Elementary Phraset

- Minimum division of a phrase and its importance in a performance-

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1. Introduction

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 Phraset*. I call it "*Phraset*" 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 PLAYING[1]. The term, "grouping" is used by G. W. Cooper and L. B. Meyer in their book THE RHYTHMIC STRUCTURE OF MUSIC[2]. 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 the sounds according to the state of the notes written in the score, and the composer's intention should be read through it**." (APPROACH TO LIVELY MUSICAL EXPRESSION -Performance interpretation method based on energy thinking-[3] Chapter 1, Section 2, p.21), even emphasized in bold.

Like 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 too excessive dramatic effect aiming to make audience "impressed".
I think one of the reasons for these performances is that the melody analysis is not established enough. The grouping method mentioned above is a good logic. But I don't think it is enough to establish a performance theory, because it is a logical explanation for a construction of a phrase and much of how to perform music is left to player's interpretation.
Grouping for phrase recognition is of course essential. But it seems to be necessary to establish a theory that gives a meaning to each note, because performance is a real-time theatre performance. Therefore, in this paper, I would like to describe the way how to analyze more detailed phrase elements, "*Phraset*", and its importance.

How to analyze melody is to try to divide a sentence into each segment as quotation from Hoshina's book. 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 *Phraset*, that is, what players do is the interpretation. The way of division of *Phraset* is not the interpretation. (Players never interpret how to divide *Phraset*.)
This is the difference between this *Phraset* analysis and grouping theory. In the above mentioned Hoshina's book, analysis theory and performance theory are mixed in order to explain how to play by grouping. So, it is difficult to understand this theory as a guide for good performance.
In order to add own intonation by player's interpretation, the analyzing must be correct. The performance by player's own taste or custom goes far from the composer's message. There are too many performances without empathy or respect for composers, because such the correct interpretation isn't made.

I mentioned melody analysis is necessary for good performance in my previous paper PERFORMANCE ANALYSIS BY SOUND SPECTROGRAM[4]. I explained the way of judging for good performance by Sound Spectrogram. I verify the importance of this *Phraset* analysis by "The Analysis Method for Resolution of the Intonation's Problem" in that paper. I think that this *Phraset* analysis becomes the concrete standard in jugging the quality of performance.

2. Concept of *Phraset* analysis

The concept of *Phraset* analysis is to bring logic into the 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. And then a series of non-separable notes becomes clear. This series or group must not be decided by personal interpretation, and it has to be proved objectively. Similar analysis is often done by the harmony theory, but this is approached by melody analysis.

The above-mentioned Hoshina's grouping theory[3)] is one of melody analyses. *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. bibliography[5)]) 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 would seem to be an extreme argument that improvisation patterns are all for as scale, turn and arpeggio. However, not only improvisation but also all music is made by these patterns. Passages that do not seem to apply these patterns are application of them. How complex an improvisation of Jazz is, it is only the variation of their combination. Therefore, all music composed in the past such from J.S. Bach to modern music can be explained by these patterns. The methodology is in the explanation for composition method by Arnold Schoenberg FUNDAMENTALS OF MUSICAL COMPOSITION edited by Gerald Strang & Leonard Stein[6)].

The method to variate a motif is written in details 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. However, a composer may think that a smaller unit than that is too small to reflect his intention. Or it is recognized as a composer's subconscious part. Here, I make an issue on this point. I would rather think such unit reflects the composer's deep intention. When players investigate the composer's deep intention depending on score, these hints are in *Phraset* or its variation.
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 variated 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. I believe that it can be explained by this *Phraset* analysis.

3. *Phraset* analysis

As the procedure of the analysis, it is the first to find a starting note and a reaching note one after another from the first note, or rather the reaching note is the important one. So, to try to find leading note toward reaching note is also necessary.
There are also connections of note in larger units (phrase), as I mention in details afterwards (Urlinie[13)]). The above-quoted grouping analysis is useful as a methodology analyzing a phrase construction. However, this *Phraset* treats much smaller units. So, we must begin to see the minimum unit at first and then think about the connection of larger units. Therefore, phrase construction is understood without contradiction. And then we can perform logically.

When some contradictions and problems that upset large units occur while analyzing, we sometimes doubt about the analysis. However, the question is solved when we find out logical relation positively between *Phraset*s divided to the minimum. 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. To interpret music so that musical analysis can be applied is contrary to the aim of performance. 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. *Phraset* analysis is not difficult if you listen to tones. Rather, it can be said that the notes combined naturally will explain as a theory what connection lies between notes.

I would explain the analysis method by showing some actual examples of *Phraset* analysis as follows.

*) A white line in example score indicates a break where every *Phraset* is separated

from each other.

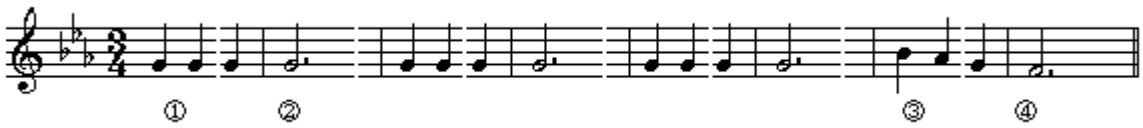
*) The sound source in the example is made public on author's web site[15]. To listen to it makes the effect of *Phraset* analysis evident. Please do refer to it.

*) The sound source is played by MIDI. *Phraset*s divided both correctly and incorrectly are available. The last note of *Phraset* is performed by 80% of the real length of the note, and others are 100%. These sources performed in this way are only mechanical sounds without live sound.

A. Division of a note

Divided melody into the minimum is each note, of course. But a single note makes no sense. As Heinrich Schenker says, "However the motif needs some, at least two consecutive notes to be considered also as a phrase, doesn't it?" (BEETHOVEN FÜNFTE SINFONIE, Universal edition[7]), 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 *Phraset* analysis (example no.1) that one note is divided into some.



example no.1; L. van Beethoven's Sym. No.5 c-moll III,
correct sound source 2a, incorrect sound source 2-1

When one G-tone (Germany pitch name, "tone" is omitted hereafter) is divided in four, each note gets a new meaning. The first note is the beginning. It foresees that something happens. Then it has directivity to the next note or some note ahead. The second note continues and increases the force to the reaching note. The third note increases the force to the reaching note. Setting four tones as one *Phraset* （①+②） is not wrong. If the included the minimum unit is made by two parts, the meaning of dividing in four becomes stronger. Especially, by showing the elements of ③ and ④, that the same sound is repeated three times with the same note makes meaning. And by the same note again in ④, it adds a big meaning in the transition to F.

This example no.1 has G-G-G-F motif of a large phrase in the whole this score. To perform it clearly, we must understand these *Phraset*s.
The repeated pattern in this example no.1 is the variation of the opening motif in this symphony.
The so-called "fate motif" of four notes is generally explained as G is divided into three and goes to Es. This phrase the 3rd movement 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 **3.E. Auftact**.) This theory supplements motif interpretation logic (Urlinie[13]) described in Heinrich Schenker's book (BEETHOVEN FÜNFTE SINFONIE Universal edition[7]) 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 described as figure 1 when we see the relation of notes by prototype.
*) ↑ and ↓ in figure 1 show the directions of the notes. It is similar to up and down beat. That is, ↑ has directional force to ↓. ↓ shows reaching note.

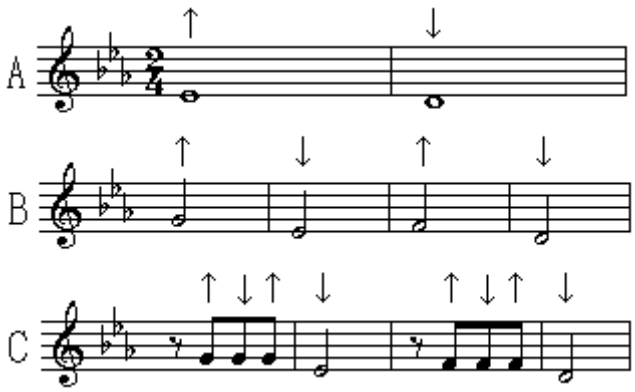
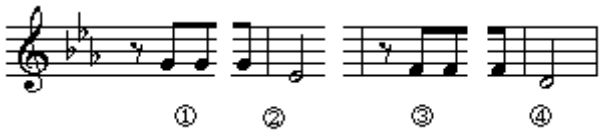


figure 1

Strictly, ↑ on stave A subsists in staves B and C, but I leave it now as the minimum unit's analysis. *Phraset* analysis is for the resolution of phrase. On this basis, we can divide it in four *Phraset*s like example no.2 when we take one *Phraset* to complete at ↓.



example no.2; *Phraset* analysis of "fate motif"

All 8th notes are ↑ in the stage of stave B, figure 1. But division necessary for playing is shown in this *Phraset,* because there is a meaning to emphasize the prototype further by the development to the stage of stave C.

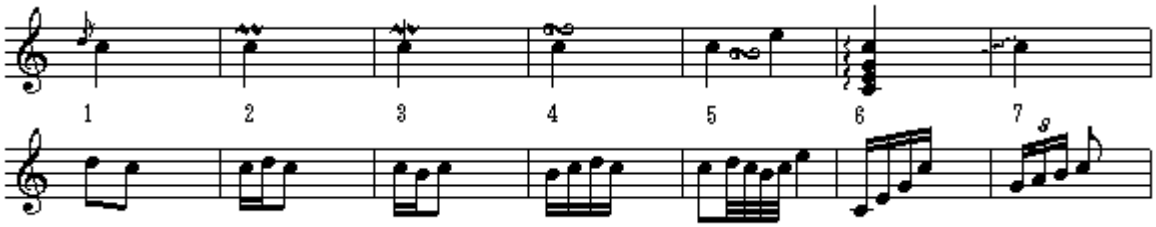
B. Improvisation, ornament and variation

Ornament and variation are used as the same meaning as improvisation in Baroque music. Or in playing method of Baroque, improvisation like ornament note used today is called French School and variation is called Italian School[5)]. Notes to be changed are the same, but only the speed of changed notes is different in both Schools.

Some examples are compared in example no.3.

*) 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



example no.3; sound source 14

*) Name of sign on top stave; 1. acciaccatura *It.* (long version: appoggiatura *It.*, before beat version: coulé *Fr.*), 2. inverted mordent *E.,* 3. mordent *Ger.*, 4. 5. turn *E.*, 6. arpeggio *It.*, 7. schleifer *Ger.*

Example no.3 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. The sound pattern is the same, Italian school makes melody changed (variation) by

playing it slower. Even though, we usually look ornamented score as the bottom stave without knowing it today since the Classical period as around the end of 18th century.

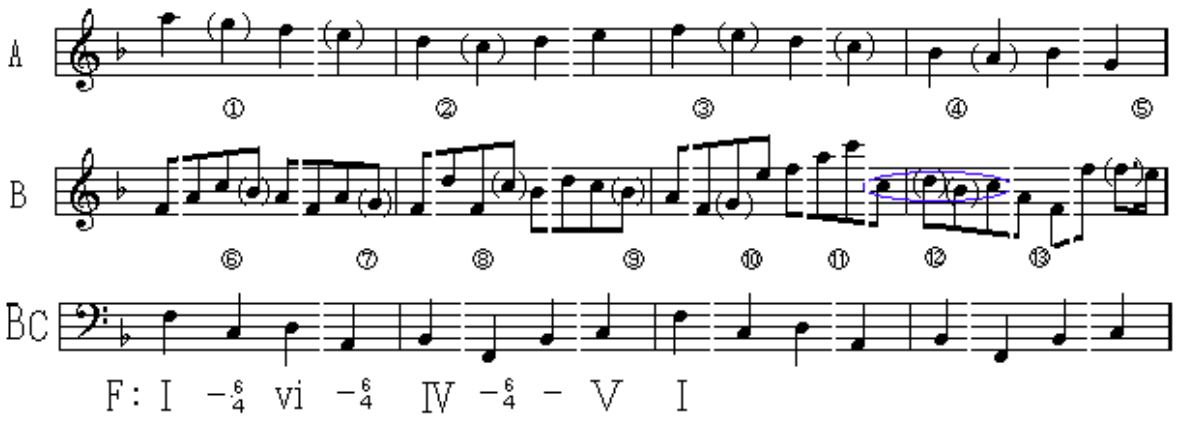
Surely, these are only some examples, but most of other passages belong to those patterns. Divided note in **3.A. Division of a note** above is also one of the ornaments. However, melody is added such change of notes for each divided note. Fractal situation is made by the repetition in this way. We are so interested in analysis of this situation. But let's 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 CONTINUO[12)] explains this process. It is an important score as an improvisation guide written for study in Baroque era.

As a more familiar example, I will take a part of the canon's phrase from J. Pachelbel's *Canon and Gigue* (*Canon a 3 con suo basso und Gigue*). There is introduction of 2 bars by basso continuo before the melody begins and the melody of 4 bars starts. That melody is the simplest and basic one.

Here is example no.4. Stave A is the basic melody. Stave B that follows after stave A, is a part divided in 8th note and ornamented. Stave BC is basso continuo's *Phraset* analysis.

*) The note in ( ) is nonharmonic tone.



example no.4;

J. Pachelbel's Kanon und Gigue in D-Dur für drei Violinen und Basso Continuo,
stave A; theme, stave B; the 1st variation, stave BC; basso continuo

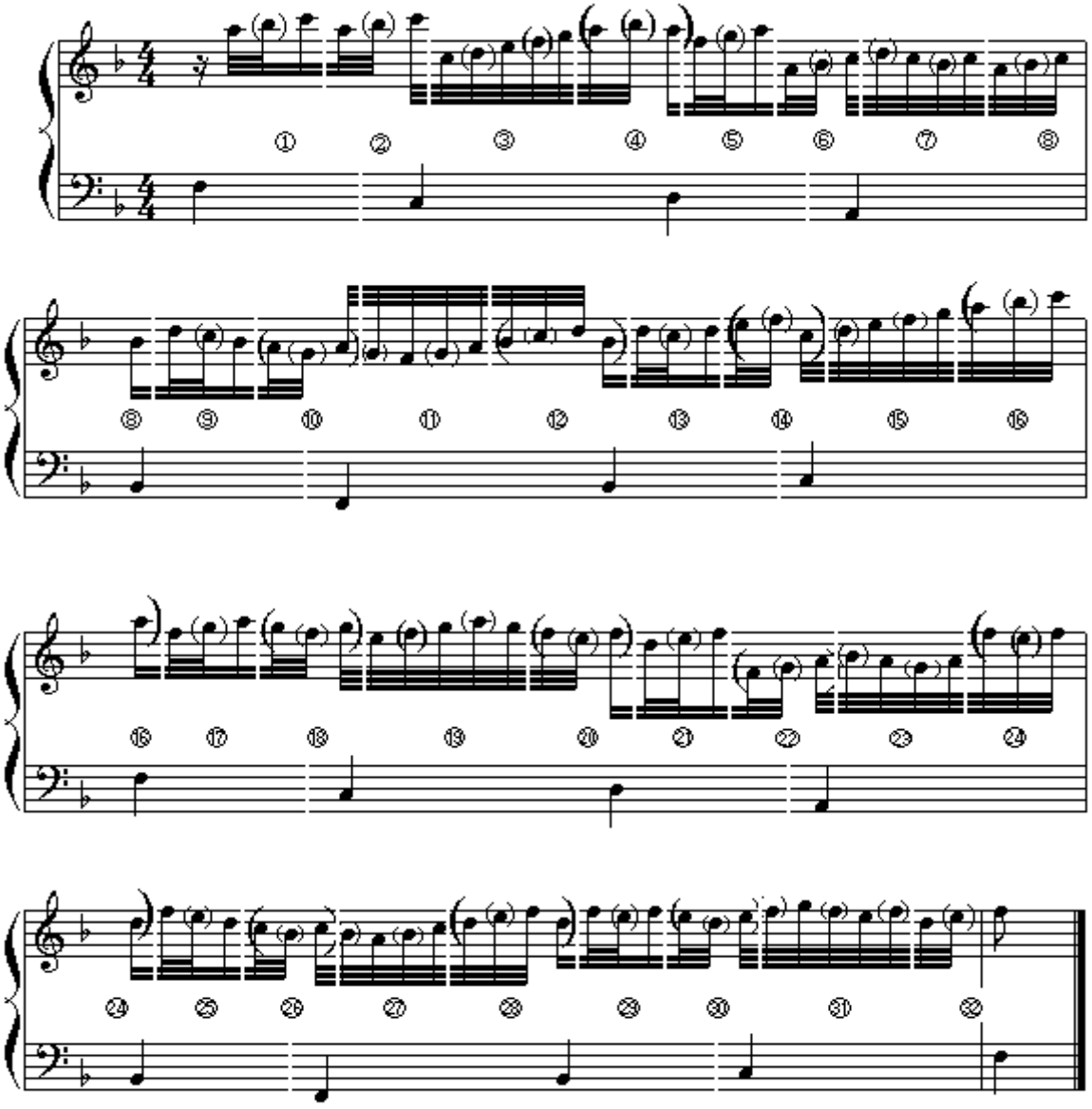
You may want to separate these notes at bar line, so sometimes the end of *Phraset* is nonharmonic tone. Therefore, it is not the reaching note. Then *Phraset* is like example no.4. As ornamental words; schleifer is in ①⑤⑨, mordent is in ②③④, division of the same note and then schleifer is in ⑥⑦, ⑧ includes root note F in schleifer, Turn including one octave jumping is in ⑩, Broken code is in ⑪⑬, Turn is in ⑫ with C in center.

Basic melody as stave A of only quarter tone is easy to be mistaken unexpectedly. The melody of Beethoven's Symphony No.9 "An die Freude" is often performed incorrectly as such. I would like you to refer to **4.B. Relation between *Phraset* and lyrics**. Then, you may understand how different the performance is if the analysis is not correct. That compares the model performance example with the wrong one.
And *Phraset* analysis is necessary for not only main melody but also basso continuo. You may think it unnecessary because it is not melodious. But it has more significant musical meaning. Originally, any part has no slur. In those days, slur, in general, should be recognized not to be used. 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. I write in detail afterwards about slur in **3.D. Slur, staccato, bar line**.

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 copies 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. Adding some signs is guessed to be done freely as a custom of that era. Nowadays, it is said that slurs seen in J. S. Bach's scores were added by C. Ph. Emanuel Bach. Many orchestral parts remain as the same as this. It is so disappointing.
Also, there are scores that have additional signs written by many 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 continued until recent years. However, legendary maestro Wilhelm Furtwängler analyzed *Phraset* as Urlinie[13] accurately accompanied with musicologist Heinrich Schenker. It can be understood by his recording[14].
I think it is his essence of his great performance. Rather, I started to recognize this analysis method to seek the key of his great performance.

I show example no.5 as *Phraset* analysis of the most famous the 4th variation added with more complexed ornament.



example no.5;

the 4th variation of J. Pachelbel's Canon

correct sound source 16a, incorrect sound source 16-1

*) Beginning C is omitted, because this beginning note is the final note of the previous element, i.e., it is the reaching note of the former *Phraset*.

*) The note in ( ) is nonharmonic note.

Ascending scale elements of ③ beginning from C seems to be divided by 4 notes, but the analysis is shown like this. Because ③ is Schleifer (CDEFG) rising vigorously from C and ④ is reaching note A with mordent (ABA). ③+④ is right, too. So, the energetic series of the notes or the vigor is expressed well.

⑦＋⑧ is not correct, because ⑧ goes to B, harmonic tones are A and C in it and the note just before the last note is harmonic note with a little force. Element of ⑮ begins from D. It seems to begin from former C, but if so, when it goes to the last note A, it becomes hypermetric (too many notes or extra notes). Still, one note protrudes. If an element is made by C-C scale, next first A becomes single. Then contradiction is generated. Regrettably, many performances are done like this.

Elements of ⑲ and ⑳ on the third bar are similar. I didn't make 8 tones as one （⑲＋⑳）, because if I do so, the vigor of ascending and descending phrases towards the reaching note is lost and the force is lessened.

I made two 16th notes DE in the 4th bar as auftact. Then the last cadence stands out and fits as ending of phrase.

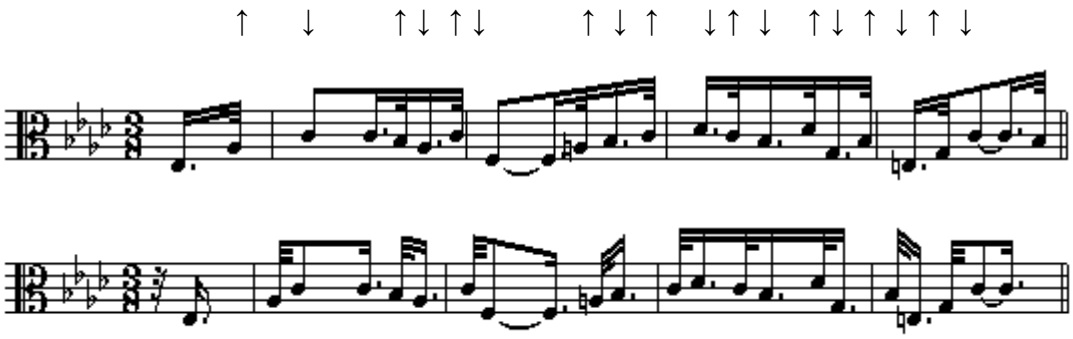
C. Shorter note

There are some general rules to regard the division of *Phraset*. Relatively shorter note ornaments or emphasizes the following longer note. So, these notes must be made as one *Phraset*.

As general western melody form, ornament is given in front of the main note. Ornament given after the main note is hardly seen in western music except Japanese "kobushi". It doesn't just only ornament, but emphasize the ornamented note, and then it must be put in front, not after the note. (cf. **4. Verification of importance of *Phraset***)

↑ and ↓ help to understand as above figure 1.

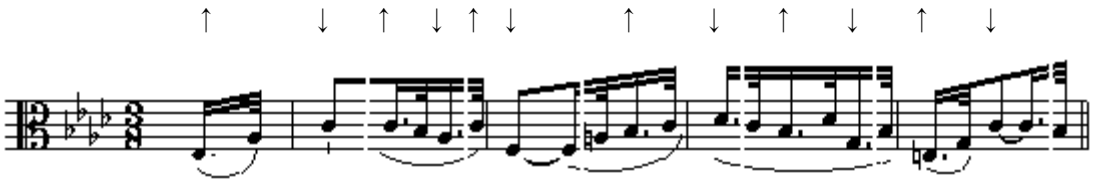
I show the beginning of the 2nd movement of Beethoven's Sym. No.5 in example no.6.



example no.6; sound source 6a

In the top stave of example no.6, 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 understand easily by thinking which note is more important. If they were written as in the bottom stave, it is easier to understand, but it is difficult to read it exactly. In the case of the bottom stave, the actual performance will be as the top one. Rather, if we try to play the bottom stave strictly, physiological discomfort will occur and strong will to disobey appears. Human sense puts shorter note before the beat certainly. Or playing becomes as the top stave.

Example no.7 is *Phraset* analysis of this score.



example no.7; L. van Beethoven's Sym. No.5 c-moll II,
correct sound source 6a, incorrect sound source 6-1

D. Slur, staccato, bar line

There is a disturbance for *Phraset* analysis. It is the musical grammar.
Slur is one of the biggest causes for analysis mistake. There is no doubt about general

rule of **3.C. Shorter note** by example no.6. But if a slur is written as example no.7, you may think *Phraset* division is incorrect. *Phraset* seems to be incorrect, if a slur means phrase. However, it means the bowing sign of strings. "In the era of early 19th century, a slur is not used for the purpose of showing phrase." (cf. THE NEW GROVE DICTIONARY OF MUSIC AND MUSICIANS[8])

The slur between 32nd note and the next longer note is cut. Especially at the beginning, vertical stroke (short line) is written on the next 8th note and demands clear note. (spiccato and staccatissimo as bowing sign) Changing of bowing on this note makes it clear sound. And about after this slur. We understand that the first note of the next slur forms the structure of melody under ↓ and it is very important. Now, let us see only longer notes. Because the first Es is auftact of C, phrase becomes Es-C-C-As-F. Because the next B is also auftact of D, phrase becomes B-Des-B-G-E-C. E-G-C is inversion broken chord of Dominant CEG that emphasize the kye. We can see here the variation of "fate motif" by four notes. 32nd notes are there to ornament in front of these important notes. Then *Phraset* analysis becomes as example no.7.

We must pay attention to characteristic signs as "staccato and spiccato" as much as slur.
There is a description about how Beethoven used staccato. "Today, notes with staccato are played by as short touch as possible, being unrelated to their length. But in Beethoven's era, oppositely, staccato was sometimes played as tenuto or just emphasizing. And it was also as sign of comma in a phrase. It is confused with staccato of our era." (Shin Kojima BEETHOVEN KLAVIERWERKE KRITISHE AUSGABE MIT HISTORISCHEM KOMEMMENTAR[9]) And before this comment, he says "Today, we have been separated completely from the tradition of music of 18th and early 19th centuries. And so, assumptions and rules for performance of those days that needs no explanation as matters of course have been forgotten." We must pay attention to any signs like these that may inhibit essentially correct performance.

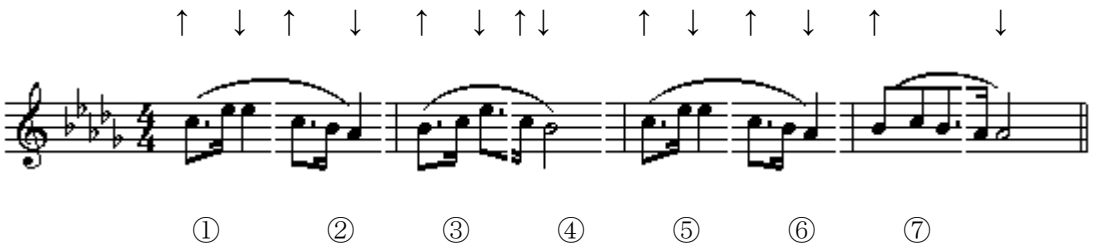
There is one more thing which we should re-recognize, called "bar line", because it is easy to be mistaken. Mostly, a bar line that divides stave is thought to show the division of melody. However, "A bar line indicates downbeat of a phrase." is the correct understanding. The right side of a bar line is downbeat and the left side is upbeat

(anacrusis).
Musical grammar writes "lines dividing a certain number of beats into measures; the bar-lines also indicates the position of the main accent". (William Lee, BELWIN POCKET DICTIONARY OF MUSIC[17]) Generally," A bar line is a vertical line in a stave to divide beat unit and divided beat unit is measure." (Shigemi TAKEI THE NEW GROVE DICTIONARY OF MUSIC AND MUSICIANS[8]) But when we divide notes by *Phraset*, it is easy to misunderstand.
The measure as a part between two bar lines never indicates group as melody. Or there are many cases that auftact note before a bar line and the next note after the bar line make close relation (↑ ↓) over the bar line as one *Phraset*. And they must not be divided.

E. Auftact (anacrusis)

We need to understand auftact for *Phraset* analysis. I quote the meaning of auftact (anacrusis) that is used frequently from a dictionary. It is "within rhythm of meter, just in front of 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 in front of the first bar line of phrase or melody." (Ichirou KADOKURA THE NEW GROVE DICTIONARY OF MUSIC AND MUSICIANS[8]) Down beat is limited as the first beat of measure there. But I think the third beat of 4/4 or the second beat of 2/4 and every down beat should be included. Each also has an anacrusis, but I set aside it now. Please include all such cases in auftact. It is sign of ↑.

In the intonation of melody, western music almost always has auftact. I forgot the source, but I remember to have read an explanation affirming that "No music has no auftact." It is extreme logic, but it may be said "almost".
The intonation of western language has auftact in many cases. I think there is a significant relation in terms of intonation between language and music.
Oppositely, languages without auftact are Japanese and the Slavic languages of Eastern Europe such as Russian, Polish or Czech. 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, music of Russian, Polish and Czech often does not have any auftact indeed. We can make it much clear by *Phraset* analysis. (example no.8)



example no.8; A. Dvořák's Sym. No.9 e-moll Op.95 II

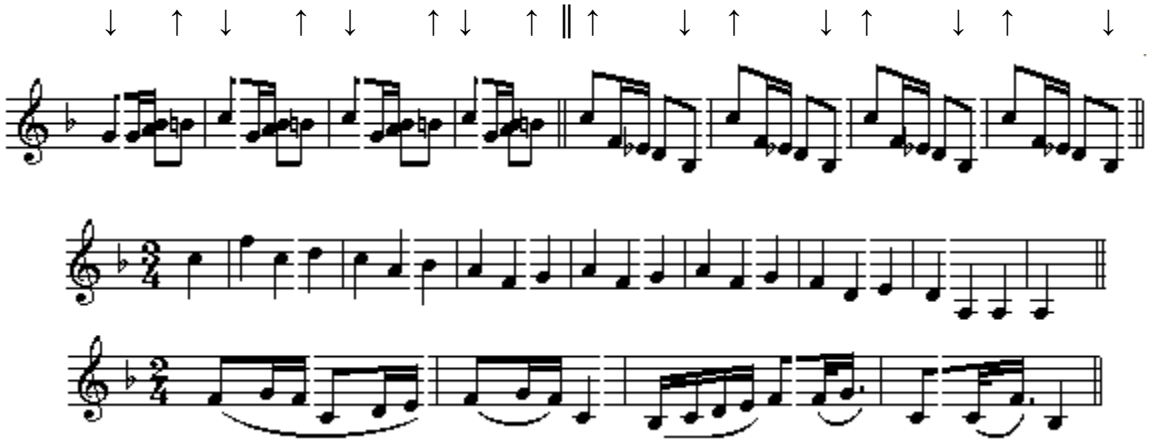
correct sound source 8a, incorrect sound source 8-1

There may be no problem about ① and ②. Each 16th note belongs to quarter or half note. If it is divided there, dotted 8th note becomes isolated and the force to quarter or half note weakens. ③ is maybe o.k. as ③+④. But the meaning as variation of bar 1 should not be broken.

In this example no.8, if all melody is written one beat prior, auftact may be recognized. However, Dvorak seems to have wanted intonation without auftact.

Even composers in the area of the language that has articles use such melody consciously.

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



example no.9; L. van Beethoven's Sym. No.6 Op.68 F-Dur,

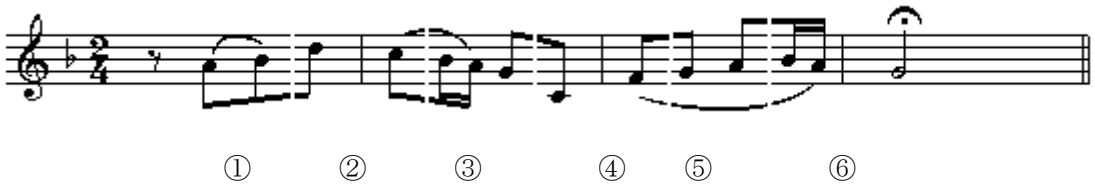
Top stave; bars 16-19 of the first half, bars 151-154 of the second half of I,

correct sound source 9-1a incorrect sound source 9-1-1

Middle stave; beginning of III

Bottom stave; bars 165-168 of III,

correct sound source 9-2a incorrect sound source 9-2-1



example no.10; theme of I in L. van Beethoven's Sym. No.6 Op.68 F-Dur,
correct sound source 10a incorrect sound source 10-1

In this work, Beethoven seems to consciously use the cases with and without auftact. In the first half on the top stave of this example no.9, he uses the part of ③ *Phraset* of the first phrase in the 1st mov. (example no.10) The beginning is a phrase with auftact and starts with 16th notes. (The first G is the last note of the former *Phraset*). And in the second half, he uses phrase of ③ without auftact as a variation of *Phraset* for the whole bar 2. Though the passage from the development section in the second half seems similar to ③.

He adds the title to each movement himself. The 1st movement has "Angenehme, heitere Empfindungen, welche bei Ankunft auf dem Laude im Menschen erwachen." Maybe he went to the Czech Republic or Hungary, a little further away than the Heiligenstadt hills and the nearby Vienna forests, 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.
It's my guess, he may have got the impression of arrival at the country by listening to such intonation without auftact and steps of folk dances around there. Sudden Birds' voices (also without auftact) by the clarinet and the fagot are heard in bar 53. It would be one of the pieces of evidence of that.

In the middle stave of the example no.9, more clear melody appears in the 3rd mov. Melody begins from auftact of the 3rd beat. From Trio in the bottom stave, melody begins from down beat without auftact unsophisticatedly. This is just "Happy Gathering of the country people"[11].
It is certain that Beethoven focuses on such intonation.

These non-western melodies begin without auftact such as "From the New World" or "Pastoral". But the intonation with auftact is seen in other melody according to the

general rule of **3.C. Shorter note**. Only the first bar of the 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 are auftact, if four notes are considered as one *Phraset*. (example no.2) 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 need to make a break on the bar line unrealistically. If we put together four notes with auftact of three 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 in the very slow tempo as old maestros did in the past.
Unfortunately, conductors without knowledge cannot understand this sense. This could be understood in actual conducting orchestra live. Performance is not difficult, but conducting is not easy contrary to expectation.

Considering the performance that is faithful to *Phraset*, *Phraset* analysis as figure 1 is seemed incorrect. But it is necessary for performance. If you apply ↑ ↓ to bowing, you understand easily. The topic is a little off, the other issue is about the half notes in bars 4-5 that are connected by a tie. There are several opinions, but if we think it is for taking the bow back, 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 on the bar line or on the beat.

F. Consideration of cadence

Cadence 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." (William Lee, BELWIN POCKET DICTIONARY OF MUSIC[17]) I use it for the meaning to converge the progress of a tone to a certain note here, including "resolution (progression of a nonharmonic note to a harmonic note)".
That is to say, the purpose of *Phraset* analysis method is the same to show clearly the resolution note as explained by ↑↓. In **3.A. Division to some notes**, divided notes converge to the last note. In **3.B. Improvisation, ornament and variation** and **3.C. Shorter note**, every note goes towards the last longer note, too. In **3.E. Auftact**, the purpose is to converge the melody to the next down beat note, 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. If each harmony is considered finely, such chord progression can be applied to each. It is a harmonic theory. I leave the analysis to the scholars of harmony. I would like to make a problem of determining whether one note is going toward the note of some reaching note or it is reached. Therefore, I quoted Schenker's sentences[7]. "We cannot recognize some meaning by just only one note." (BEETHOVEN FÜNFTE SINFONIE Universal edition[7]) One sound cannot show its intention of the direction, because one note must complete itself. We can regard such note as "!" 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 (automatically the 2nd note) is ↓, and another has a function ↑ to progress to it. We should investigate such a relation about every note.

Harmony theory has a term as chord progression, but the analysis of progression about each note of melody has not been done. It may have been missed as a matter of course. There is, of course, no problem in the parts that are easy to understand. But when we analyze every tone, there are always ambiguous notes left. If it is still left mistaken, function of every note hereafter is displaced. Because this is a slight thing in the case of thinking about the structure or the form, we may see only the important parts. But player should always have an intention for every note and express the direction of each note. So, we can play the meaningful performance. This is the importance of *Phraset* analysis as the investigation of the combination that concludes the meaning by the minimum unit.
When we play by correct *Phraset* analysis, pitch and sound change better. That is important. We need further study about it.

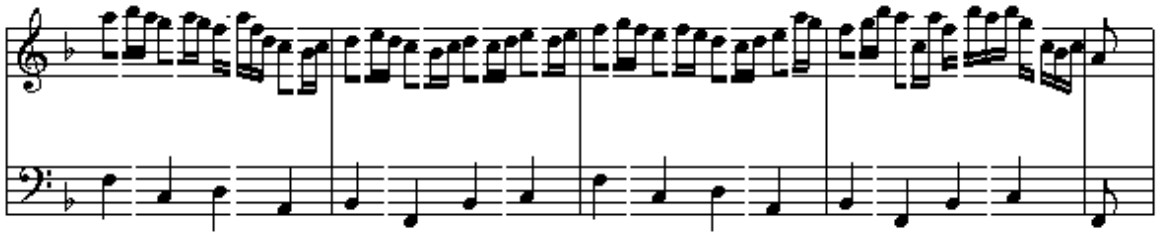
4. Verification of importance of *Phraset*

A. Verification by sound spectrogram analysis

As sample verification, I show the 6th variation from J. Pachelbel's Kanon und Gigue in D-Dur fur drei Violinen und Basso Continuo. I treated it in **3.B. Improvisation, ornament and variation**. It looks like a variation of example no.4 stave A; theme. Each beat seems to be attached Inverted Mordent. When we perform it by incorrect *Phraset*,

shorter note comes behind. This intonation is not western style as I wrote in **3.C. Shorter note.** It might be trial of melody development by schleifer that is lead to the next 8th note, not by mordent. Like this, each beat is very often mistaken as one *Phraset* of mordent. I verify this mistake.

I show the correct *Phraset* of this part in example no.11.



example no.11
J. Pachelbel's Kanon und Gigue in D-Dur fur drei Violinen und Basso Continuo,
the 6th variation,
correct sound source 19a, incorrect sound source 19-1

When *Phraset* is divided correctly, performance is like sound score 19a. And if *Phraset* is divided as mordent of each beat, performance is like 19-1.
The impression of incorrect sound source 19-1 is childish. The music is stagnant. We cannot listen as ornament of stave 19a's melody, and only unsteady impression remains. However, such performance is frequently found in fact.
The performance of the sound source 19a that has been correctly analyzed by *Phraset* is dynamic. Its lively expression makes the phrase of the famous 4th variation, which was completed once, and makes us feel the motivation for new ideas further. 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 determined without listening to an actual performance. Even if we listen, there are many problems to make such sense as shared recognition. Therefore, I try to verify this point by sound spectrogram analysis. I wrote it as a method to judge whether a performance is good in my paper PERFORMANCE ANALYSIS BY SOUND SPECTROGRAM[4)] as "Analysis method that solves the intonation problem".

Figure 2 shows analysis by sound spectrograms of correct and incorrect sound sources.
*) Correct or incorrect MIDI sound source in figure 2 is converted as WAVE format and analyzed by sound spectrogram. Everything is handled in the same computer and unrelated with live sound.

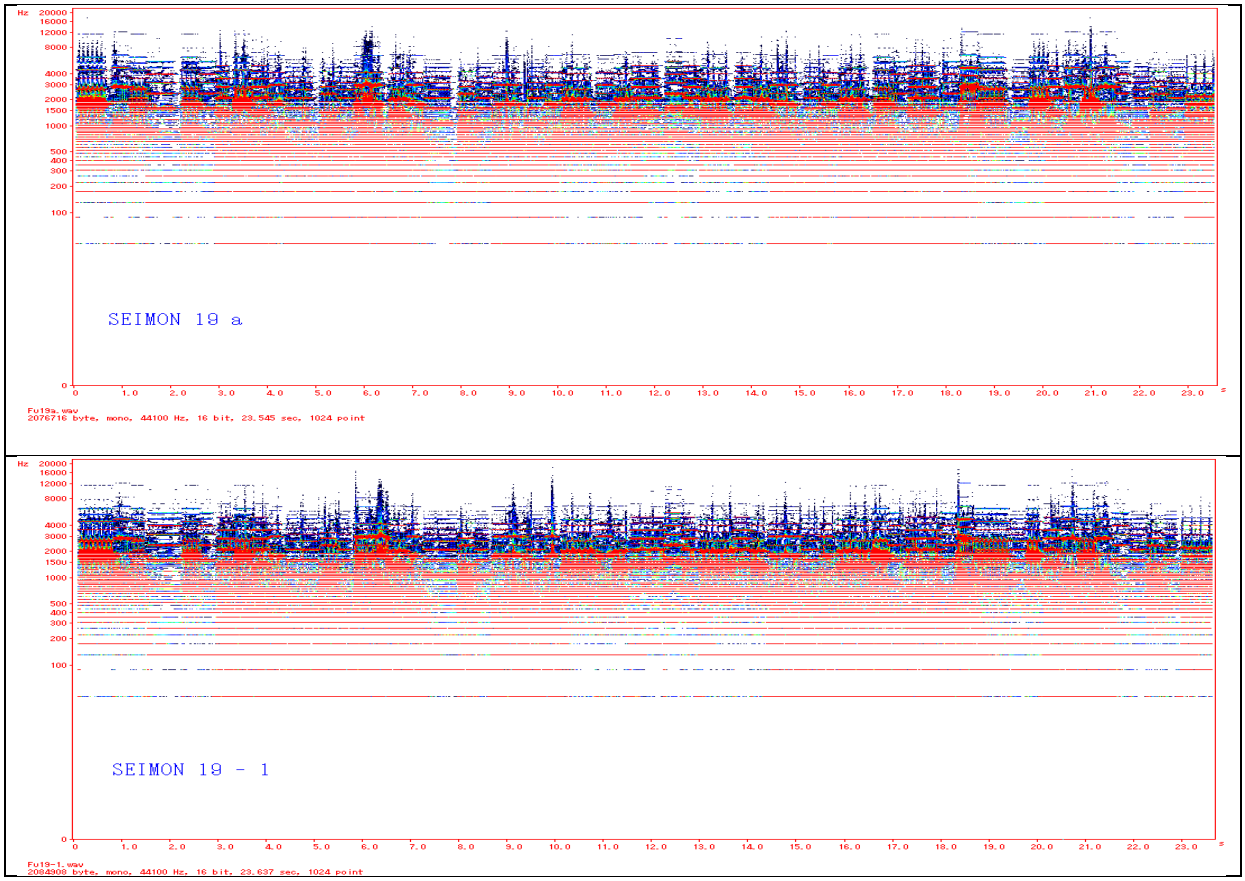


figure 2

Top figure; sound spectrogram analysis of correct sound source

correct sound source 19a

Bottom figure; sound spectrogram analysis of incorrect sound source

incorrect sound source 19-1

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? It's no wonder. But the difference is clear by comparison of these sound spectrogram analysis of sound source in actual.

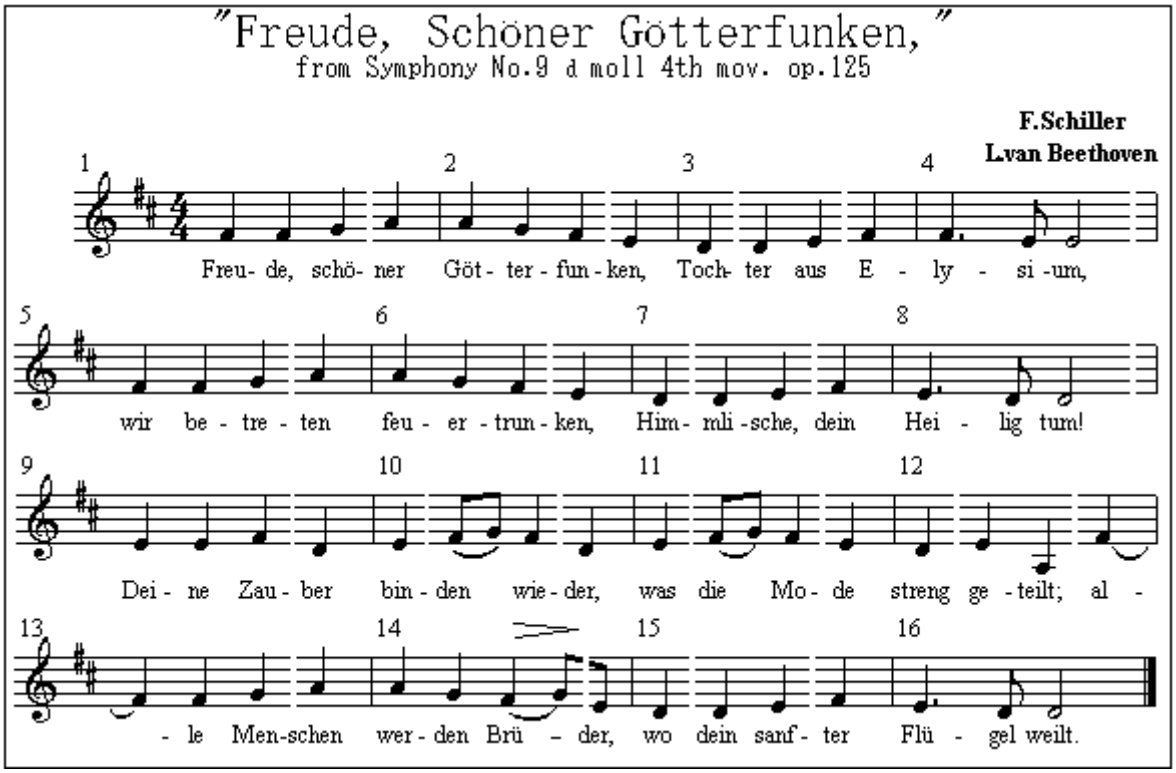
In short, top of figure 2, the stream of *Phraset* unit is fine and the melody line appears smooth. On the other hand, bottom of figure 2, *Phraset* is almost out of recognition. Slightly, break in red (light gray in monotone figure) actual sound part or in low tone range is shown, whole sound is uniform 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.

There is also the difference in formant of overtone (top blue part, dark gray in monotone figure). In bottom figure, every part is linear. In top figure, changing occurs accompanied with melody. That may cause the performance to be listened as childish. As I mentioned in my previous paper[4], the sound of good performance differs by the sound of overtones, not by the tone on the actual score. Even in these mechanical performances, good sound is recognized to be borne by correct *Phraset* analysis. Besides this, there are detailed *Phraset* analysis of "Freude, schöner Götterfunken" (from L. van Beethoven's Sym. No.9 d-moll Op.125 IV bars 241-256) and verification of comparison by sound spectrogram between two CDs (exemplary performance of Wilhelm Furtwängler with Bayreuth Festival Orchestra & Chorus[14] and another).
I would conclude the *Phraset* analysis's importance in a performance by the explanation of the relation between *Phraset* analysis and lyrics in the next example.

B. 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. These breaks of *Phraset* are not performed as can be recognized clearly, but the expression melody is determined by *Phraset* and the structure of the melody comes to have logicality. I explain how the logicality of the melody relates to lyrics.

I show example no.12 of *Phraset* analysis.



example no.12.; *Phraset* analysis of "Freude, Schöner Götterfunken",
correct sound source dai9a, incorrect sound source dai9-1

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 *Phraset*s 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.

The word of "schö-ner" is joined from the end of *Phraset*, at the 3rd 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 *Phraset*. Interest in the forward notes is raised once more by going to the next *Phraset* at once. And "E-ly-si-um" is completed as *Phraset* itself in the end of this phrase. If *Phraset* is completed in 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 2nd 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 3rd phrase, intention to join to "Al-le Men-schen…" is shown by several progressions to Fis. But another *Phraset* is divided on midstream of word not to complete every time. Stress is raised and lead to the 4th 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 4th phrase. Breaks of *Phraset*s are not matched to the breaks of the words similarly. *Phraset* 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 *Phraset*s 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 *Phraset* like this.

5. Conclusion

If someone doubts about this detailed analysis of note, the person must know nothing about performance. Players do not analyze by logic but think about more detailed change in the melody. Pianist does by fingering, violinist does by bowing and fingering, wind player does by breath, percussionist does by selection or handling of mallets and conductor does by movement of baton; players try to perform the most suitable sounds for the meaning they thought. Players add the intention of artistic expression to the sound. And players perform their intentions of artistic expression into the sound on the bases of logic that is gained through understanding for composer's intention.

Some players with little ability of basic analysis nor understand for composer's intention, are praised actually. It is so disappointing. I say nothing to audience that

evaluate 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 a wonderful performance. 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. Some players insist their characteristic interpretation as their own feelings. I don't want you to be impressed by their performances as cases where they are struggling with composers. The audience judge by the whole impression somehow. But players have duties to perform music based on correct understanding. I hope that this *Phraset* analysis will be rooted as a methodology for the understanding of music.

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