

Players simply look at the notes and make decisions from the melody line. That is, they read *Phrasen* as shown in example 16.

Let us take a look at example 17-2 first.

In the case that this slur is taken as bowing. If we start with down and play in sequence according to the slur, the center of gravity of facial nuance comes at the beginning of each bar (weight ↓ comes).

Bar 5 starts with up. It has a certain reason. The same melody is repeated, but the facial expression changes if the bow stroke is changed. When it starts with up, the sound at the beginning of bars 6 and 8 will have a stronger weight. And so, the meaning of *sf* in the part of the chorus later is felt.

Furthermore, down makes accent of syncopation of tie over bars 12-13. It ends with up, so it's good for dealing with the next. Bowing fits this *Phrasen* perfectly. As mentioned in the problem of 2. C., if bar line is a break in *Phrasen*, it does not become such a meaningful performance. When you come into contact with this score for the first time, you need to be careful. Because it is a description that is likely to be read incorrectly like this.

Let us take a look at example 17-1 next.

If this description is taken as bowing, it doesn't work well. That should be the case, because this description is written on wind instruments. Portato has the meaning of *espressivo*. Never think of it as 3/4 length. Description in a musical grammar is too mechanical.

In the latter half of bar 2, there seems to be an intention to connect to the first note of bar 3 without solving.

In the case of bar 7, the driving force to go further can be strongly read. The staccato of bar 10 tells us that it's aufact to the next.

Note) Adding staccato to the note of anacrusis is often done, especially in Vienna. In a sense, it can be called the Wien style, and some conductors like Sergiu Celibidache dislike it.

Staccato of bar 12 means marcato. By showing a clear end, the next syncopation is prepared. Here, the breaks in bars 2, 6, 10, 14 and the first half of bar 11 are places in subconscious, but I don't want performance to be too grammatical.

As mentioned above, this *Phrasets* analysis seems to be a deep reading, but it seems have been clearly in Beethoven's consciousness. I think it is the musician's insight to read such places logically.

1-4 Verification

Verification 1

Furthermore, I would like to verify the meaning of this *Phrasets* from a harmonic point of view.

This is because the problem is how to create a good sound in order to express this melody better in an actual play. In particular, the part where this melody appears for the first time is only the unison of Vc. and Db. And it is also important that there is no so-called basso continuo of baroque that determines the harmony.

This melody begins with Fis, the third tone in D major scale. Tonic D finally appears in bar 3. Besides, it is just one beat and immediately goes to E, the second tone in D major scale, Dominant fifth tone, in the end of this phrase. The meaning of this tune cannot be solved only by I₆-V-I-V in the harmony analysis. Because this melody clearly sounds like it makes Tonic in D major stand out. That is, D in bar 3 has a large specific weight. In order to show that sound, Dominant A is made to stand out with two notes accompanied by anacrusis, and the intention to proceed to D is indicated. For that purpose, two quarter notes A are in bars 1-2. And E is just before that to give more force.

If new *Phrasets* starts from Dominant A in bar 2, it becomes like an explanation of the harmony progression. However, the transition from the fifth tone of Tonic to the first tone of Dominant succeeds in alleviating it. No one thinks it's in F sharp minor, if play starts from Fis. However, it becomes very low pitch of A in just intonation if Fis is taken as the root note of iii chord and A is taken as the third note. And so, Dominant function is lost. This is very important thing.

If a play of this part sounds as a minor key, it means that it is regarded like this. It's impossible in the case *Phrasets* is correct. Even if you think it's a chord of Tonic, you feel the development of chords in bars 1-2 by thinking the bar line as a break. And the effect of these two A as Dominant is weakened.

The same applies to the part of bars 3-4. Fis is repeated. Thereby the third note of Tonic that guides to Dominant of deceptive cadence is emphasized. Also, these two places are similar, but A in bar 1 has a positive meaning with anticipation, and Fis in bar 4 has a different expression by dragging Tonic with suspension.

When thinking about chords during a play, it is important to think about how it progresses rather than what harmony it is now. Not surprisingly, that has not been done unexpectedly.

Considering the successful transition of this harmony connection, the transition to the next becomes clear by re-sounding the connection part of the harmony, that is, the last note in the same harmony. If you divide it with *Phraset*, it becomes clearer.

Bars 9-11 just only repeat Dominant. Among them, Tonic D is seen for a moment at the end of bars 9-10. Furthermore, even at the beginning of bar 12, the resolution from the previous E is there and it immediately return to Dominant again. It should be such *Phraset* for its effect. If it is measure unit, it will be resolved by cadence of V-I within each measure. And it gives the impression of Tonic rather than Dominant element. In particular, by completing Dominant with E and A of second and third beats of bar 12, and by showing the resolution to the shorter Tonic with E and D before that, the intention to move to this Dominant Tonic is felt strongly. For that purpose, such *Phraset* should be recognized. And Fis sounds like returning suddenly to the part of the same composition as the beginning. The rest is the same as bars 5-8.

Even though it is a very simple development of harmony, if you pay attention to the meaning of each sound contained in it, you can capture the depth of feelings.

Verification 2

Let us compare the two actual performances by sound spectrogram analysis and try to verify them.

This analysis method uses sound spectrogram introduced in the author's paper⁴⁾ to represent the existing recorded performance visually. It is an attempt to add an objective proof to the subjective sense of hearing.

Two sound sources are used for this analysis.

Sound source 1

Performance of Bayreuth Festival Orchestra conducted by Wilhelm Furtwängler¹⁶⁾.

In this CD, the details are emphasized by making it pseudo-stereo by a method called bright crank by Electrola. (cf. the CD booklet¹⁶⁾) The evaluation of the performance is the most well-established performance, as Mr. Koho Uno states in his book "Furtwängler's Masterpiece"¹⁷⁾, "It can be said that it is the most important record in talking about Furtwängler."

Unfortunately, the author also states in it, "You will never know the true value of this bright crank." However, this sound source is adopted for this analysis, because the details can be sampled more clearly.

Sound source 2

Performance of Japanese orchestra conducted by Japanese conductor S.

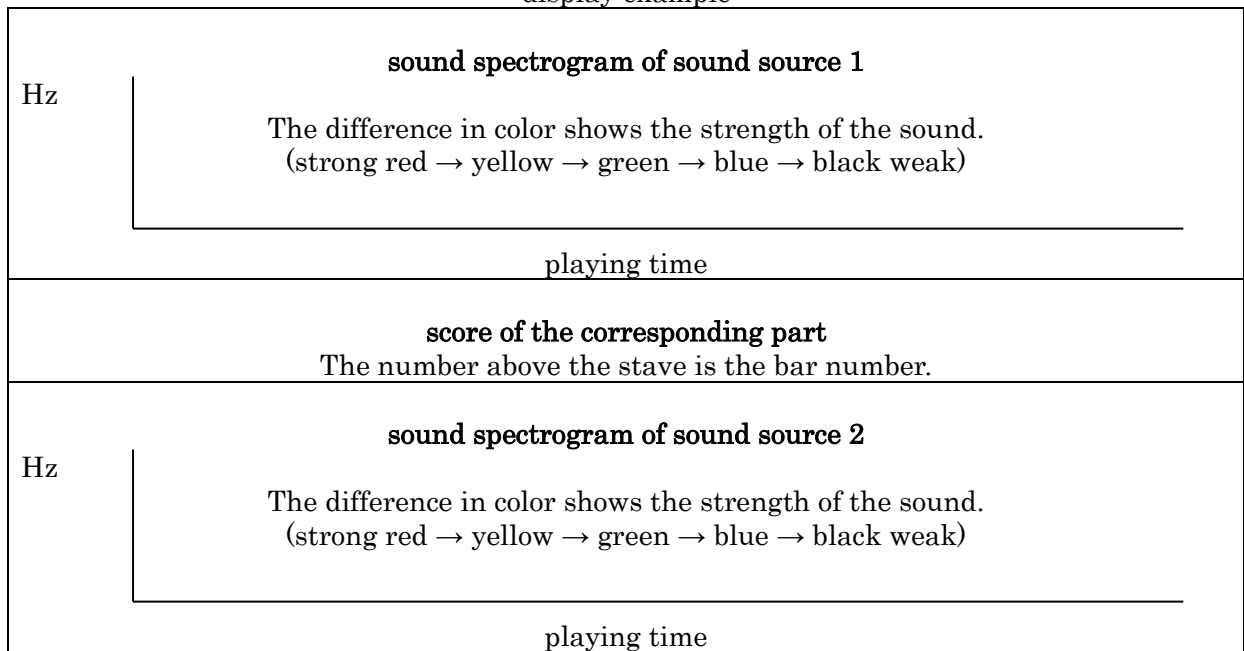
This sound source is taken as a bad example due to the incorrect *Phraset*. Therefore, please allow anonymity for the performers. However, this conductor is very popular as a talent in Japan. He is well known for so-called "flashy" performances and passionate conducting.

The orchestra is a combination of several organizations and composed of each top member. And they have performed continuously many years. So, they are not low-level.

Results of sound spectrogram

Sound spectrograms of sound sources 1 and 2 are displayed separately for each of four measures, and the score of the corresponding part is sandwiched between the two figures. For bars 3, 7, and 15, the quarter note on the third beat is included in the later *Phrasen*, because the first and the second beats are half notes. (Different from example 16.)

display example



It is difficult to see each note correspondingly in a reliable manner.

But, the difference of intonation can be seen quite clearly by comparing the overall flow. As a whole, it is a very soft sound part and can be clearly distinguished at an actual hall.

However, in recording, you have to listen very carefully. Though, the intonation is clearly shown in this sound spectrogram. Rather than about loud sound part, the intonation of the performance can be captured clearly.

The parts to be compared are numbered and verified.

The position of a bar line is indicated by an arrow.

Bars 1-4

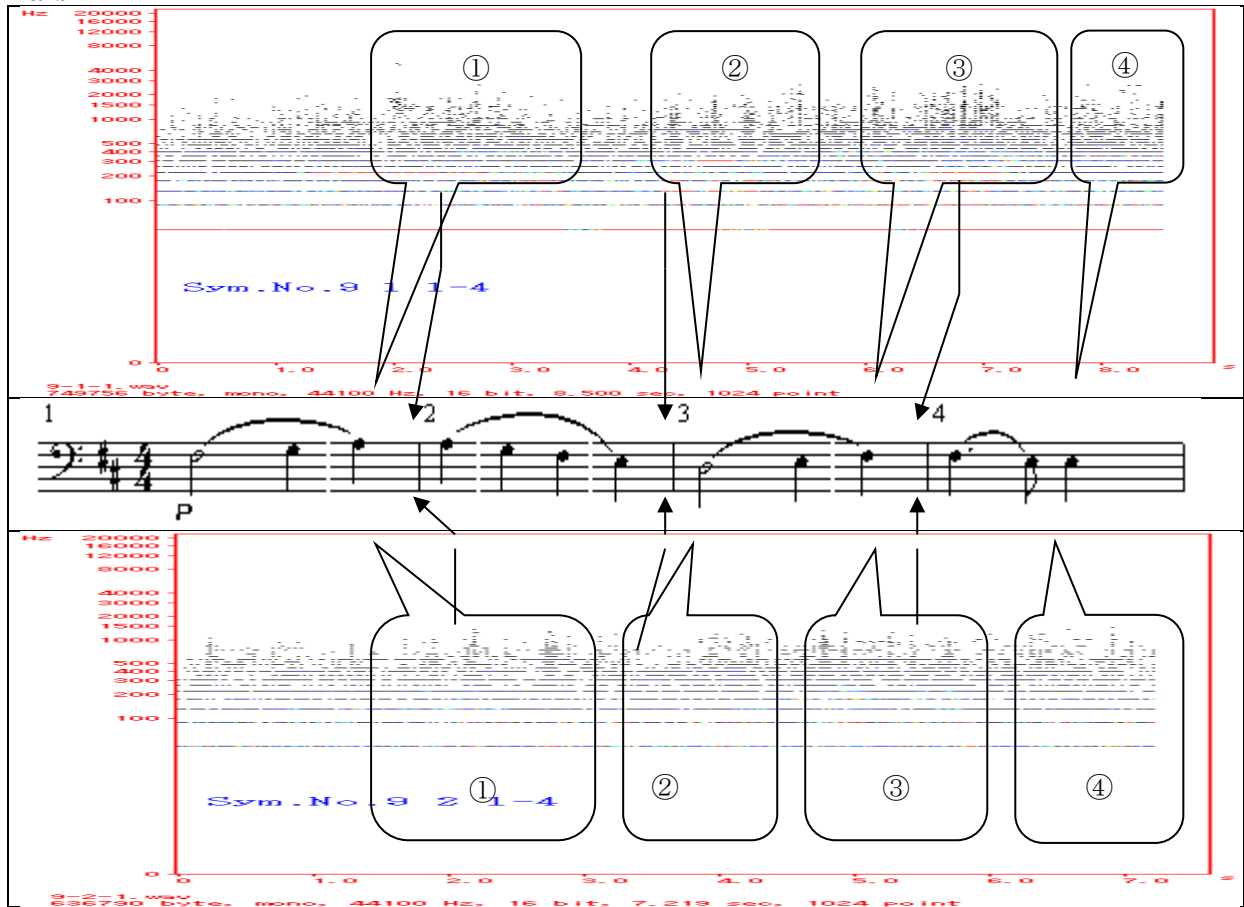


figure 5, sound spectrogram of bars 1-4

In the sound spectrogram in ①, the fourth beat of bar 1 is about one beat after the score, but you can see it at the first peak. Let us focus on the expression of that sound.

A of the fourth beat seems to connect to the next in sound source 1, however it seems to end there and make new *Phraset* from A of bar 2 in sound source 2.

Tonic D on the first beat of bar 3 in ② reverbs well and ends in the sound source 1. However, in the sound source 2, the sound is weak and it is trying to connect to the next. Rather, this sound difference is a big problem. That is, as mentioned in the problem of harmony in **Verification 1**, it shows that this Tonic D could not be derived, because the pitch of A at the end of bar 1 became low and Dominant function was lost. As if in F sharp minor, it sounds like "Lah Ti Do, Do Ti Ra Sol, Fah Sol Ra, Rah Sol Sol", and the sixth note D in F sharp minor does not sound.

③ is the clearest part of difference. When you look at the overall intonation in units of 2 measures, sound source 1 shows consciousness at two peaks and sound source 2 has no meaning at the peaks, though the latter half of the phrase can be understood.

Let us pay attention to the part that goes to the next bar in ④. Sound source 1 shows the intention to go further, but sound source 2 does not show it at all. It can be said that the fact that it is deceptive cadence ends only in knowledge.

Bars 5-8

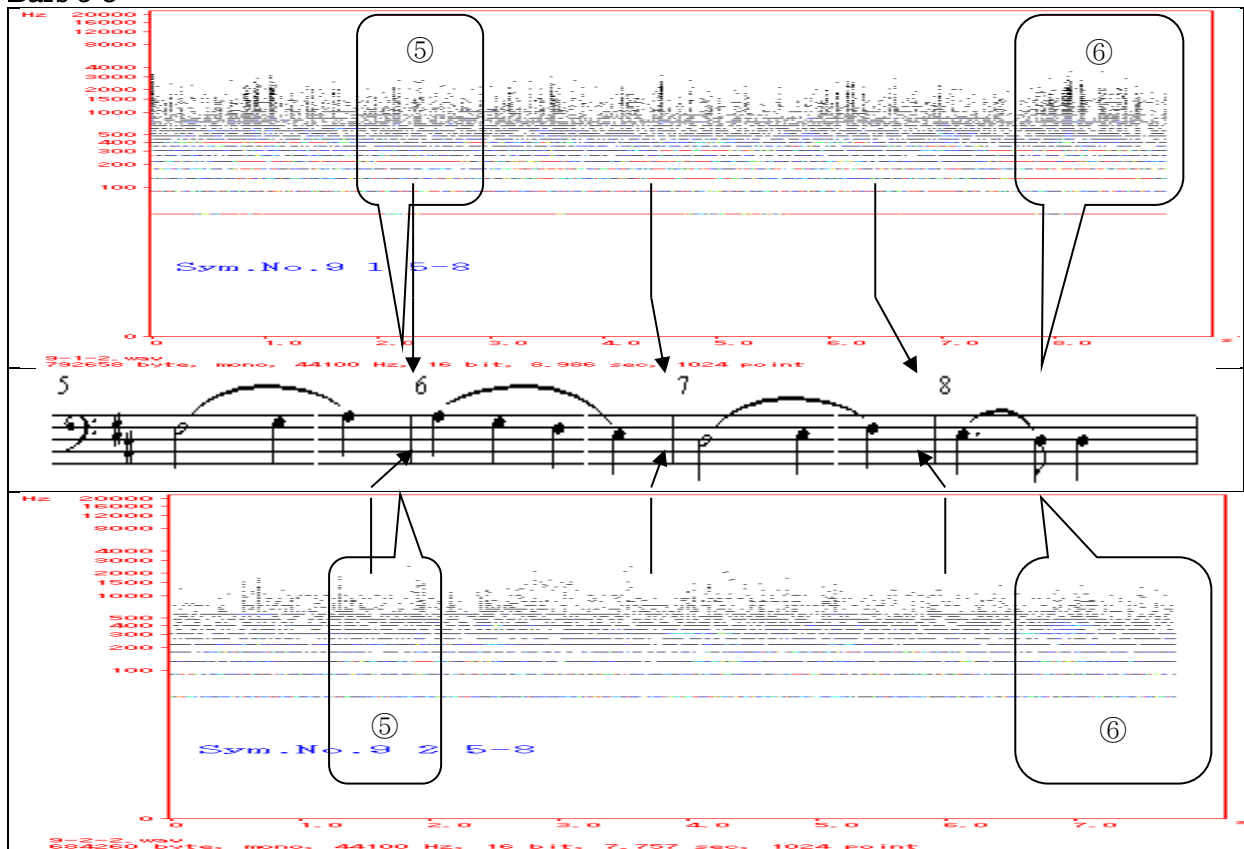


figure 6, sound spectrogram of bars 5-8

There are breaks in both connections between the end of bar 5 and bar 6 in ⑤, but the expressions of the sounds before and after are completely opposite.

Although the cadence to the last Tonic can be seen in both sound sources in ⑥, the difference in the sound is large. I have been educated that the end of phrase mostly calms down gently. But it's a matter of whether it's always good to be like that. And attention is paid to expression such as sound source 1 that shows the intention of a solid ending to connect to the next.

The other parts are the same as bars 1-4, but the intonation of both sound sources has less change. This may be because the expression was suppressed by the reproduce melody, and at the same time, the tension was alleviated by playing with *p* sound at the beginning.

Bars 9-12

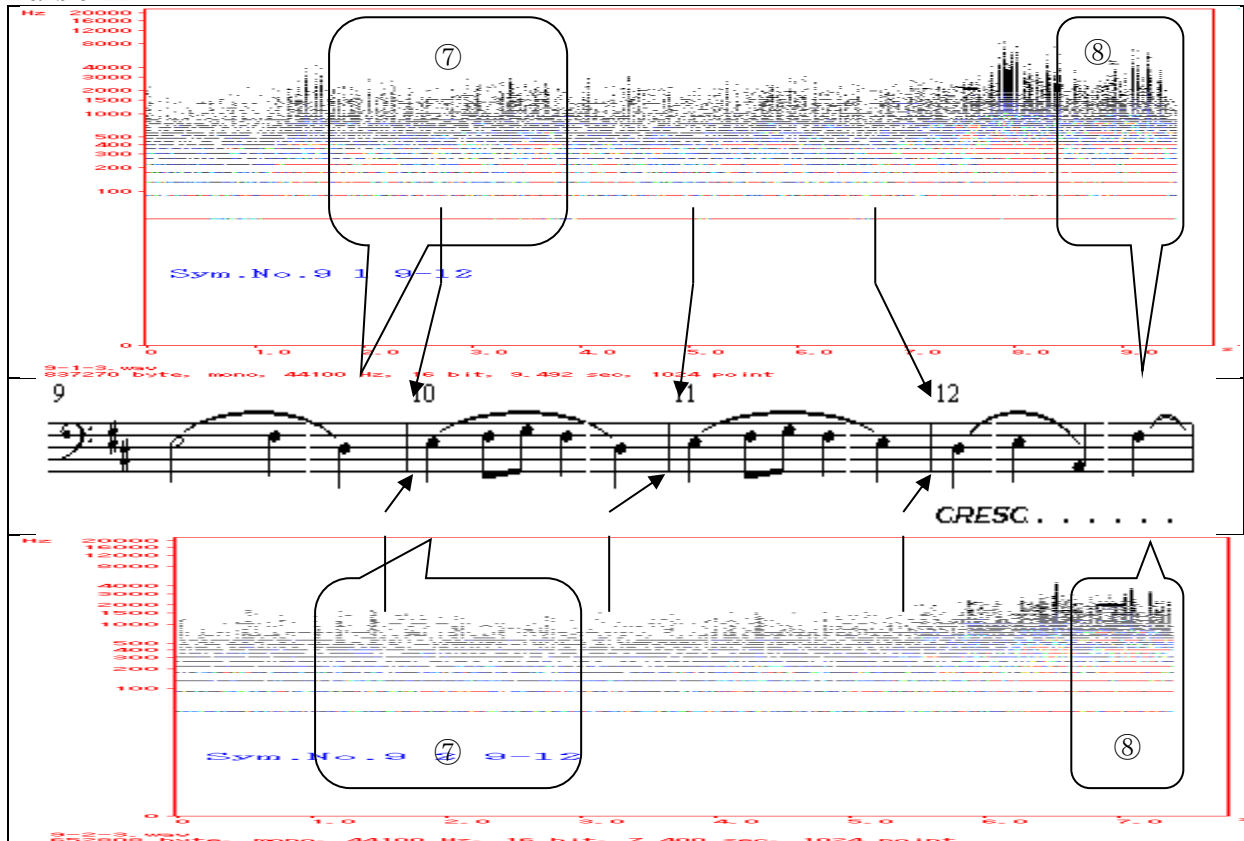


figure 7, sound spectrogram of bars 9-12

The obvious difference here in ⑦ is that the volume of sound source 1 is increased from the fourth beat of bar 9. However, when you actually listen to it, it sounds almost the same as before. It is possible that this phenomenon is occurred through modifying by the bright crank method for this sound source. This point seems to leave room for verification. However, by looking at it continuously after this, it does not seem that it was processed so much. And so, it should be Furtwängler's intention. In particular, in the twice repetitions of bars 10 and 11, sound source 1 is modest for the second time, and sound source 2 is slightly larger for the second time.

The effect of *cresc.* (there is a writing in this part¹⁵) on bar 12 of ⑧ is saved from the fourth beat of bar 9 where the effect is aware of at this point till the position it is written. And then *cresc.* is honestly started from the written point in sound source 2. In sound source 1, this part avoids a sudden impression, recognizes the effect of *cresc.* as a whole, makes the second time a little modest and aims for a natural effect. There is a difference between playing what was written as it is and trying to capture its deep intention.

It is the same about two sound sources that the low A is the loudest just before ⑧. But the intonation of it and the relation with the next tone are different. In sound source 1, the phrase ends at A, and the syncopated Fis starts new phrase with a loud sound. However, in sound source 2, the intention of A to connect further to Fis is expressed. Without thinking about making a phrase, it is just connected to the next as described *cresc.*¹⁵.

Bars 13-16

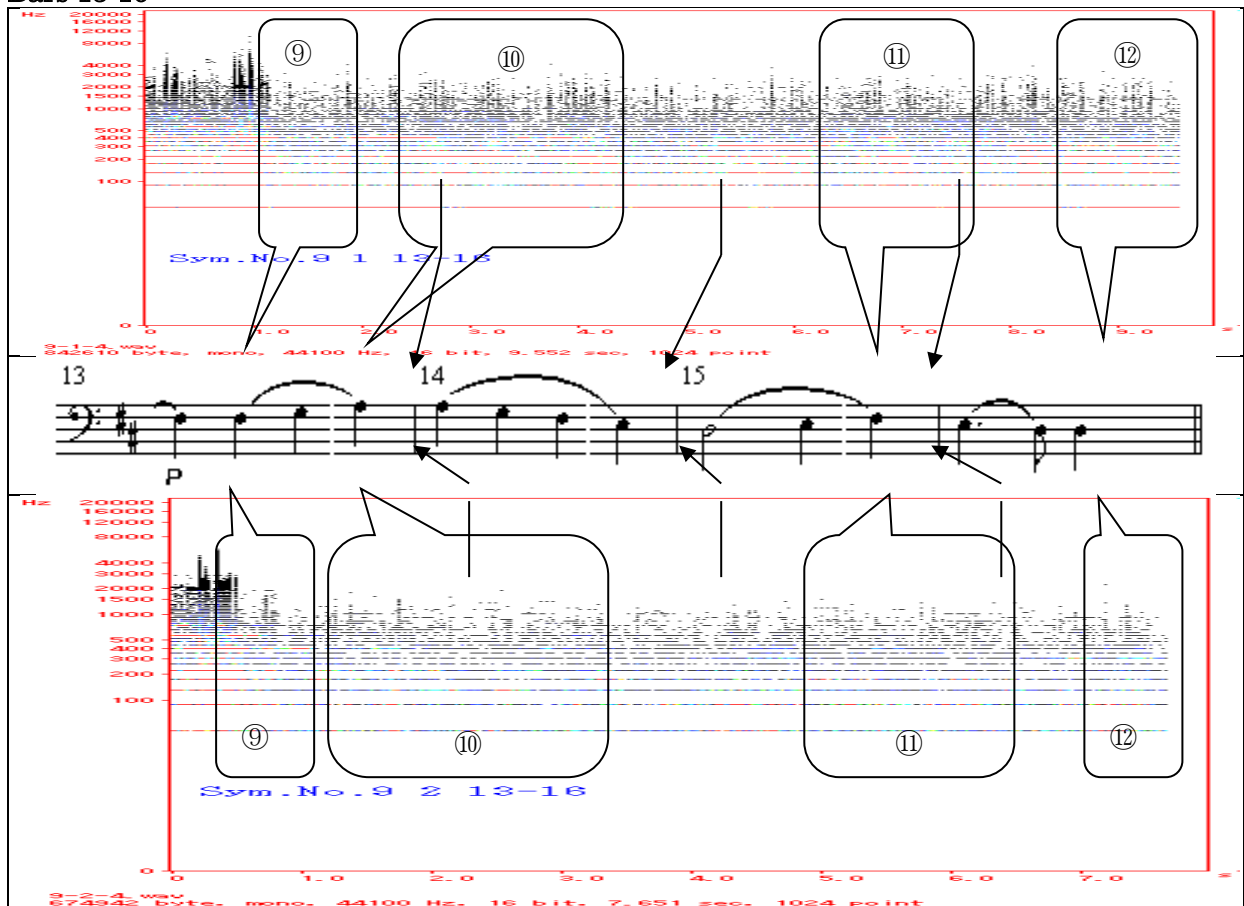


figure 8, sound spectrogram of bars 13-16

The difference in phrasing from bar 12 appears here in ⑨.

Both Fis after a tie is performed as *sub.p* according as per the score. In sound source 1, the connection of phrases can be seen, and rather a clear *sub.p* is there. On the contrary, in sound source 2, *sub.p* does not succeed. Because, without finishing former phrase, a doubt about reaching note occurs, an unfinished end is left and new phrase is tried to start. The phrase is broken.

In ⑩ and ⑪, phrasing of sound source 1 accords to this *Phraset*. But in sound source 2, *Phraset* follows the bar line.

The expression of the last sound in ⑫ is actually a repetition of this latter half of the melody. The connection is seen in sound source 1 and sound source 2 is about to end completely.

1-5 Consideration

I feel the necessity of this *Phraset* analysis. Because performances that we hear bar lines have become more prominent these days. The purpose is to eliminate such childish performances.

Regarding this point, in creating this figure, the location of bar line is specified in the sound spectrogram. It was hard and difficult to understand sound source 1. And I had to decide while dealing with performance and sound spectrogram once more. On the other hand, there was almost no hesitation about sound source 2.

In this figure, the frequency components of sound are shown. The actual sound on the score is about 220Hz at the highest point, and all the higher components are overtones. It's not clear a little, but the bottom of the vertical scale is 0Hz. The first one is 100Hz, and the ones above it are 200Hz and 300Hz. Therefore, the fifth from the bottom of the striped pattern as a component of the sound is the highest one that is actually written.

In the connection to that sound, we can hardly see any breaks in either sound source. However, the intention of each performance can be seen in the striped pattern of overtones. That is, the player does not consider about cutting tone even if there is a bar line unless there is a rest. It means that it will not be cut, because there are no rests in this part. Of course, players start to play the beginning of a new phrase consciously rather than break of a phrase. In other words, you can see new changes there.

The part of bars 13-16, that new change appears the most clearly, is shown in figure 5 again. It is of reduced scale so that we can see the frequency.

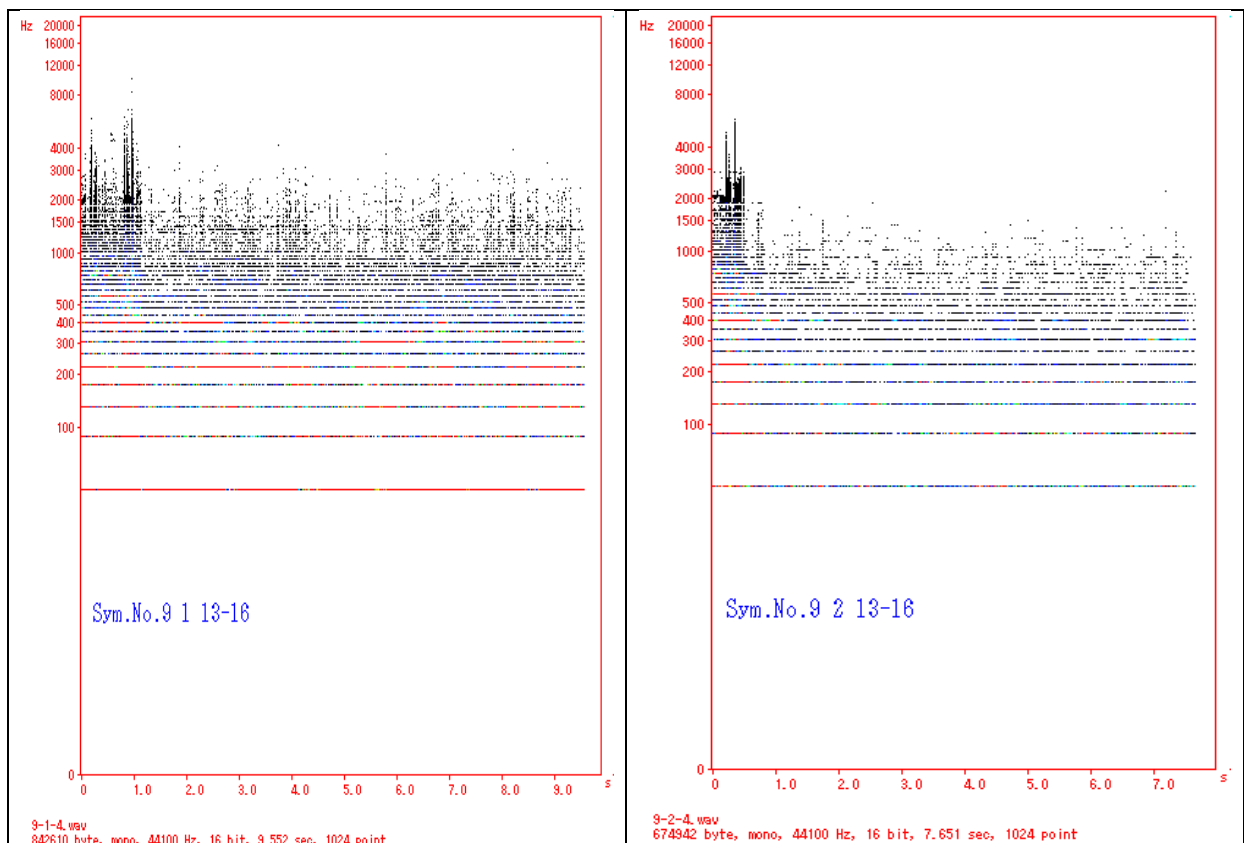


figure 9, sound spectrogram of bars 13-16 (left: sound source 1, right: sound source 2)

There is a difference in volume between these two spectrograms. So, it is necessary to judge by the relative volume difference. However, the changes can be compared clearly.

There is no problem with the last *Phrasets* of bars 15-16 in the second half in both cases. However, the difference in the details of *sub.p* which becomes *p* suddenly in bars 13-14 is clear as you see. It can be confirmed also by Schiller's lyrics that this part of bars 13-14 is the most important part of this theme.

The word werden in "Alle Menschen werden Brüder, (All people become brothers)" makes meaning the most. And the part corresponding to it has the most important meaning of this music.

It is a low-level performance and far from comment that sings with an accent only on the later "Brüder". Even if the note corresponds with "Brüder" has *sf*, the meaning of the word is ignored. (Disappointingly, this sound source 2 also plays like that.) However, the value of these performances is determined by this fact that the difference in intonation of performance of such an important part is recognized so.

Of course, it is not only the judgment about the outline, but rather, how good the sound is in that part is the origin of expression of performance and the purpose of performance. Therefore, it should be noted from this sound spectrogram as well.

It goes without saying that there is too much difference in sound even if the difference in volume is taken into consideration. Even in comparison with the stronger sound part connected by a tie, you can see how the sound of the important part in the latter half is treated. Unfortunately, there is a problem with the performance of sound source 2.

If this symphony is performed so infrequently, comparison like this may be serious. However, this is a well-known masterpiece, and there is a clear difference in the ability of the performer to read the score.

1-6 Summary of analysis example 1

If someone doubts about this detailed analysis of note, the person must know nothing about performance. Players do not analyze by words but think about more detailed change by its meaning. They seek logic there, understand composer's intention and perform their intentions of artistic expression. Some players with little ability of basic analysis nor understanding for composer's intention, are praised actually as this sound source 2. It is so disappointing.

I say nothing to audience that evaluates somehow like as "the stream is fine" or "beautiful sound". However, it is indispensable to learn such thinking and analysis methods in order to be able to perform well.

In the end, let us take a look at sound spectrogram throughout in figure 10 once more. It is difficult to compare these two sound spectrograms and judge whether they are good or bad without the above-mentioned *Phrasets* analysis. At most, the difference in the change in intonation can be captured.

Good performance should put the intention into detail and then construct the whole. Such performance tries to describe the logical relation between them. Its insistence inspires the audience empathy and deep emotion.

The intention is clearly recognized in the overall proportions of these two sound spectrograms. If only the notes are traced somehow, the performance ends up with a flow without intention like sound source 2.

It is the same for the audience. The audience judge by the whole impression somehow like seeing this sound spectrogram. However, it is necessary to clarify what it is caused for performers.

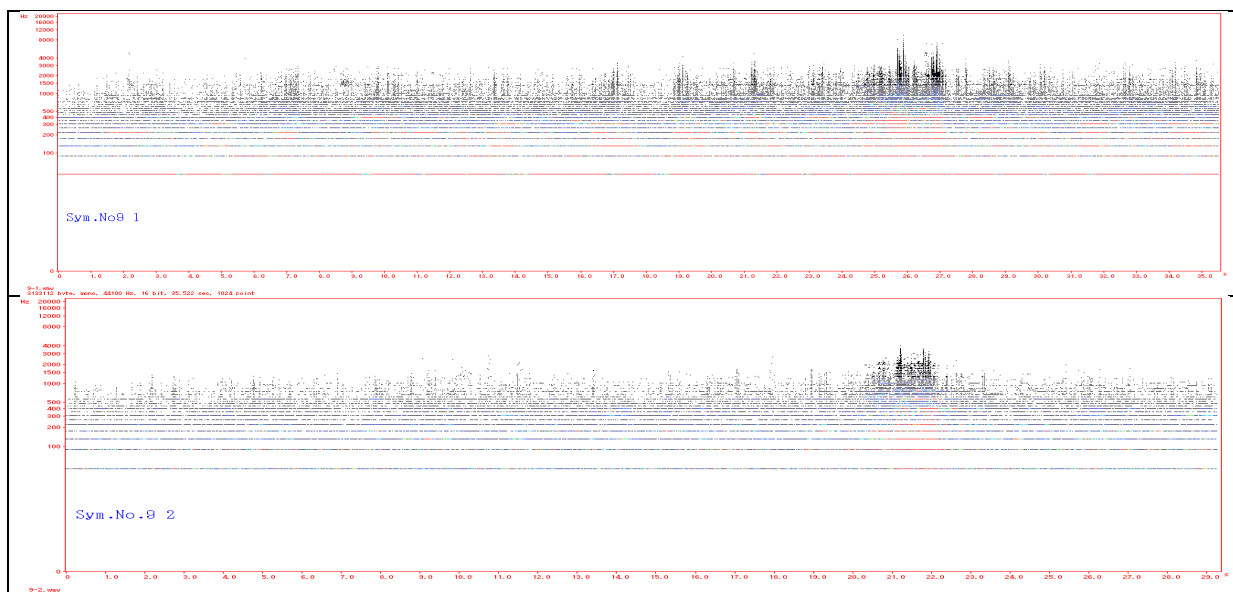


figure 10, sound spectrogram of the whole (top: sound source 1, bottom: sound source 2)

Verification example 1 1-5 Consideration supplement

Relation between *Phraset* and lyrics

This relation of "Freude, Schöner Götterfunken" with *Phraset* analysis is exactly exquisite. I would not be able to conclude *Phraset* analysis without the explanation of this relation. This is the reason as mentioned before. These breaks of *Phraset* are not performed as can be recognized clearly, but the expression of melody is determined by *Phraset* and the structure of the melody comes to have logicity. I explain how the logicity of the melody relates to lyrics.

I show example 12 of *Phraset* analysis.

Basically, one vowel is assigned to one note when a music is composed. One word is joined by " - ", and when some notes are sung in the same vowel, slur is written. In the case of assimilated sound (Göt-ter-, Al-le), a rest is assigned and then such aim is not in this melody part.

Almost all breaks of *Phrasets* are on midstream of a word in the lyrics. However, the part to be emphasized as "Elysium!" or "dein Heinligtum!" accord with *Phraset*. If we recognize *Phraset* as lyrics' words themselves are or if lyrics are reassigned to meet with melody's *Phrasets*, both are felt very commonplace. That is, Beethoven made the depiction stereoscopic and gave it some movement by adding melodic intonation and directions of notes to rhythm of scenic words of F. Schiller's poem.

"Freude, Schöner Götterfunken,"
from Symphony No.9 e moll 4th mov. op.125

F.Schiller
Lvan Beethoven

1 2 3 4
Freu - de, schö - ner Göt - ter - fun - ken, Toch - ter aus E - ly - si - um,

5 6 7 8
wir be - tre - ten feu - er - trun - ken, Him - mli - sche, dein Hei - lig tum!

9 10 11 12
Dei - ne Zau - ber bin - den wie - der, was die Mo - de streng ge - teilt, al -

13 14 15 16
- le Men - schen wer - den Brü - der, wo dein sanf - ter Flü - gel weilt.

example 12; *Phrasets* analysis of "Freude, Schöner Götterfunken"
correct sound source [dai9a](#), incorrect sound source [dai9-1](#)

The word of "schö-ner" is joined from the end of *Phrasets*, at the third beat of bar 1. Then the description of "Göt-ter-fun-ken" is emphasized and impressive intonation as "How beautiful!" is brought. Not only the impressive word of the beginning of the poem is emphasized more, but also there is the effect of fading in from a visual distant view.

In the transition section from bar 2 to 3, rapid fade-in to "Toch-ter" is shown by joining *Phrasets*. Interest in the forward notes is raised once more by going to the next *Phrasets* at once. And "E-ly-si-um" is completed as *Phrasets* itself in the end of this phrase. If *Phrasets* is completed by the bar line along with the words, the relation of poem is weakened.

That effect is to change the line of sight like roller coaster. In the second phrase, by almost the same way, situation that is difficult to imagine only by the meaning of word is shown impressively as camera work of a movie.

From the third phrase, intention to join to "Al-le Men-schen..." is shown by several progressions to Fis. But new *Phrasets* is divided on midstream of word not to complete every time. Stress is raised and lead to the fourth phrase of theme.

He has an idea not to loosen the tension of "Ale-le Men-schen wer-den Brü-der" as long theme of the fourth phrase. Breaks of *Phrasets* are not matched to the breaks of the words similarly. *Phrasets* is joined to "wo" of bar 15, by which the relation with a phrase "wo dein sanf-ter Flü-gel weilt" is formed and the very calm impression is given here.

As mentioned above, this melody expresses not only the meaning of the words, but also the intonation like recitation admirably by relating *Phrasets* to the notes. Even if we sing along words, such intonation is naturally born through this melody and the effect is made as Beethoven intended. But its effect is more raised by understanding *Phrasets* like this.

Analysis example and inspection of Elementary Phrasets

Analysis example 2

The second music to be taken up as analysis example 2 is W. A. Mozart's Serenade Eine Kline Nachtmusik in G dur K. V. 525 1st movement. The music is well known same as analysis example 1.

Let us analyze it by *Phrasets*.

Detailed explanation is omitted, because the method is the same as analysis example 1. Analysis example 1 has a very smooth melody and it can be said for singing. However, analysis example 2 has a more intense movement of melody line. As there is a jump at the beginning, there are not only scale-like *Phrasets* as analysis example 1, but also many broken chord-like *Phrasets*.

Phrase with such broken chord is sometimes said to be characteristic to instrumental music. However, it is often found in technical vocal music, especially in Mozart's arias. And it can be said that instrumental music and vocal music are the same in phrase up to 1800.

Broken chord is the main for vocal work or singing style called Coloratura that is one of the most important technics not only in that era. At first glance, it seems to be an advanced technique in terms of vocalization. However, broken chord is acoustically very natural overtone relationship. And it is a general singing technique as also seen in Yodeling.

And in brass instruments, a technique called lip slur is basic. It controls lips as the vocal cords. For keyboard instruments such as the piano, the harp, and strings, broken chord has to take time and effort to acquire appropriate techniques. However, as a physical expression, it is rather due to natural control.

As for the pitch, if it is in a physically natural form, it becomes the most suitable pitch and rather creates a transparent and clear harmony. That cannot be created with an artificial pitch such as equal temperament. Acoustically, natural comfortable sound can be created. Not only vocal but also wind instruments are the same. In order to produce a well-organized sound with instrument or voice, attention must be paid for this natural overtone pitch. I describe why such *Phrasets* analysis is necessary to make it sound beautiful in **Afterword**.

The score of the Violin 1 part until the end of the 1st movement exposition from W. A. Mozart's Serenade Eine Kline Nachtmusik in G dur K. V. 525 is shown in example 20.

This score has already been analyzed by *Phrasets*. In addition, ↓ in the score indicates the reaching point of *Phrasets*. It is the same as explained in **2. Phrasets analysis method, A. Division of a note**.

2-1 *Phrasnet analysis*

Serenade in G
Eine Kleine Nachtmusik K.V. 525

Violino 1 WOLFGANG AMADEUS MOZART

Allegro ↓

1 5 9 13 17 21 25 29 33 37 41 45 49 53

p *f* *p* *f* *p* *f* *p* *f* *p* *f* *p* *f* *p* *f* *p*

example 9; W. A. Mozart's Serenade Eine Kline Nachtmusik in G dur K.V. 525 I

2-2 Consideration of *Phraset* analysis

Here, I would like to consider with a slightly different point of view from analysis example 1. Following figure 11 is analysis of the first theme.

figure 11; analysis of the first theme

Analysis 1 is usual, but Analysis 2 is correct. The reason is explained in following figure 12 with \uparrow and \downarrow as the direction of force.

Note) \rightarrow means \uparrow in a large phrase.

figure 12; direction of force

D on the after beat of the second beat in bar 1 has a force toward G on the third beat. D on the after beat of the fourth beat also tries to go to G on the first beat of bar 2. This G has a force to go to an octave above D of the third beat, instead of going to the next D. That is, the first DHG, G on the third beat, and the first G of bar 2 all have force to go to the higher D at the end of this phrase. Of course, D-G-H from the after beat of the first beat in bar 2 runs up to the higher D.

Such force can only be realized by *Phraset* of Analysis 2. Particularly, combining G-D-G-H into one from the beginning of bar 2 emphasizes Tonic G. Then, its force is reduced and the force to the next higher D is lost.

One of the reasons to think as Analysis 1 is that the phrase of bar 4 hereafter seems to be combined with C-A-Fis-A and be settled in the final D. However, if it is settled in this D, the music that just started in G Dur will end in D of deceptive cadence. If Fis-A-Fis-D is set at the end of bar 4 as in Analysis 2, the force for the next G of bar 5 can be gained.

This explains why the first G in bar 5 is repeated. That is, the first triple-stop DHG and the next G in bar 5 are the final note of the large phrase up to that, and the next H is the beginning of the next phrase. Other than that, convincing meaning in repeating this G twice can't be found.

Also, DHG at the beginning of the music seems to be a single sound that does not make meaning by itself. However, if it is recognized as the first note of G-G-G-D that is the same motif with "fate" and is made with the final note of the phrase, the problem is solved. And the beginning of such passage is completely the same as the beginning of bar 5. That is, it starts with an impression emphasized by repeating the first note, and the impression becomes stronger by being also in bar 5.

And in this 1st movement, there is no beginning without such an aufтакт other than the first theme. Similarly, bar 11 has enough aufтакт with two half notes and shows elegance.

Considering the bowing, if it is played in order from the beginning, the end of bar 4 becomes up. Naturally the beginning of bar 5 becomes down. And the next G is completed with up. H-A starts with up and this bowing makes meaning completely. If bar 5 is started with down-down, this function is lost. It should be started with down-up. If it is proceeded that way, the end of the big paragraph in bar 10 ends with down. It is started with up in a delicate nuance from bar 11, and so the nuance as an aufтакт from bar 12 appears.

However, a doubt about the slur on the third beat of bar 13 still remains. I think it should be a slur on three 8th notes, and then everything will go well. Regarding this point, I would like to review the manuscript once, so I do not touch it for now.

As expected, this way of writing is probably a description of bowing that Mozart was able to attach, because he learned how to play very well. That is why these beginning four measures for introduction make more meaning. Such tone lines of G-G-G-D and C-C-C-D are connected to the next first G to become a higher dimension phrase of G-D-C-D-G, and each has a force toward its final note. Then these are repeated, and reaches to the final note.

This means that the famous conductor Sergiu Celibidache once said, "When the first note was sounded, the last note was understood!" same as Heinrich Schenker's theory "URLINIE"¹³⁾ tried to explain.

The person common to these two is Wilhelm Furtwängler, the greatest conductor of the 20th century. It is said that he visited Schenker every time he went to Vienna and repeated his research. Of course, Celibidache studied under him and was regarded as his successor.

Repeating such a thinking is the minimum analysis necessary for an actual performer. The recognition of *Phrasen* is the analysis of the smallest unit of a phrase.

In this example 20, ↓ is attached only to the final note of the motif, that is, the note that forms the structure, in order to make it easier to understand. And all the other notes have force toward the following ↓. That is, all the other of ↓ are ↑.

However, trying to discriminate all by general rule in this way raises questions.

For example, the first note is already ↓ even though it is the beginning. However, if this note is ↑, everything becomes the opposite. Therefore, we have to think about ↑ and ↓ in another higher dimensional unit. It cannot be solved without considering the condition of fractals.

The minimum unit is the first priority in analysis of an actual performance. If this relationship is placed on importance, confusion of higher dimension phrases is prevented. The fractal higher dimension relationship is important. However, the performance may be conceptual when the analysis is done by top-down. Anyway, performance does not become great without such the lowest dimension *Phraset* analysis. Because a performance is required to express the sound of "**now**" and it becomes logical expression by knowing in what situation it is done.

Details of the following parts are omitted.

As for Mozart's musical score, it is written with craftsmanship perfection so that if it is proceeded with bowing one after another, it naturally becomes like music as this *Phraset*. However, there are published scores that are added many symbols or re-attached bowing signs recent years. Those are due to incorrect analysis without like this consideration or due to misunderstanding that Mozart would not have written such signs. It should be paid attention that to use such scores without any doubt interferes with the analysis of *Phraset*.

2-3 Verification by sound spectrogram

In analysis example 1, the model performance is compared with the non-exemplary one for verification by sound spectrogram.

One of the purposes of that comparison is to point out not good performance objectively. However, this methodology is verification to contribute to great performances originally and to verify the evidence and result by sound spectrogram.

Therefore, in analysis example 2 here, two parts of model performance of Furtwängler and Vienna Philharmonic¹⁶⁾ are compared and examined. One is the part that is performed well and another is not so well.

Since both sound sources are in the same performance, it is assumed that the volume and recording conditions are the same. There may be remakes while mixing or editing, but for now I think of it as the same condition.

As an overall impression, the outline of the beginning is cloudy compared to the recapitulation.

Please refer to figure 12. The direction of force is important about sound intonation.

Sound spectrograms of theme are shown in figure 13 below. Left is of the beginning (bars 1-4) and right is of the recapitulation (bars 76-79).

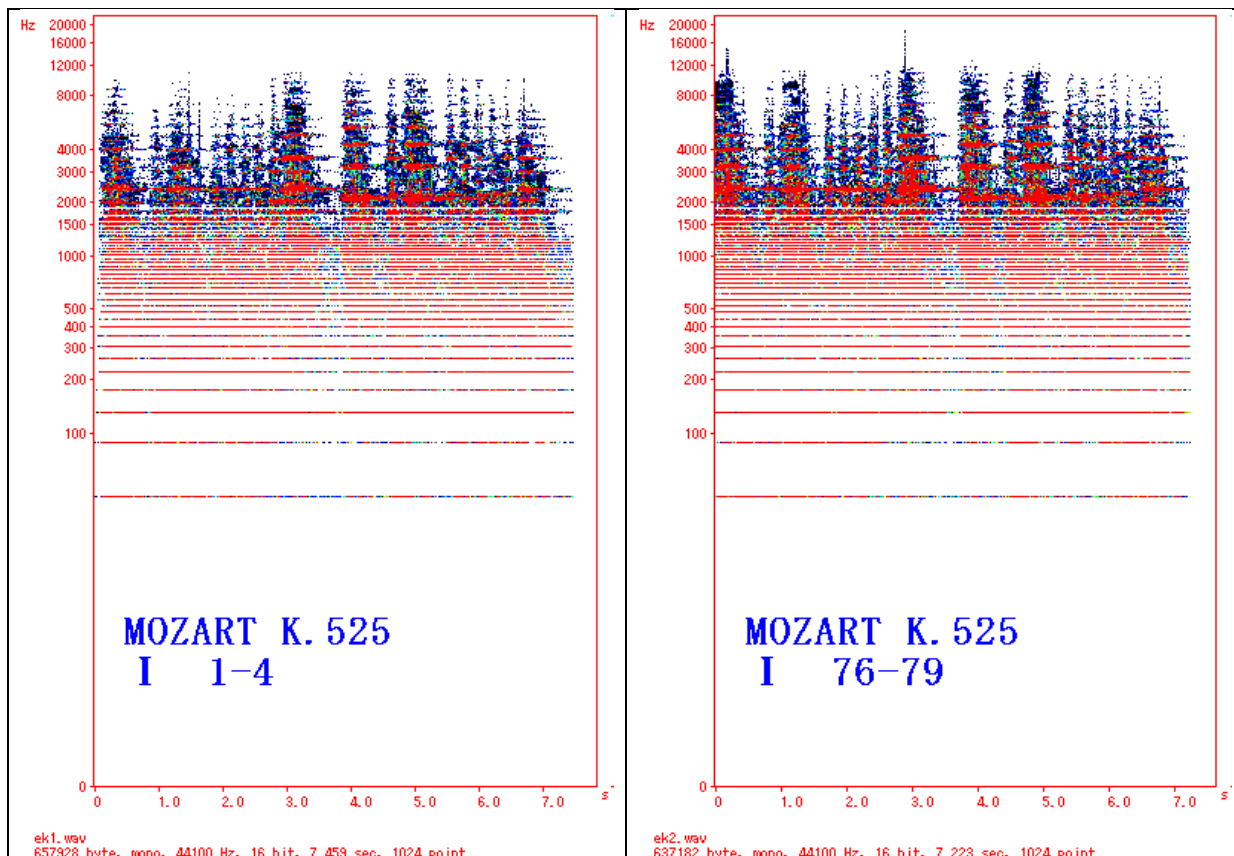


figure 13; sound spectrograms of theme
 (left; bars 1-4, [sound source ek1](#), right; bars 76-79, [sound source ek2](#))

Let us pay attention to the part of the eighth note and the quarter note after the second beat rest (after the first valley).

In the beginning (left; bars 1-4), the relationship between these two tones is not smooth.

However, in the recapitulation (right; bars 76-79), they are clearly connected.

The eighth note of the recapitulation is well prepared for the next note, and therefore the quarter note is full of length and sound.

It's no wonder everyone, even members of Vienna Philharmonic, start the first quarter note and try to connect toward the next soon. It would need much conviction to pull the eighth note toward the quarter note of the third beat anew according from the score of the first motif. As expected, it can be expressed wonderfully in the recapitulation.

The exposition is not repeated in this performance. So, it is a pity that the difference could not be confirmed more clearly. Let us take a look at the sequence of eighth notes in the second half of this motif. The flow of force of broken chord running up from after beat of the first beat is becoming clearer as shown in figure 12 in order, bar 4 than bar 2, the recapitulation than the beginning, and bar 79 than bar 77.

And above all, as a result of the successful performance, the richness of the sound in the recapitulation can be proved by the large number of horizontal stripes of the overtones.

I want you to see that it is not a shocking strong sound of vertical stripes, but a rich sound. The vertical stripes appearing in the highest note of the third beat of bar 77 in the

recapitulation may come out as a result of excessive force. Considering that it disappears soon after the rise of the sound, it is good evidence that the reaching note is confirmed.

The eighth notes of after beat of the first beat in bars 4 and 79 are not clear enough. It seems that they are not enough to think of it as another *Phrasets* from this passage. I would like to know how Furtwängler drew attention to this point.

Don't miss the last note of this motif. The sound at the beginning is completely finished, but the sound at the recapitulation is not finished and the intention to go further can be seen.

2-4 Summary of analysis example 2

It is a matter of course that the exposition and the recapitulation are exactly the same musical formalistically. However, when I think deeply, it seems that the best performance is to examine the presented material first while developing it, and then reproduce it with confidence.

I feel like I'm too enthusiastic about this performance, however the true value of this music is revealed to listen to this recapitulation. All of the conductor, the player and the audience can be similarly convinced by the recapitulation. That is the first-person performance. And that is the reason for the great performance. It is never possible to recognize here whether it is due to Furtwängler's intention or an occasional thing.

However, it may be the confirmation of the final conclusion that it is due to the analysis of like this *Phrasets*.

Afterword

I would explain how this *Phrasets* analysis is necessary and why the great performers of the past have tried such analysis.

The reason why we feel beautiful and are healed comfortably by music is because we listen to the sound in a relative relationship. The sound of "the babbling of a stream" brings peace, but if it is the same sound of water from the retaining wall after heavy rain, it is a danger signal of a landslide. Although it is an extreme example, when you suddenly hear a certain sound, you will not have any impression or intention. The sound comes to have some meaning only by the relation between before and after. That is, "One note does not make meaning by itself" as I describe many times.

As mentioned at the beginning of analysis example 2, in music, pitch is the problem. So to speak, it is the necessity of natural overtone intonation (intonation that is composed of overtone relationships).

The problem of detailed temperament pitch has not been fully investigated yet, so it must be left as an issue for the future. However, now I proceed on the premise that natural overtone intonation creates a pleasant sound.

Equal temperament is at the other end. One octave is divided into 12 by average equally. It is a problem to think it absolutely correct by overlapping Egalitarianism on this equality. It's not that Egalitarianism is not good. There is a problem in forcibly dividing the physical

relationship (the pitch is a logarithmic relationship) into equal parts. There is no objection to that equal temperament is convenient. Thanks to it, we are able to play the piano, the organ, the harp, and keyboard instrument in any key of music with tuning just once. That is very good invention.

However, it is essential that there is a space where sound interferes physically.

I also quote Hiroshi Hoshina's book³⁾ for times. The subtitle is "Performance interpretation method based on energy thinking" and the volume control in a performance is described in detail. This is just an attempt to induce the sound of equal temperament into natural overtone intonation by using the acoustic interference. Whether the piano, ensemble or chorus, when there are multiple sounds, they interfere with each other and are affected. It is both possible to make it beautiful or distorted by the influence. To put it a little more musically, even if it is the same sound, it can be made as a harmony relationship or a non-harmonic relationship. It has to be read from the score and be played.

One sound must be determined by what is resonating before it.

Formerly maestro Sergiu Celibidache tried to explain such a relationship by Music phenomenology. Not to mention such a philosophical verification, when it comes to the final C moll harmony of Bach's St. Matthew Passion, it does not become a passion if H of only the flute is considered as the 7th note of Tonic chord I₇. This must be suspension that drags H from Dominant chord V in the previous bar. This one sound expresses everything and gives salvation by solving to C.

Whether it becomes the 7th note of I₇ or a non-harmonic tone depends on the pitch or strength. If it is weak, it is affected by an absolute majority of Tonic chord of C moll and becomes a harmony tone of I₇. Even if it is strong, when it resonates at the pitch of natural overtone, it becomes a harmony tone. It becomes the tone that J. S. Bach intends only when it opposes other sound with a fairly strong will.

This process is rather not difficult with the organ. The temperament is equal temperament, and it sounds as a chord of CEsGH. Then, with the overwhelming power of CEsG, H sounds out of harmony. And so, rather, this chord sounds muddy and its purpose is achieved. Due to the acoustic of the room in which the pipe organ is installed, the harmony created in the previous bar resonates in natural overtone intonation. So, H is heard as a remnant of that at first, and it is not swallowed by the next harmony sound.

The sounds of the electric organ and the synthesizer in the mechanical environment continue to make sounds moment by moment, so they continue to sound in equal temperament without harmony. Such a sound environment causes a mental discomfort. For solution, rock bands control the sound to natural overtone with physical effect by a loud bass. It is understandable.

Not only as such a serious meaning, but also every melody is given a meaning by assigning such a role on each note. It is very important to distinguish whether the existence of one note is the end of the previous *Phraset* or the beginning of the next *Phraset*. As intonation, it becomes "surplus" or "not enough", or ends halfway. As harmony, if the beginning of *Phraset* changes, the basis of the harmony changes and it sounds like a different chord. It becomes impossible to explain the logical development.

It is hard to prove in words. However, there are many examples in the actual performances that the flow changes dramatically improved, and the sound and pitch become very good, just by correcting the mistaken *Phraset*.

As an example, here is a common mistake. Everyone knows "Voi, che sapete" sung by Cherubino in Ariette of W. A. Mozart's LE NOZZE DI FIGARO K. 492 No. 11. The jumping C hardly works well without a good pitch. The reason is to sing sa-pe- with F-C- jumping. C, the fifth note of V of -pe, is not able to be taken correctly because of form change by root note C of new Dominant chord II. If sa-pe-te is sung holding the form of chord I as the beginning Voi, che, (B-F), it succeeds. That is, to sing this jumping smoothly, it is necessary to understand that F of che is the fifth note of Tonic chord I and F of sa- is the root note of Dominant chord V. Then very comfortable natural overtone C is sounded.

The score is shown as example 21.

Even Italians may hesitate to sing sa-pe-te in one *Phraset*. If it is started with -pe-te, this C becomes root note C of ii and it also becomes unable to return to F. And so, the pitch becomes unstable.



example 21

If sa-pe-te is sung boldly at one form, it goes without difficulty.

It's an easy matter, but if you know it only in experience, it ends up just in this part. I would like to have *Phraset* analysis method so that I can always read this way.

Proof between pitch and the effect of *Phraset* on it is not perfect, so it is a task hereafter.

Since I finished writing this book, I was convinced that there must have been books that developed such a theory and searched. I was finally able to find it in the spring of 2008. Hugo Riemann has published PHRASIERUNG Max Hesses in 1912²⁰⁾. He is a German musicologist famous for music dictionaries. I would like to study this book hereafter.

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