Dynamic Structures in Mozart's Piano Sonatas

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[Abstract – Besides their regular and conventional functions, Mozart's meticulous marking of dynamics in the piano sonatas often reveal unexpected phrasings and symmetries, as well as non-trivial structural features. Moreover a structure of dynamic properties within a significant musical unit may form a pattern which becomes itself an object of compositional operations, like inversion, extension etc.. These are exemplified by many music examples from the piano sonatas.]

If asked about the importance of dynamic markings in classical music, any musician, I guess, would think first and foremost of Beethoven. And rightly so, for dynamics is of prime importance in understanding and performing Beethoven's music in general and his piano sonatas in particular.[1] But dynamics is important of course in all music, not only in Beethoven, and in what follows I shall be concerned with some features of dynamics and its role in Mozart's piano sonatas.

Dynamic properties in music are the intensity of volume or loudness of a tone, a chord or a sequence of them relative to their surroundings. Intensity is not meant only in the measurable physical sense, but very often in the musical sense of emotional and inner tension and vitality.[2] In general, in classical music dynamic properties are usually considered to be properties of basic musical materials such as a single tone, a motive, a melody, a phrase etc. rather than musical objects or materials in themselves (a view we shall challenge). They are often notated with marks like "f","p", "cresc.", "dimin.", "sf" etc. But mostly they are determined by tradition, style, musical taste and understanding.

Sure enough, music has always been conceived and performed with dynamic properties, but their notation is quite recent. Though some dynamic indications occur sporadically since the mid-17th century (Gabrielli is credited to be among the first) their

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1 I expended on some features of the importance of dynamics in Beethoven, particularly as manifesting of what I call "second-order" compositional thought, in my *Beethoven Piano Sonatas - The first Decade*, Goryn private publishing, 2009 (goryn.book@gmail.com).

2 This has been often pointed out, and is emphasized e.g. in chapter 8 of Schenker's (unfinished) *The Art of Performance*, Oxford, 2000. A clear example of this expressive meaning of dynamic marks in Mozart is e.g. variation 11 of the 3rd movement of the "Dürnitz sonata" in D, K. 284, but the point is general.

regular use with more or less the current notation is not earlier than the late 18th century. Dynamic indications are notoriously indeterminate in that they don't specify "exact" volume levels.[3] These must also be determined in each case on the basis of knowledge of the style, close study and analysis, good taste and sensitive ear.

Dynamic Properties and Some of Their Functions

Dynamic properties and their marks are usually considered to be interpretive indications or even optional suggestions, which are not integral to the work and not constitutive properties of it, but rather concomitant to the basic materials. Sorts of stress and accentuation of various kinds of neighboring and grace tones, dissonances and their releases, as well as proper execution of cadences were extensively treated in treatises on performance (from e.g. C.P.E. Bach to the present). They are central parts of the conventional, stylistic and good taste wisdom alluded to above.[4]

I shall not talk of them here, but confine myself to dynamic properties expressly indicated by the composer. These, in spite of being among the most salient features of music and painstakingly indicated by composers, and though evidently important for a performance, are hardly ever considered real part of the compositional thought, and hardly ever dealt with in analysis. There are of course exceptions. A notable example is Schenker, as evidenced e.g. by his structural reconstruction of the dynamics in "Bach's Largo of Sonata 3 for Violin" (ch. 3 of *The Masterwork in Music*, *vol I*, Cambridge, 1994), and in "Prelude of Partita 3 for Violin" (ch. 4 ibid. Bach of course didn't leave any dynamic marks). He also claims there that "**Dynamics, like voice-leading and diminution, are organized according to structural levels, genealogically as it were**" (ibid. p. 37). In various other remarks (mainly on performance, e.g. of Beethoven's

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[3] People often assume some standard of exactness (usually physical, measured say in decibels). This seems quite arbitrary. It is not only that the standard can be improved on, but it can be apt in some contexts and not in others. I don't think that using e.g. dynamic notions in these other contexts is therefore inexact. But this is a large philosophical topic I won't go into here.

[4] Badura Skoda (2008) includes a chapter (2) on some performing features of Dynamics, but it concerns only notation and ways of its execution, which, as remarked above, are not my concerns here.

symphony in E-flat op. 55, in *The Masterwork in Music, vol 3*, Cambridge, 1997) Schenker made clear that he saw dynamics and other "performing properties" as integral to the tone structure of a work and of each significant unit of it, and occasionally he indicated the accord between dynamic marks and his structural analysis of a piece. He even boldly claimed that "**If [Beethoven's] Ninth symphony ... had ... come down to us without explicit indications, a capable hand would have had to enter the dynamic markings exactly as Beethoven himself did**" (H. Schenker, *Beethoven's Ninth Symphony* [1912], trans. J. Rothgeb, Yale Universit Press 1992, 10). But as far as I am aware there is no detailed analysis in his writings of existing, written down dynamic marks, and the above bold view was not taken up by most of his followers.

In subsequent analytic literature, references to dynamic properties are mostly rather general and casual. For example, discussing Chopin's Nocturne op. 27/1 in C# minor John Rink identifies the basic "dynamic levels" and says: "Chopin pours the Nocturne's entire potential energy into the dynamics, or at least represents that energy flux in microcosm within the dynamic markings" ("Analysis and (or) Performance", in *Musical Performance*, ed. J. Rink, Cambridge, 2002, p.48). This (and similar remarks), though apt, is far too general, and does not relate or explain the relationships between **specific** dynamic properties and specific features of the work. It is such specific relationships, particularly when they are somewhat unusual, that will concern me in the sequel.

Moreover, besides their own importance, dynamic properties may also give rise to structures and patterns, which are often I believe essential to the compositional thought and should be paid attention to in analysis. Some examples of this will be discussed later on. There is no pretension here to present anything like a theory or even to presume a systematic theory of dynamics, and the following is intended just as remarks on the topic.

Some Common Roles of Dynamic Properties and Structures

Let me mention at the beginning some obvious and common features and roles of dynamic structures. A dynamic structure is a sequence of (one or more) dynamic properties and their relationships within a work or a significant musical unit within it such as a phrase, theme, period, subject etc. The most common and apparent roles of these properties and structures are mainly in **enriching tone variety**, as in cases where subsequent phrases have different dynamic properties, or where the same motive or phrase is once piano and then forte (or vice versa), in **emphasizing a difference** or contrast between phrases or themes, and in increasing or decreasing **tension,** and in

building up musical **climax**. These are quite common and straightforward and hardly need specific mention. But dynamic properties and structures have further and more sophisticated roles. Let me mention some.

Dynamic structures are important for our **sense of a phras**e, where they may indicate the beginning, peak and ending of a phrase, or where a sequence of dynamic properties may indicate a period, or some other combinations or divisions of phrases.

Dynamic structures are also important for our sense of **symmetry**. This is of course connected to their above role in phrasing. Symmetry of units like phrases, periods and larger units, is often a rhythmic or melodic feature, but it is often expressed also by symmetry or other structures of dynamic properties. Not less important are deviations from dynamic symmetrical patterns, which often express intentional breaks of symmetry.

Dynamics in general and dynamic structures in particular are important to our sense of **rhythm** (especially of metre), and dynamic accentuations often determine the rhythmic structure, and intended deviations from it (as in various kinds of syncopation and syncopated patterns; see e.g. Mozart, sonata in G, K. 283, 3rd movement mm. 65-70). On the most elementary level the basic phenomenon of rhythm is the perceiving of a succession of beats as forming periods (in the physical sense), say of 3 or 4 beats per period (indicated by the denominator of the metre sign). The simplest way of bringing this about is by dynamic accentuations, say, of the first beat in each period (this is of course not a performing recommendation...).

Dynamic structures are obviously also important for the emotive **expressiveness** of music, and very often are the main features of this expressiveness. This is evident in almost any phrase. "Emotive" is meant here in a wide sense including not only emotions like sadness and joy but also moods, kinds of humor, attitudes like resoluteness etc. This is also the main function of dynamics in music that has been investigated (see e.g. ***).

Dynamic Patterns

As said before, dynamic properties are often considered to be concomitant and ornamental to the basic musical material, but they can also be essential and integral to the musical thought. Of special importance for our present concerns is that besides the above functions of the dynamic properties, they also give rise to **dynamic patterns** that emerge out of interrelations between dynamic properties and become themselves subject to compositional operations. Structure is a wider notion than pattern. Roughly, a pattern is a

structure that is a sort of a unit or object of compositional operations. I shall illustrate what I mean by discussing some such patterns in Mozart's piano sonatas later on. I begin by illustrating some of the above roles of dynamic properties in Mozart's piano sonatas. The distinction between dynamic properties and dynamic structures and patterns is not sharp. I shall not insist on it and present the following illustrations in one sequence.

In what follows I assume that the score is before the reader and will often refer to bar numbers. I shall indicate dynamic patterns by using "p" for piano and "f" for forte, indicating their length by a superscript, e.g. "p^n", where n is roughly the number of beats to which "p" refers.

As any good Urtext of Mozart's piano sonatas shows (I use S. Sadie's edition of the Associated Board of the Royal Schools of Music), Mozart was quite meticulous about dynamic markings,[5] and there is a copious of them, particularly in the early sonatas (up to K. 311. I shall use throughout the old Köchel numbering) and in the slow movements.[6]

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[5] In his (1992) Mercado writes: "A new attention to the expressive possibilities of the piano is evident throughout these sonatas in an unprecedented number of dynamic markings" (34). Regrettably he doesn't go into details or any sort of their analysis.

[6] For a rough idea, here are the number of dynamic marks in the middle movements of some of the sonatas (this is rough; it does not include double markings in the two clefs, which Mozart often wrote, nor initial fortes, which Mozart didn't write but took for granted).
Sonata in C, K. 279, 2nd movement: 86 marks (74 measures).
Sonata in F, K. 280, 2nd movement: 46 marks (60 measures).
Sonata in B-flat, K. 281, 2nd movement: 57 marks (106 measures).
Sonata in E-flat, K. 282, 2nd movement: 54 marks (72 measures).
Sonata in G, K. 283, 2nd movement (Andante): 43 marks (39 measures).
Sonata in D, K. 284, 2nd movement (Rondeau, Andante): 120 marks (92 measures).
Sonata in C, K. 309, 2nd movement (Andante): 95 marks (79 measures).
Sonata in A min, K. 310, 2nd movement: 90 marks (86 measures).
Sonata in C, K. 330, 2nd movement: 40 marks (64 measures).
Sonata in C min, K. 457, 2nd movement: 110 marks (57 measures).
This makes in average more than one dynamic mark per measure.

Just for comparison – Beethoven's slow movement of his "Tempest" sonata (op. 31/2), which is relatively rich in dynamic marking, contains 65 dynamic marks (including forks, which Mozart did't use) on 103 measures.

With the later sonatas hardly any autograph survived and many first editions were published after Mozart's death. This may explain the relative sparseness of dynamic marks. They are also relatively sparse in his piano concerti, possibly because these were performed, during his life time, mainly by himself.

They are of course of great importance to the performer, who should study them carefully, interpreting each in its context.[7] Many of them are quite conventional and bear simple relationships to structural features of the piece concerned. I concentrate here however on those that may at first sight appear somewhat irregular and even surprising (sometimes for sheer amusement; e.g. sonata in A, K.331, 1st movement, m.28). They often break routine phrasing and symmetries, bringing others to the fore, and contributing to the emotive expressiveness.

I turn now to some examples (with no pretension to exhaustion).

Special Effects on Phrasing and Melodic Line

1) Consider the recapitulation in the first movement of sonata in C, K. 279. In bars 62-67 Mozart modulates to the dominant, preparing the second subject in the tonic.

Example 1: Sonata in C, K. 279, first movement, mm. 60-68

Bars 64 and 65 are diminished sevenths to D and C, they have a similar texture and similar harmonic rhythm (which accelerates in bar 66 where the texture also changes). On the basis of these similarities and for reasons of symmetry they might therefore be expected to have the same dynamics. But they do not! the first is explicitly marked piano and the second forte, which lasts for another two bars. On the face of it this forte might seem quite strange and unmotivated. However, it is motivated by a higher melodic factor: It starts a chromatic descent in the upper voice from A^2 (m.61) to D^2 (m.67). The forte in m. 65 clarifies that A-flat belongs to this descent, which the previous bar (marked piano) does not. This descent in the recapitulation is a full chromatization of the chromatic hints in the sequence of appoggiaturas in mm.5-8 of the exposition, which is a major the.0matic element in the movement. So, the dynamics here manifests a break of symmetry and shaping the phrase in a non-trivial, thematically significant way.

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[7] In a letter of 14 November 1777 written from Mannheim Mozart wrote of the Andante of the sonata in C, K, 309: "The Andante will give us the most trouble, for it is full of expression and must be played accurately and with exact shades of forte and piano, precisely as they are marked (Anderson (ed.) *The Letters of Mozart*, London). "Us" in the first sentence probably refers to his working with Rosa Cannabich on it. Mozart loved that movement. He said that he tried to portray Rosa in it, and that he, and everybody else, agreed that he succeeded. Rosa, the daughter of a composer/conductor and Mozart's friend, was then 15 years old and apparently a good pianist (Mozart composed another sonata in Mannheim (K. 311 in D), but the letter apparently refers to K. 309).

2) For another example of the melodic effect of dynamics consider the development section of the first movement of sonata in D, K. 284. Bars 60-66 consists of the upper emphatic descending fourth, D^2 - C^2 - B-flat^2 - A^2, taken from and augmenting the descending fourth of mm. 24-5, 33-4 etc.. But the "f"s in the middle voice of mm. 61, 63, 65 suggests hearing it together with the contrapuntal line of E# - F# -D# - E - C# - D, taken from and augmenting mm. 34-5 of the second theme.

Here we have dynamic merge of separate lines. For an almost opposite effect of dynamics separating a continuous line consider the "Cannabich sonata" in C, K.309, 1st movement, mm. 103-108. The first quarters of mm.105, 107, are emphasized with forte moving from diminished E (105) to F_{min} (106), and from diminished F# (107) to G. The high D-flat in the first and the high E-flat in the second, though belonging to the continuous flow of the melody, are marked piano, which have a particularly strong expressive impact.

3) As another example of the bearing of dynamic markings on phrasing and melodic line consider the 2nd movement, Adagio, of sonata in F, K. 280. The second subject in A-flat (mm. 9-21) consists of three phrases (4+4+4), each with a different dynamic pattern.

Example 2: Sonata in F, K. 280, second movement, mm. 6-19

The second phrase (mm. 13-16) has a simple dynamic symmetry: [f^2-p^2-f^2-p^2] with a slow even harmony of one chord per bar (the superscripts over dynamic marks indicate the number of basic beats – 3/8 in this case – to which the dynamics apply). The first phrase (mm.9-12) could be expected to be likewise dynamically symmetric, but it is not. It is marked piano (m. 9), then forte (m. 10) which lasts for two bars, and then piano (m. 12): [p^2-f^4-p^2]. Its harmonic pace is also twice as rapid. Dynamic symmetry could not only be expected of the first phrase by analogy with the second, it is also suggested by its own rhythmic pattern in which mm. 11-12 are analogous to mm. 9-10. But dynamically, Mozart breaks this simple symmetry at m. 11, continuing the forte of m. 10. This, which might seem quite surprising, is called for by the melodic line of mm. 10-12 and its harmony: B-flat - C^2 - D-flat^2 - F^2 - A-flat - G with the harmony (on A-flat): I^4 - V - I^4 - IV^6 - II^6 - I^4 - V. The dynamics there indicates the phrasing Mozart wants for this line. The same occurs in the reprise (mm. 43-46). The third phrase of the second subject (mm. 17-21), which brings us back to the tonic A-flat is of yet a simpler dynamic pattern [p^4-f^4]. Here with each of the three phrases the dynamic pattern becomes simpler and more symmetric, which exemplifies treating the dynamics as an autonomous musical element.

4) Dynamic marks are often particularly instructive in overlapping phrases, i.e. when a phrase begins on the same note or chord that its predecessor ends. Often there is a dynamic difference between the phrases. Should we then play the overlap in the dynamics of the beginning phrase or in that of the ending one? In general (though there are many exceptions) Mozart takes the second option and marks it as the beginning of the later phrase. But to see some of the problems here consider for example the first movement of the A minor sonata K. 310. The ending theme of the first subject group is clearly marked forte as beginning with the dotted G on the second quarter of bar 16, thus forming a sort of an upbeat pattern. The first quarter there is the ending of the previous calando and should be piano. Mozart marks forte there only for the left hand, clearly indicating that the right hand is still piano.[8] However, in the recapitulation of that theme (m.97) the forte is on the first quarter (both hands), forming a downbeat pattern. This might at first look like a slip or editorial mistake, for in the immediate repeat of it (m. 99) the original upbeat pattern returns and the dynamic change is on the second quarter, thus suggesting once again that the dotted quarter is the beginning of the theme. This, just as in mm. 16, 18 of the exposition, clearly disambiguates the first quarter E (m. 99) as the ending of the preceding calando phrase, not the beginning of the later one.

However, this is not so simple. Not only is the downbeat pattern an obvious variant of the dynamic and rhythmic pattern of the main theme of the first subject, it is also the motivic kernel of the middle section of the development (mm. 58-70)**,** which alternates fortissimo and pianissimo marks, all on the downbeat pattern of that motive. In all of them the overlapping quarter is in the dynamics of the later phrase– again in both hands (mm. 58, 62, 66). It appears then that the downbeat pattern in the recapitulation cannot be dismissed as an editorial mistake, but rather that the ambiguity between the two patterns is intentional, and brought to the fore in this passage in the recapitulation.

Special Effects on Symmetry

5) In the first movement of the above K. 279 we have an example of a dynamic consideration, which brings forth a new symmetry. The second subject is introduced piano (m. 20), which lasts for four bars including the descending sequence in mm. 22-23,

[8] This is a good example not only of his treatment of overlapping, but also of the care with which Mozart handled his dynamic marks. Other examples of the same kind are Sonata in B-flat K. 281, 2nd movement, mm. 55, 83; Sonata in E-flat K.282, first movement mm. 7, 24, 25. But there are many more.

until the forte in m. 24. However in the recapitulation of this subject, this sequence (mm. 76-78. which parallel mm. 22-23) is marked forte (which should begin on the high E of m. 76). The apparent reason for this change is that Mozart maintains here the dynamic structure of the exposition in which the main theme of the second subject is piano and should come after a forte. Since in the recapitulation (unlike the exposition) the theme recurs in the lower register (mm. 78-80) it requires, according to the above structure, forte in the preceding descending sequence. Thus a dynamic symmetry of [p^8-f^8-p^8-f^8] emerges in the recapitulation of the second subject, which is lacking in the parallel place in the exposition.

6) The second movement − Andante amoroso − of sonata in B-flat, K. 281 is a sonata-form movement in E-flat, and we shall focus on the second subject (from m. 16). Unlike the first subject it is very symmetric. The eight measures 16-23 are two couples of hypermeasures (a metrical unit bigger than a measure − two in our case), call them A and B, each of which begins forte. The second hypermeasure (mm. 18-19) of A begins forte like the first, but its ending is marked piano, which dynamically breaks the hypermeasure and makes its second half sound like an upbeat to the next couple of hypermeasures, B, beginning at m. 20. In the recapitulation the second hypermeasure in the parallel place (mm. 76-77) is all forte, as could have been expected in the exposition as well.[9] It is then extended by another modulatory hypermeasure (mm. 78-79), whose ending (m. 79) is again marked piano as an upbeat to the next hypermeasure, as in the exposition. What we see here again is that Mozart maintains the dynamic-structure of the exposition, to the effect that the second couple of hypermeasures, B, should be prepared by a piano upbeat. This, because of the inserted modulatory hypermeasure in the recapitulation, causes continuing the forte of the second hypermeasure of A all through. The dynamic extension (of the forte in mm. 77-8) accords with the phrase extension. Incidentally, the [p^2-f^2-$p^{2]}$ pattern of the main subject, with Mozart's "cresc", "decresc" marks (2, 4, 60, 62, the first in the sonatas) is an example of the effect of dynamics on the phrasing he had in mind.

7) We talked above of dynamics as forming a new symmetry. We find a somewhat similar care for dynamic symmetry in the 2nd movement, in F − Andante cantabile − of the sonata in A minor K. 310. The first subject consists of two sub-parts. The second part begins (m. 8) piano with an ascent to the dominant from which it descends in crescendo back to the tonic F (10). In the recapitulation, in the parallel place, Mozart modulates

[9] Some editions mark it this way in the exposition as well.

(through B-flat, G and C) to the second subject in the tonic. The dynamic pattern (of this second part) is then changed − it begins forte (m. 61) and forms throughout the modulation (mm. 61-67) a symmetric pattern of [f^3-p^3-f^3-p^3-f^3-p^3].

Structural Role

8) Dynamics also has an important **structural** role. Some aspects of it are quite regular and need no special mention. We are all too familiar for instance with the somewhat superficial conception according to which in classical sonata form first subject is strong and "masculine", and second subject is soft and "feminine". This, to the extent it is valid, is an obvious structural feature of dynamics. Various further specifications may then be regarded as diminutions of this large structure. In many cases in Mozart such "dynamic levels" analysis is apt and illuminating, but we can't go into it here. The structural role I wish to point out here may serve as example and concerns "**bridge**" themes connecting the first and second subjects. Mozart often introduces the second subject straightforwardly without any bridge theme (e.g. first movements of sonatas in F K. 280, in B-flat K. 281, in G K. 283, in D K. 284, in A minor K. 310, in D K. 311, in F K.332), but sometimes he does insert a bridge theme. In some cases a question can even arise as to whether it is a bridge theme or rather the beginning of the second subject group, and the dynamics can be an important clue. Take for instance the first movement of the sonata in C, K. 279. Bar 16 begins a new theme with a new texture and is naturally often played piano − in contrast to the preceding forte − as if it begins the second group.

Example 3: Sonata in C, K. 279, first movement, mm. 15-17

But this is a mistake. There is no explicit dynamic mark there, suggesting that Mozart did not want such a change of dynamics. And indeed, it is a bridge theme that continues the previous forte of m. 14 (cf. m. 70 of the recapitulation), and gradually leads to the second subject in m. 20, which is marked piano. The dynamics here is an important element in keeping the continuity with the ending of the first subject, gradually passing into the second subject, thus shaping the bridge theme as incorporating a continuous and gradual change of dynamics leading to the second subject.

9) Another, and perhaps more interesting example of a similar effect is the Andante (2^{nd} movement) of sonata in G, K.283

Example 4: Sonata in G, K. 283, second movement mm. 3-10

Measure 5 may sound as if beginning the second subject, and is accordingly played by many pianists piano. But it is a bridge theme (or a second theme of the first subject

group) beginning on the tonic and leading to the second subject on the dominant in m. 9 (forte). And indeed once again Mozart doesn't change the dynamics in m. 5 and it should begin forte continuing the previous one (cf. again m. 28 of the recapitulation). It is again a continuous transition between the subjects, and its character as such is clearly suggested by Mozart's dynamics. Fluency and continuity are all important in this Andante, and many other features of the dynamics there contribute to them, such as the forte in m. 7, which, fading up to piano, prepares the similar beginning of the second subject in forte.

10) For a somewhat similar case consider the third movement, Allegretto, of the later sonata in C, K. 330. The first subject ends in a full cadence in forte in m. 20. Then comes a quite long new theme in a new texture with rich dynamics that might appear on first hearing as the second subject. It is a period of 8 bars, with a suffix of 4 bars, which one could expect to begin piano (as many play it). But in fact it is a bridge theme to the second subject which begins at m. 33 in the dominant. And again, at the beginning of this bridge theme Mozart does not mark any change of dynamics and one should continue the previous forte, which makes this theme a quite sophisticated continuous transition to the piano of the second subject. The printed dynamics in the rest of this theme is interesting in itself, but its authenticity may be questioned and we shall not go into it here.

Operations on Dynamic Patterns

In all these we see that besides their "standard" roles as concomitant properties enriching the tone quality and the expressiveness of the music, the dynamic marks indicate non-trivial structural features, and support particular phrasing and symmetries, as well as deviations from standard or expected ones. However, in addition, dynamic properties give rise to certain **dynamic patterns** which become themselves subjects of compositional operations. Let us look at some examples.

11) Consider the 2nd movement of the "Dürnitz" sonata in D, K. 284. It is a rondo, where each of the refrains is a variation on the main theme, and the second episode is basically a transposition of the first. (The slow movement of the sonata in C, K. 309 has a somewhat similar form.) The main subject begins with two phrases, the first half of each is forte and the second piano, thus forming the pattern [f-p-f-p] (mm. 1+2, 3+4).

Example 5: Sonata in D, K. 284, Second movement mm. 1-5

This pattern repeats (with a slight change we shall not go into here) in mm. 9-12. But in the first refrain (mm. 31-34) Mozart reverses the dynamics − the first half of the motive is piano and the second is forte (doubled with octaves), and we get the pattern [p-f-p-f].

Example 6: Sonata in D, K. 284, second movement mm.29-36

Still in the refrain, when the motive recurs with slight variations (mm. 39-42), the original dynamic pattern is restored, and in this original pattern it recurs in the second and last refrain (from m. 70). The same musical material (melody, harmony, rhythm) is molded in a certain dynamic pattern, which is reversed and then restored. The dynamic properties here are not just concomitants to the melody, but form a dynamic pattern which is itself operated on. This observation gains more significance when we realize that it is not the only case in the movement in which this happens: Bars 5-6 each begins piano and ends forte, thus forming a pattern of [p-f-p-f]. But in the refrain their parallel bars (mm.35-6) reverse the pattern to [f-p-f-p]. (For more details see the graph at the appendix.)

It appears that these plays with dynamic patterns, though very simple, are not merely ornamental, but integral elements of the compositional thought of the movement. The movement is governed by the idea of little variations on its main theme. In the main subject the theme recurs with a variation, and each of the refrains is another variation on it. Reversing the dynamic pattern (of the same theme) is another variation, and thus fits in the general character of the movement.

12) In the third movement of this sonata (K. 284), which is formally a theme and variations, there is an interesting play with dynamic patterns. The first half of the theme is a classical symmetric period, the first phrase is piano and second phrase forte. In the second half, this nice symmetry is broken and the dynamics also becomes more multifarious. The profile of the dynamics of the Thema is approximately: p^8-f^8:||p^3-f^2-p^4-f^5-p^2-f^3:|| (the beat is a half). It is worth noting that this quite complicated structure is generally maintained in most of the variations (deviations can be naturally explained by the character of their variation). A peculiarity that deserves attention is the very ending phrase (mm. 13-17), which repeats the first phrase with the ending of the second (in the tonic) but with a different dynamics − [f^3 - p^2 - f^3]. Unlike the subject, it begins forte, and the piano occurs quite surprisingly on the strong chords of II^6 and V^7. The reason appears to be that forte is kept for the ending cadence, which comes immediately after.

The dynamic pattern of the first half of the theme is generally maintained in the variations (except for the last two, which are special in many ways), but not that of the last phrase of the second half: it is maintained in some (e.g. 1, 3, 5), but not in others (e.g. 2, 4, 6, 7. 9, 10). In most of these cases the middle piano is deleted and the phrase goes through in forte. In variation 7, which is a Minore ending in piano, the dynamic pattern of

the ending is reversed [p - f - p], and var. 9 also ends piano. The reasons for these piano endings are fairly clear and they dictate changing the pattern they belong to.

13) For another example of playing with dynamic patterns consider the second movement of the "Cannabich" sonata in C, K. 309. The movement is again a sort of a rondo, where each refrain repeats the subject with subtle variations, which is also the case with the second episode in relation to the first. The first half of the main theme ends forte (mm. 3-4) and the second half begins piano.

Example 7: Sonata in C, K. 309, second movement, mm. 1-4

This pattern is retained in most of the refrains of the subject. It changes however in mm. 19 and 20.

Example 8: Sonata in C, K. 309, second movement, mm. 17-22

Bar 19, which parallels m.3. begins, like m.3, forte, but, unlike m.3, changes in the middle to piano. Bar 20, which parallels m.4, has a surprising forte in the middle on the upbeat to F in m.21. This change of dynamic pattern, unless it has a reason that escaped me, is perhaps more in the service of variegating the texture of this repeated theme (somewhat like the change of piano at the end of m. 15 to forte at the end of m. 31).

14) Another example is in the first movement of sonata in D, K. 311. The closing section of the second subject (from m. 28) begins with a double period of two bars piano (mm. 28-29) answered by two bars forte (mm. 30-31, and again in mm. 32-36), thus forming the symmetric pattern [p^8-f^8- p^8-f^8].

Example 9: Sonata in D, K. 311, first movement, mm.27-32

In the development the very same double period (in the subdominant G) appears with the dynamics reversed: two bars forte answered by two bars piano [f^8-p^8-f^8-p^7] (mm. 58-65). The original dynamic pattern of our period in the second subject is restored in the recapitulation mm. 91-98.

Example 10: Sonata in D, K. 311, First movement, mm. 54-61

This is an obvious playful operation on the dynamic pattern over the very same material. A reason for this seems to be that the former leads to the dominant and the latter, being part of the development, to the sub-dominant, and that Mozart wanted the latter to end piano in contrast to the forte of the new passage of m. 66. The recapitulation, incidentally, is also in reverse order, but of subjects: the second subject comes first (m. 78) and the first subject (abridged) – second (m. 99).

15) A more condensed example of a similar move is in the second movement of the same sonata where a sequence of three descending thirds occurs in [f-p-f] pattern (mm. 29-31), and immediately after that in a reverse pattern of [p-f-p] (mm. 33-35).

Example 11: Sonata in D, K. 311, second movement, mm. 26-35

Same is repeated in mm. 65-71.

Another example of a similar move – a change of dynamic pattern over the same material – is in the much later Fantasy in c minor K. 475, mm.174-5. The surprising piano at the second quarter of m. 174 serves to prepare, by contrast, the forte of the deceptive A-flat at the bass of the third quarter. In m. 175 the same notes (an octave lower) go through in forte up to the c minor – for there is no deceptive A-flat in the bass.

16) For the bearing of dynamic patterns on symmetry consider the first movement of sonata in E-flat, K.282. The first subject is patently non-symmetric (which is somewhat balanced by the almost banal symmetry of the beginning of the second). It has an introductory phrase of 3 bars forte, followed by a phrase of 5 bars with a rich dynamic structure. This last phrase is (surprisingly) symmetric, consisting of two sub-themes of two and a half bars (10 quarters) each. The first, (a), from m.4 to the first half of m. 6. The second (b) from the second half of m. 6 to 8. Dynamically (a) is "more symmetric" than (b), being $[p^2\text{-}f^2\text{-}p^2\text{-}f^2\text{-}p^2]$, equally distributed over the 10 quarters, while (b) is $[p^4\text{-}f^2\text{-}p^4]$ non-equally distributed over 10 quarters.

Example 12: Sonata in E-flat major, K.282, first movement mm. 1-9

The parallel passage in the development is also of 5 bars (mm. 22-26) and restores the dynamic symmetry: $[p^2\text{-}f^2\text{-}p^2\text{-}f^2]+[p^2\text{-}f^2\text{-}p^2\text{-}f^2]$ equally distributed over 16 quarters plus a long piano over 4 quarters at the end as in the exposition.

Example 13: Sonata in E-flat major, K.282 First movement mm. 21-26

The change is that whereas the second half of m.6 is piano, that of the parallel m.24 is forte. Evidently, there is a harmonic reason for that, for this forte comes on a V^7 on the way to a diminished VII of the dominant in the second half of m. 25, whereas the parallel place in the exposition (second half of m.6) is a minorization whose surprising effect is enhanced by the piano there, which breaks the dynamic symmetry. On this basis, the dynamic pattern in the later passage restores symmetry where the parallel passage in the exposition lacks it.

17) Another aspect of dynamic patterns I would like to mention here is what may be called "**dynamic rhythm**" − the rate of change of dynamic properties per beat (or per

bar) within a significant musical unit. In many cases Mozart intensifies this rhythm towards the end of, say, a phrase, a theme or subject, or even an entire section.[10] See for example the Andante of the G major sonata K. 283. Throughout the movement the dynamic tempo is rather slow and even, where a dynamic property is of about 8 quarters (compare it to the highly intense dynamic tempo of the second movement of the following sonata K. 284). It slightly speeds up towards the end of the exposition. The second subject (mm. 9-14) is already [f^4-p^4-f^3-p^3-f^3 ... p^2-f^2]. In the development (mm.14-23), from the second half of m. 19 it further intensifies to [p^4-f^2-p^2-f^2-p^1-f^1-p^1-f^1-p].

***

I hope these examples suffice to show that dynamic properties in Mozart's piano sonatas, besides their other functions, have various compositional roles which are features of the organic structure of the work. Besides their conventional, variegating and expressive roles they bear on compositional features like phrase-structure and considerations of symmetry. Moreover, they can form dynamic patterns, which are themselves subject to various operations, and thus become components of the compositional thought. Although in the above I have not gone into general analysis and have not presumed a specific analytic theory, I would surmise that in any theory, full analysis should account for dynamic features (properties and patterns) and explicate their relationships to other features − expressive, narrative and dramatic, as well as those of a more structural nature like melody and thematic relations, phrase-structure, harmony, form, group-hierarchies etc.

This, may I add, has an important corollary for analysis. Theorists and performers alike have often said that performance should rely on thorough analysis, and in a way reflect it. Analysts from Schenker to Rothstein[11] give quite detailed performance instructions based on analysis.[12] This close relationship between features of performance

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10 Compare W. Rothstein's remarks in his (1989) pp. 22-25 on the acceleration towards the end of a phrase (the first period of Mozart's K.331), though he doesn't speak there of dynamics.

11 Many remarks in Schenker's *Der Tonwille* (A. Guttman, 1910-24; repr. Golms, 1990) and The *Masterwork in Music* (Cambridge University Press, 1994-7) as well as in his edition of Beethoven's Sonatas are clear testifiers. For W. Rothstein, see also e.g. his "Analysis and the Act of Performance", in Rink ibid. 1995). cf. also W. Berry, *Musical Structure and Performance*, Yale University Press, 1989.

12 Some notable performers, e.g. Murray Perahia, are well known for their analytic orientation. Schenker's analyses are known to have a deep influence on the performances of W.

and analysis is often conceived one-sidedly, as performance being informed by analysis. This has been the dominating attitude since Schenker to contemporary analysts like Berry, Narmour, Lehrdall and many others. It naturally has its opponents, and the relationships between analysis and performance has recently become a live topic.[13] Our case, though distinct from this topic, is particularly interesting in this context, for it is a sort of in-between case. Dynamic marks, which are often considered "merely" performative instructions, are constituents of the work itself determined by the composer. As such they cannot be lightly regarded, as suggested by the "merely" above, but, as we have tried to argue, are integral constituents of the composition (which become objects of performance not less than the notes). Moreover, the analysis/performance link, which has been so often read one-sidedly from analysis to performance, can naturally be read in the other direction. For it also implies that at least when a master like Mozart is concerned, a particular analysis can be tested by his performance indications such as those of dynamics. An analysis should account for and make sense of these instructions, or at least be in concord with them.

Gilead Bar-Elli, Jerusalem, August 2014

Furtwängler. For a detailed exposition of this with regard to Beethoven's Ninth, see N. Cook (1995, 105-125).

[13] A helpful survey, with many references to the literature is N. Cook (1999). Cook advocates a simultaneous dialogue relationship, where analysis is informed by performance not less than the other way around.

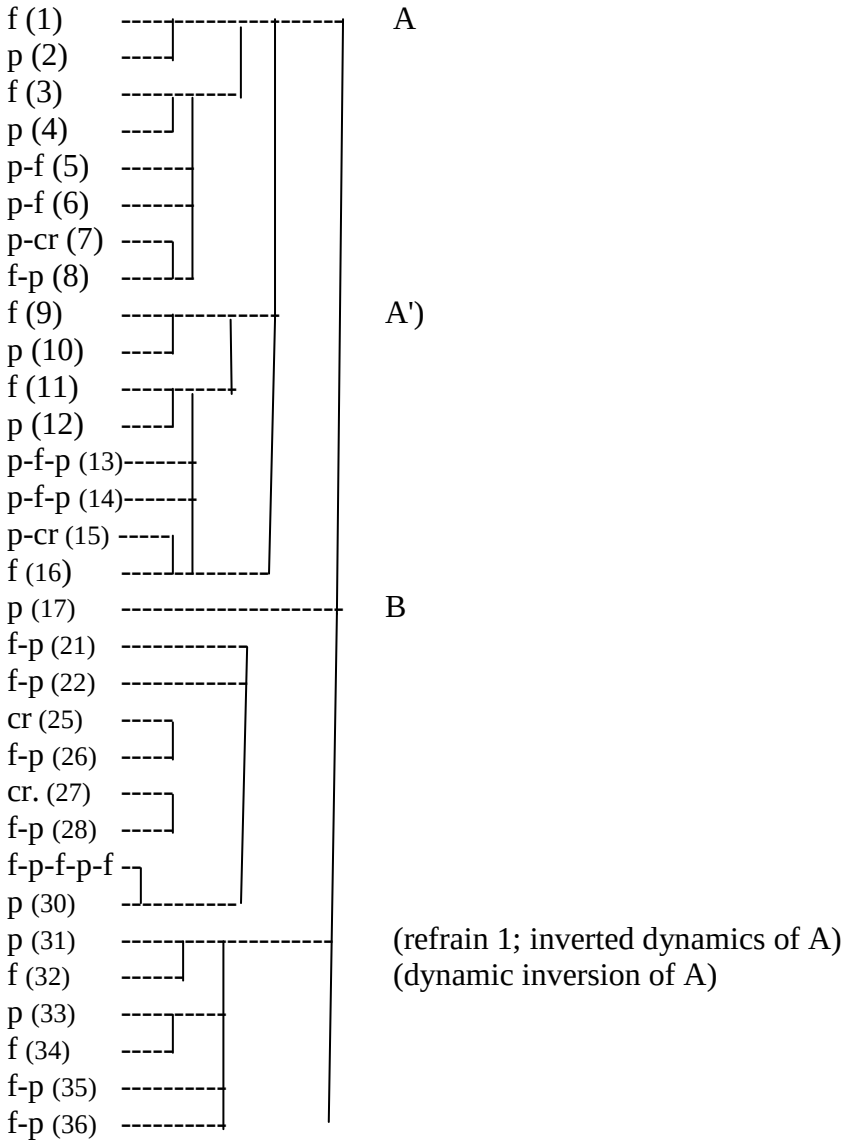
Appendix: "Dynamics Level-Graph" (of Mozart Sonata in D. K. 284, 2nd Mv)

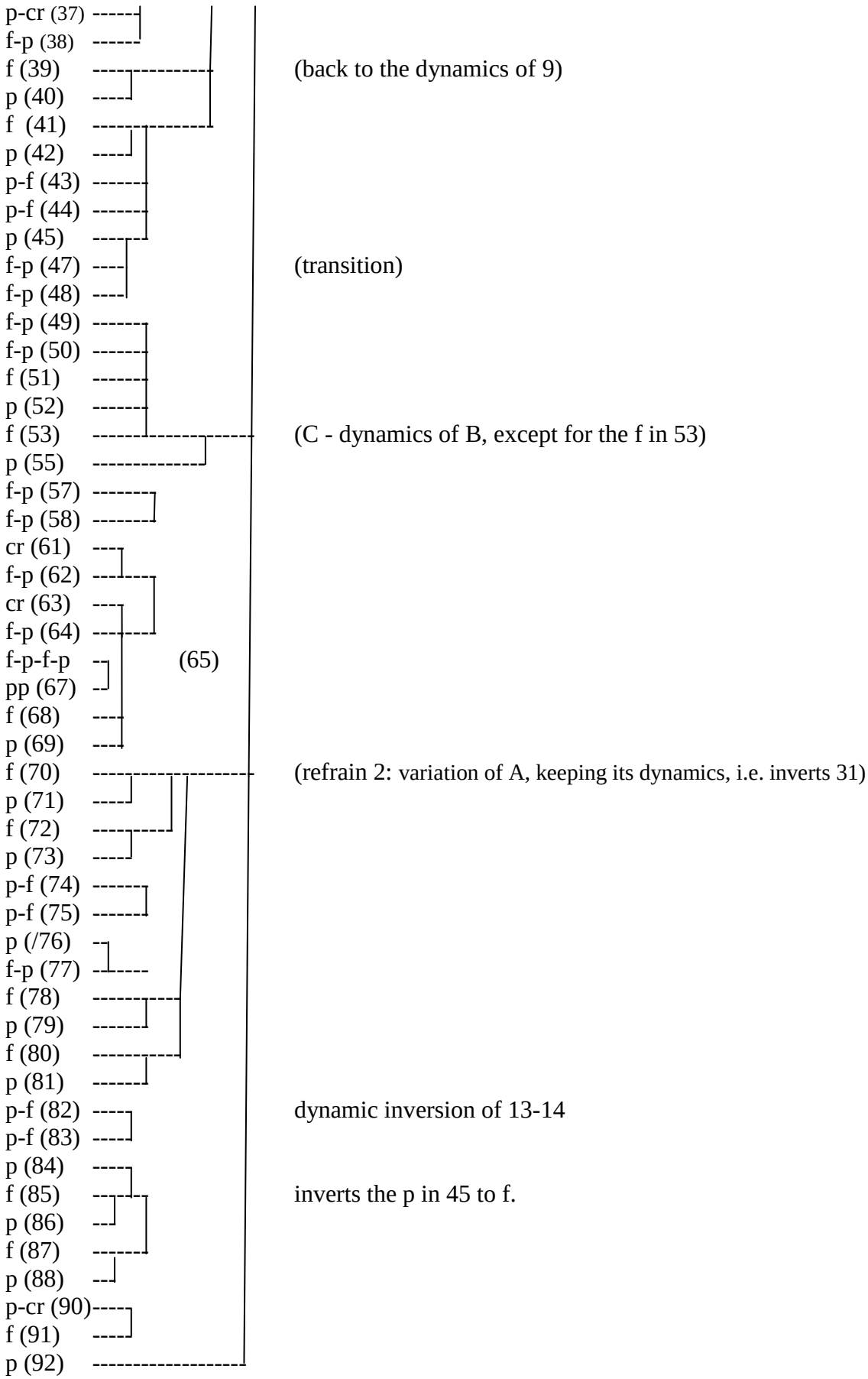
Mozart entitles the second movement of the sonata, which is in A major, "Rondeau en Plonaise". Its rondo structure can be generally described thus:

A - [mm.1-16] (The theme, divided to two parts in m. 9 (A'))
B - [mm.17-30] (episode 1 in the dominant E)
A' - [mm.31-46] (refrain 1 - a slight variation on A)
Transition - [mm.47-52]
C - [mm.53-69] (episode 2 almost the same as B transposed to the tonic A)
A" - [m.70] (refrain 2 - a more elaborated variation on A)

The dynamic structure of the movement can be represented by a "Graph" in which various levels of dynamic relations are indicated (levels are roughly represented by lengths of horizontal lines. Related marks in the same level are represented by vertical lines. A dynamic mark can, and usually will, belong to more than one level. Thus, the first (uppermost) f is related to p in m.2 (by motivic structure), in a deeper level – to f in m.3 (by melodic line), in a still deeper – to f in m.9 and (by structure of the theme), then in a still deeper one – to p in m.17 (by structure of the Rondo).

Roughly, part of the dynamic structure can be partially represented thus:




p-cr (37)
f-p (38)
f (39)
p (40)
f (41)
p (42)
p-f (43)
p-f (44)
p (45)
f-p (47)
f-p (48)
f-p (49)
f-p (50)
f (51)
p (52)
f (53)
p (55)
f-p (57)
f-p (58)
cr (61)
f-p (62)
cr (63)
f-p (64)
f-p-f-p
(65)
pp (67)
f (68)
p (69)
f (70)
p (71)
f (72)
p (73)
p-f (74)
p-f (75)
p (/76)
f-p (77)
f (78)
p (79)
f (80)
p (81)
p-f (82)
p-f (83)
p (84)
f (85)
p (86)
f (87)
p (88)
p-cr (90)
f (91)
p (92)
(back to the dynamics of 9)
(transition)
(C - dynamics of B, except for the f in 53)
(refrain 2: variation of A, keeping its dynamics, i.e. inverts 31)
dynamic inversion of 13-14
inverts the p in 45 to f.

The remarks on the right indicate some examples of operations on dynamic patterns, which could be represented e.g. by curves (not included here). The graph is partial and not meant to be strict. It can be completed and changed in various ways according to various analyses of the dynamic structure. The point is that by such graphs (or similar ones) dynamic levels and relations within a level may become transparent.

Not surprisingly we see close correspondence between the main structure of the Rondo and its dynamic structure. Moreover, as elaborated in the text, Mozart often "plays" with dynamic patterns, e.g. by inversion (cf. 1-6 to 31-36), by other changes (cf. last quarters of mm.5, 6 with those of mm.13,14; m.17 etc. with m.53 etc.), or by keeping it and variegating the melody it is attached to (e.g. m.70). In between the large dynamic poles there are various dynamic diminutions of various levels represented here by the lengths of their horizontal lines. Needless to say, the above is a rough sketch, and intended just to give an idea of the dynamic level-structure and relations, illustrating some of the points in the text.

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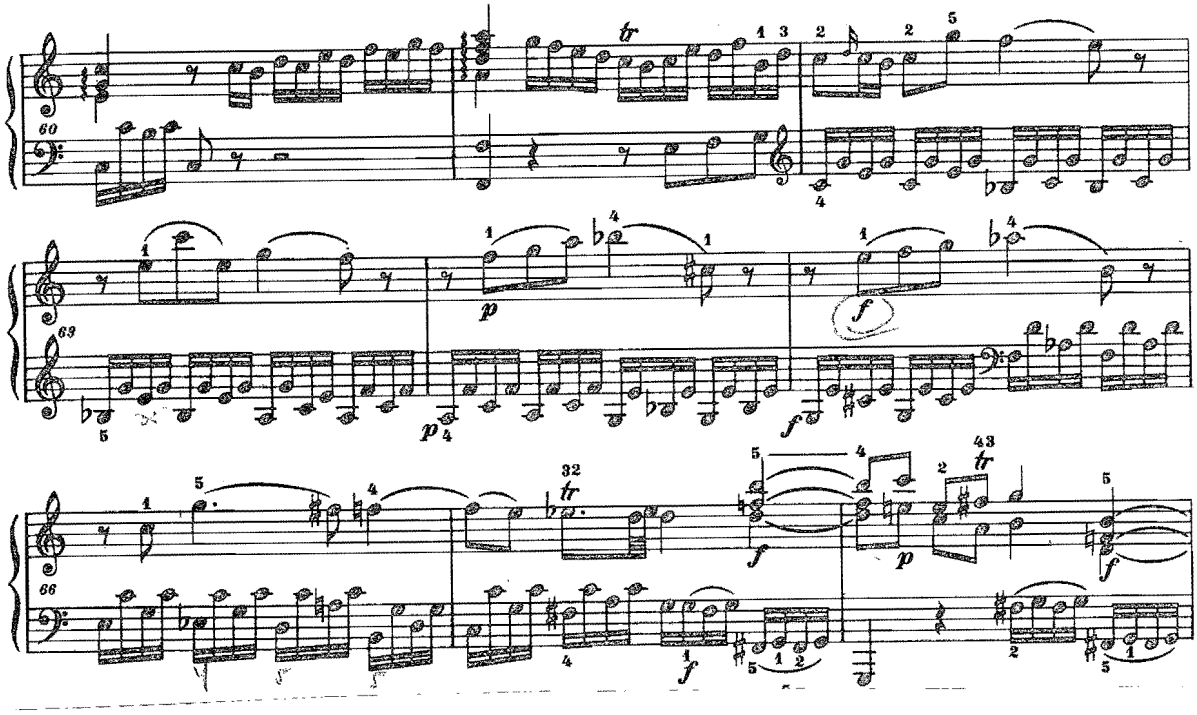
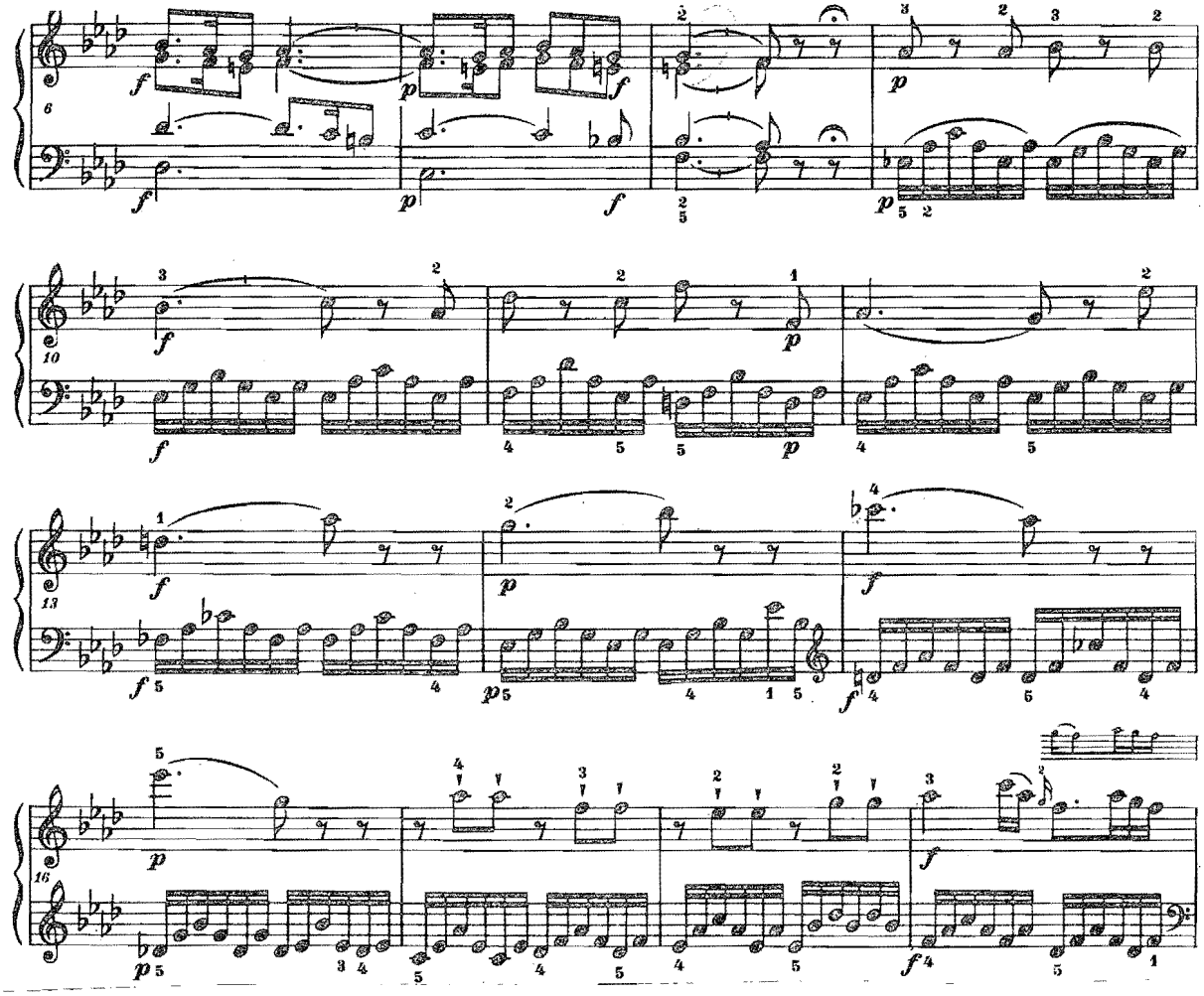
Dynamics in Mozart's Piano Sonatas - Examples

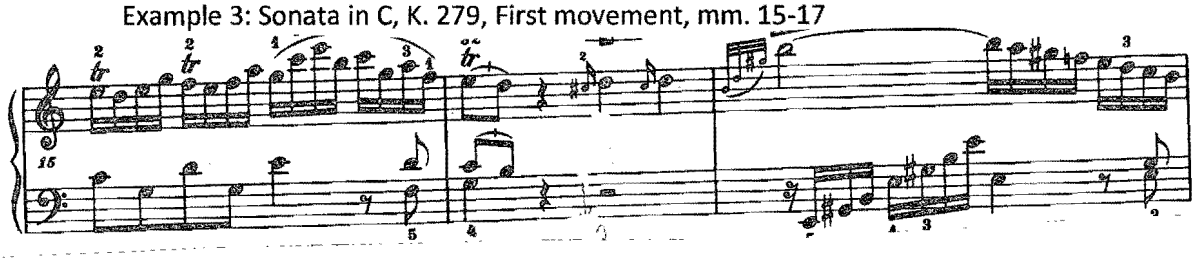
Example 1: Sonata in C, K. 279, First movement, mm. 60-68



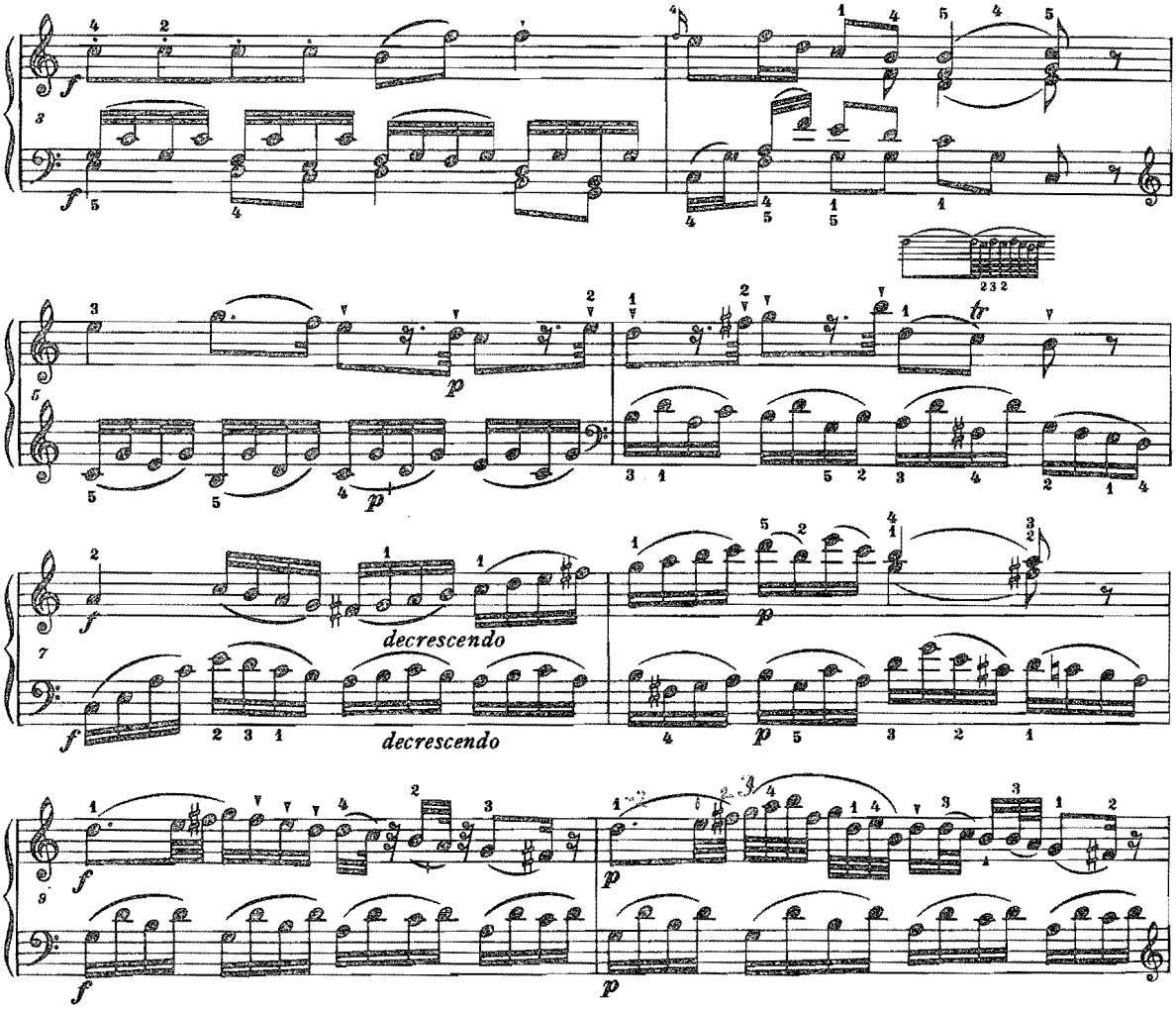
Example 2: Sonata in F, K. 280, Second movement, mm. 6-19



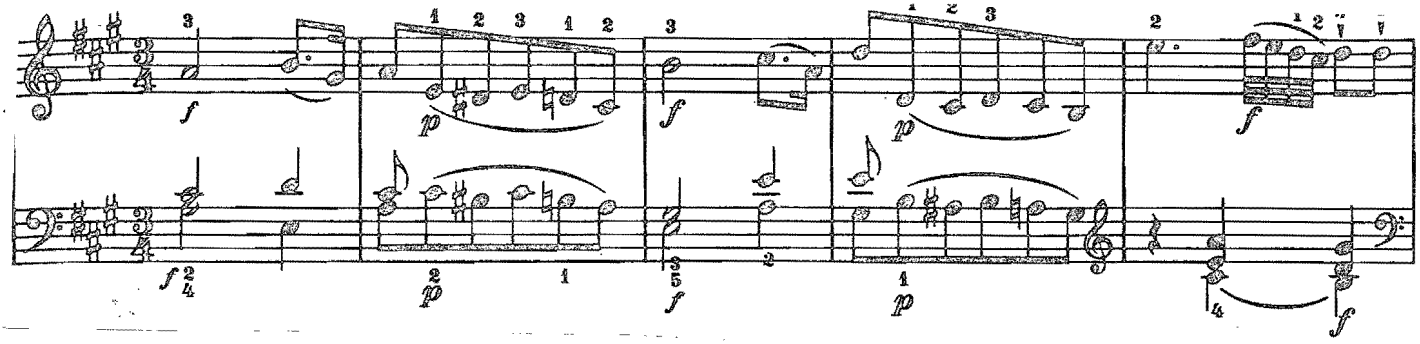
Example 3: Sonata in C, K. 279, First movement, mm. 15-17



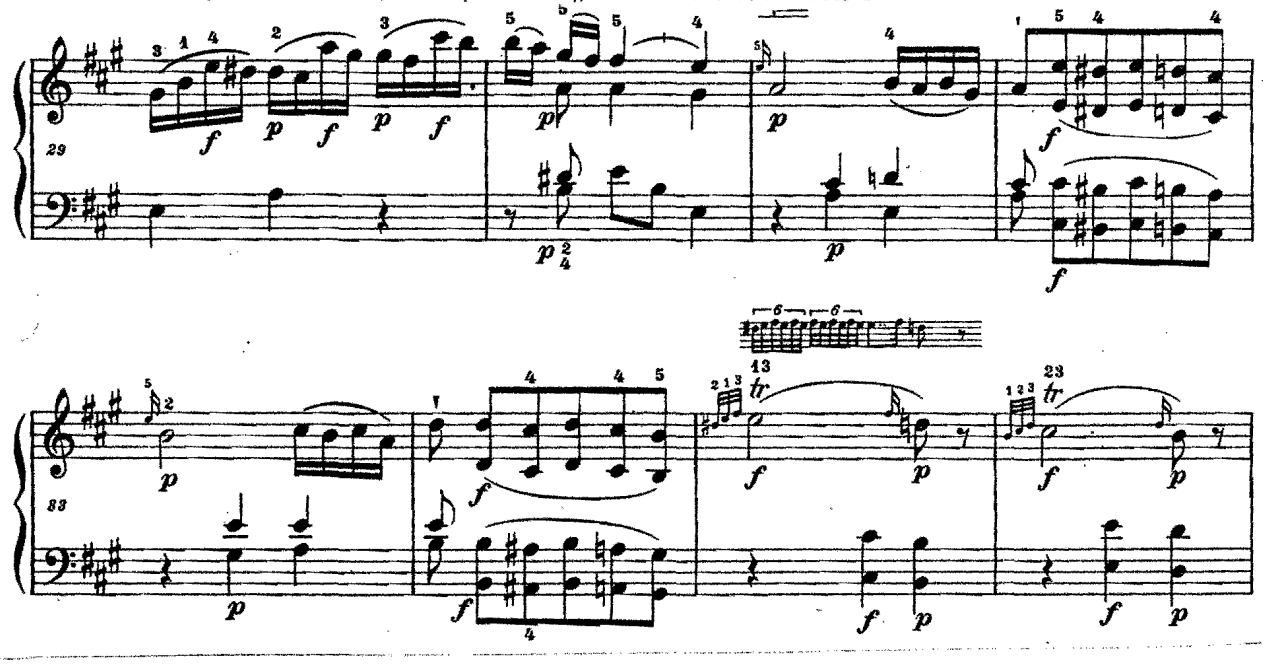
Example 4: Sonata in G, K. 283, Second movement mm. 3-10



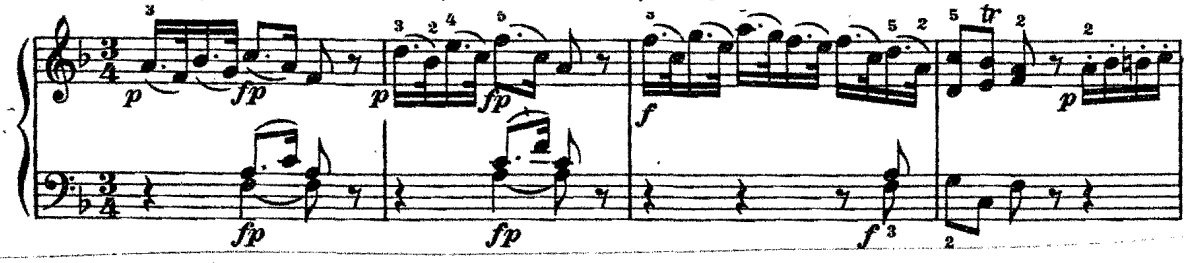
Example 5: Sonata in D, K. 284 ("Doernitz"), Second movement mm. 1-5



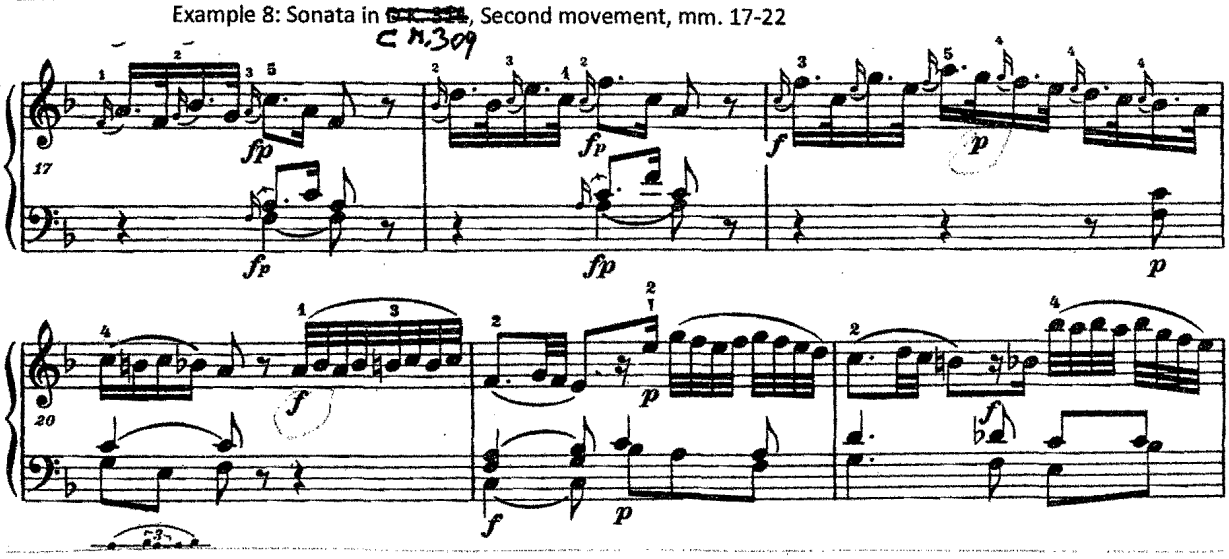
Example 6: Sonata in D, K. 284 ("Doernitz"), Second movement mm.29-36



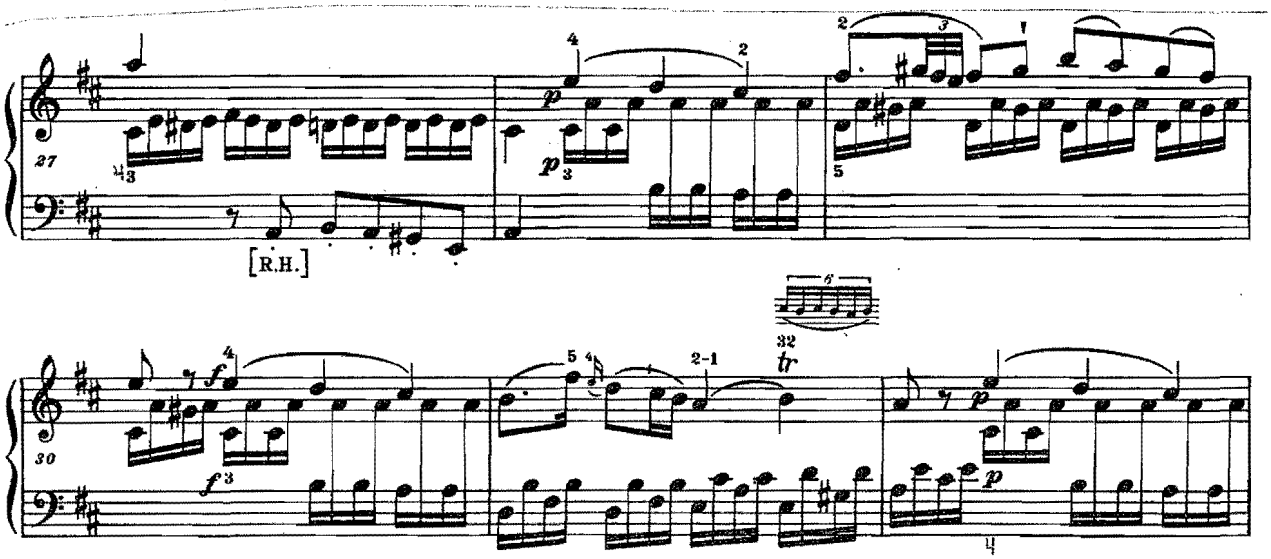
Example 7: Sonata in ~~D K. 311~~ K.309, Second movement, mm. 1-4



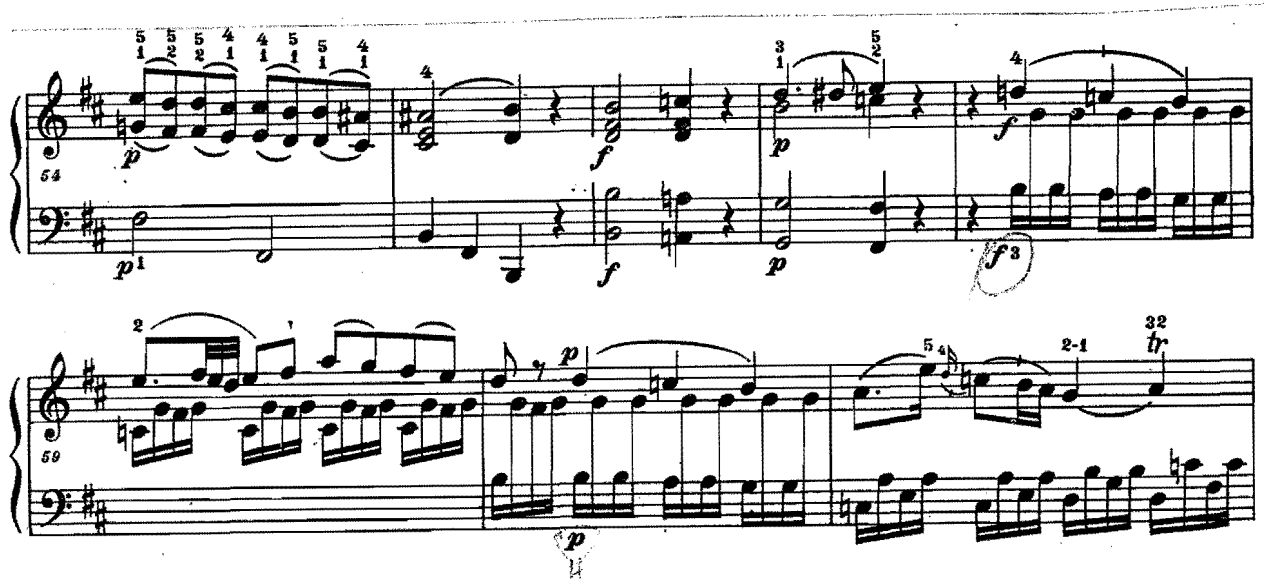
Example 8: Sonata in ~~D K. 311~~ K.309, Second movement, mm. 17-22



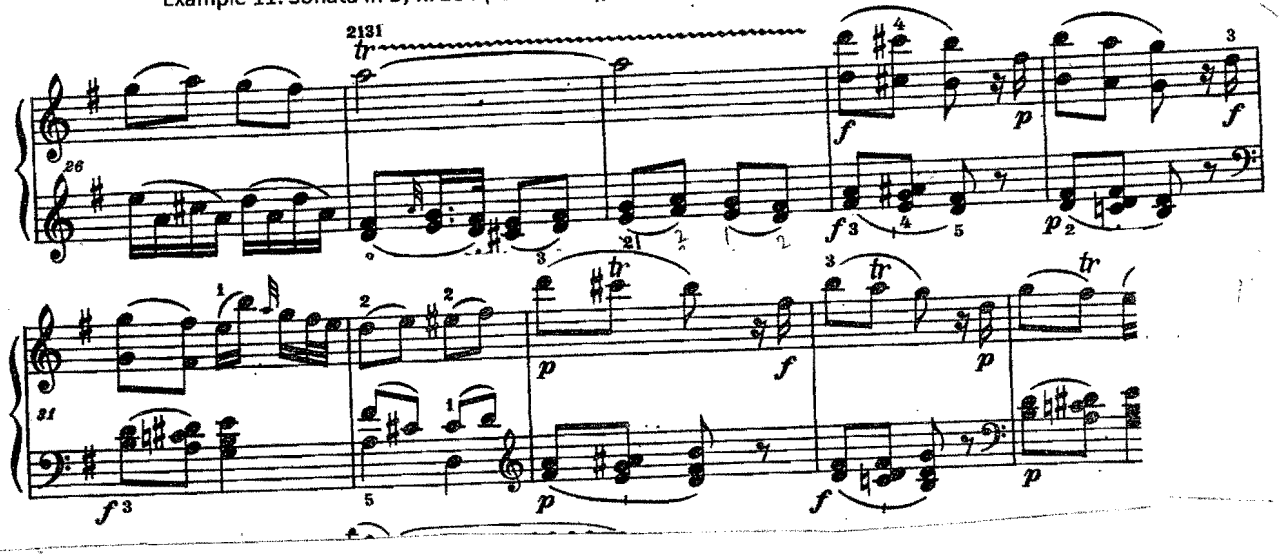
Example 9: Sonata in D, K. 284 ("Doernitz"), First movement, mm.27-32



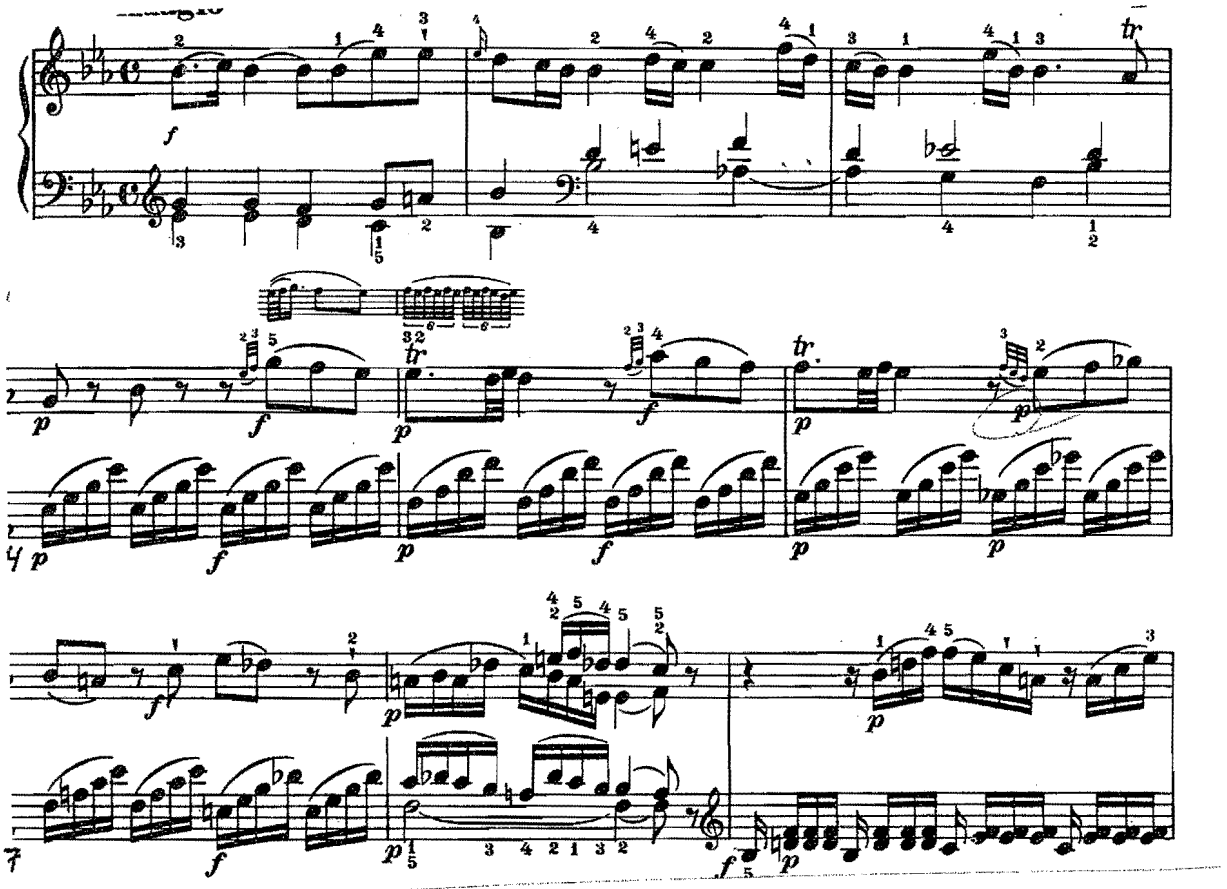
Example 10: Sonata in D, K. 284 ("Doernitz"), First movement, mm. 54-61



Example 11: Sonata in D, K. 284 ("Doernitz"), Second movement, mm. 26-35



Example 12: Sonata in E-flat major, K.282 First movement mm. 1-9



Example 13: Sonata in E-flat major, K.282 First movement mm. 21-26