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From Massive Clouds to C major: Aspects of Tension and Release in Krzysztof Penderecki's *Polymorphia*

Abstract. Since the beginning of the 20th century, the gradual decline in the domination of the Tonal System promoted intense artistic research by composers, in their attempt to find innovative methods to create levels of tension and release, along with new ways of tension fluctuation and interaction in the context of a music form. Initially, tonal relationships of the cycle of fifths, the extended functional harmony and the super-chromaticism are "replaced" by new, previously unheard, interactive cores of tension and release, the creation of which is prominently based on the motif structure and the relevant melodic and harmonic intervallic ratios. After being systemised by the Second Viennese School and later by the integral serialism composers, this primary idea led to the development of numerous creative disputes and, ultimately, of new perceptions and fresh aesthetic trajectories in the matter of alternating the tension within a music work. Many composers of the late 1950s generation utilised methods diametrically opposed to the rationalism of integral serialism, in order to achieve sonic tension and release, through intuitively organised sound clouds and textures. Looking indicatively at Iannis Xenakis' article "The crisis of serial music", a collective quest for alternative methods of tension organisation can be noticed within a whole generation of composers. This quest generates numerous technical, musicological, psychoacoustic and philosophical extensions, some of which will be presented and further discussed in the present paper, on the occasion of Penderecki's *Polymorphia*. In summary, driven by the unexpected concluding C major chord of *Polymorphia*, the following points are examined in this paper: 1) the C major triad as a link between the compositional thinking of the distant past and the contemporary era; 2) micro- and macro-structural examination of specific extracts of tension and release within this particular work; 3) the relative perception and individual interpretation of tension and release within a music work.

Keywords: Penderecki, polymorphia, tension, release, sound masses, tonic, dominant.

Krzysztof Penderecki composed his *Polymorphia* for Strings in 1961, in a period where a new compositional style was introduced, characterised by the use of sound masses as primary musical material. The harmonic density generated by the formation of the intervals becomes the primary sonic material to be shaped and elaborated, as well as to establish the overall structure of the work. According to this specific compositional language, each of the acoustic phenomena is perceived as a geometrical sound shape, determined by parameters such as length and width (Mirka 2014). Along with the monumental *Threnody for the victims of Hiroshima* for 52 strings, composed one year later, *Polymorphia* is one of the most representative examples of Penderecki's compositional style during the early sixties. As it is widely known, the abstractly-ternary A-B-A_1 structure of *Polymorphia* is based on the fluctuations of massive string-sound clouds which are finally released into an non expectable C major triad. This specific ending is often interpreted as an ironic reference to the past, since tonality used to be more than a forbidden fruit for contemporary composers during the fifties and later (Bernard 1999).

Thus, the choice of *Polymorphia* as a focus point of this paper was not a result of random selection. The characteristic finale of the work triggers a whole discussion on what tension and release actually are and how those levels are perceived in a non-tonal sonic environment. Before getting deeper into specific extracts from *Polymorphia*, the following table includes some of the common ways, utilised by composers in different historical eras and styles, in order to achieve a satisfactory release of tensive sonorities:

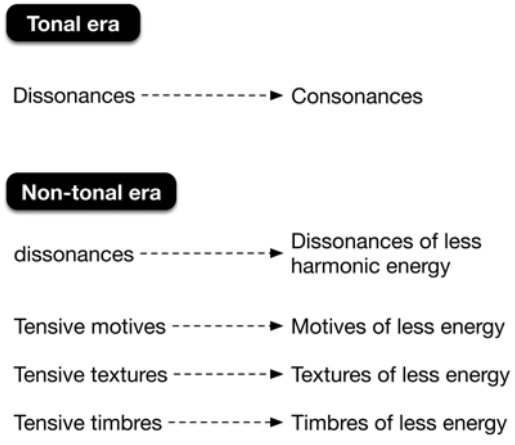

Figure 1. Ways of Resolution

From the earliest found music fragments, such as the Seikilos' *Epitaph*, dated between 200 BC and 100 AD, levels of tension and release can be clearly perceived through the development of the melodic line, powerfully supporting the meaning of the text. For example, the first phrase of the *Epitaph* has its peak on the respective European pitch E, which appears above the most important words: *ζῆς* (Eng. live) and *φαίνου* (Eng. be light-hearted)[1]. From the very beginning, tension is achieved with a skip of the perfect fifth (European respective pitches A-E) leading to the repetition of the pitch E, thus representing the duration and the importance of the meaning of life, exactly as the text describes in this specific phrase. Immediately after, the same peak point is utilised again, this time being approached by two ascending steps (from respective pitches C sharp to D and E), which set to music the second important word of the phrase, *φαίνου*. Finally, the initial skip to pitch E is released by a step to the opposite direction:

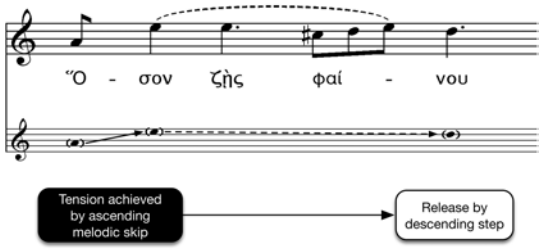

Figure 2. Seikilos' *Epitaph*

At this point, it should be highlighted that the act of using a contrary direction step in order to balance the tension generated through a melodic skip, appears to be a common compositional practice followed later in the centuries, during the Renaissance, often taught as a stylistic rule for the 16th century's modal counterpoint:

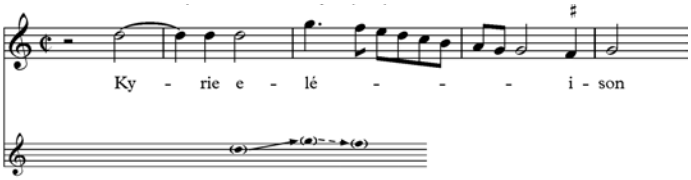

Figure 3. Palestrina, *Pope Marcellus Mass* (Kyrie)

In Tonality, dissonances search for resolution in consonances. On the contrary, in most of the non-tonal contemporary styles, resolution is often achieved by fluctuation of the energy of a music passage. Thus, dissonances are often released into either consonances or dissonances of less energy, a common practice followed by the dodecaphonists. In the same way, tensive motifs are released into motifs of less energy, as it happens, for example, in most of Steve Reich's counterpoints. Tensive timbres are released into timbres of less energy, stating Helmut Lachenmann or Salvatore Sciarrino as representative composers. Finally, tensive textures are released into textures of lesser density. Here, composers who wrote music using masses of sounds, such as Penderecki, Lutosławski, Ligeti, Xenakis and others should be included.

Based on the overall structure of *Polymorphia*, the following types of tension can be identified and analysed later on:

Types of tension in Polymorphia:

Tension caused by:

1) Duration of sound
2) Textural density
3) Rhythmical mobility
4) Dynamics
5) Register

Figure 4. *Polymorphia's* types of tension

[1] See Burkholder, J. Peter, and Claude V. Palisca (2014). *Norton anthology of Western music* (Volume 1).

In addition, there are many passages which can be characterised as temporary tension, which are interpreted as release due to immediate change into more tensive parts. Consequently, there are numerous cases where tension or release is perceived as such due to interaction with the following sonority. If a passage which implies tension is followed by an even more tensive sonority, then the first is almost automatically perceived as release. On the contrary, if a less tensive sonority appears after the first – seemingly tensive – passage, then the perception of the initial tension is verified.

In the first category, "tension by duration", a reference to the first five bars at the very beginning of the work will be made. The texture of this particular passage consists of a static unison in a very low dynamic level (*pianississimo*). Thus, for seventy-six seconds, Penderecki builds a loose texture, where all its characteristics seem to create an impression of release at first sight. Even when the first canonic *glissandi* appear to change the textural range from a single pitch C to the harmonic interval D quarter-tone sharp-F sharp (fourth bar of the work), none of the other components of the passage seems to introduce any notable change to the overall tension. However, this particular sonic event lasts for enough time to develop an intensive waiting for what might possibly follow. Hence, a static texture like this, bears a strong tension due to its relatively long duration[2]. Here, it should be noted that the duration of a sonic event is often a parameter of high importance, as a factor which raises the initial tension of the specific sonority. A sound which is sustained, after some seconds, begins to unsettle the receiver's waiting, thus intuitively triggering the wondering of what might follow. The greater the waiting, the more tensive a sustained sonority is perceived as such.

Another notable example, which provides a double tensional identity can be extracted from the violins part in the twenty-forth bar of *Polymorphia*. Here, the *legno battuto* undoubtedly functions as a release point to the previous massive glissandi-texture, creating also a timbral contrast between metallic (*arco/normale*) and wooden (*arco/col legno battuto*) timbres (Mirka 2003). Nevertheless, the kinetic character of this new part, which occurs due to its prolonged duration, implies a gradually built tension, formed by persistent rhythmical patterns which are generated by the rapid, irregular repetition of this percussive idea. Therefore, this, initially "quiet", pointillist idea, due to its very complicated rhythm, soon enough becomes adequately tensive and it is progressively spread to all the instrumental groups, covering a major part of the string orchestral range. Along these lines, the sounds starting from bar twenty-four may initially be perceived as release, compared with the previous very tensive harmonic surface.

These two distinct textures could be optically illustrated by two square geometrical shapes In order to express the degree of density for each harmonic texture. The first square could be represented with a solid colour, which depicts the high density of the massive harmonic texture established during bars 11 to 24. On the contrary, the pointillist *legno battuto* texture in bars 24 to 32 could be illustrated as the same geometrical shape, filled with irregular, dot-like micro-elements. The formation of the dots and the gaps that are created, represents the intense rhythmical mobility of this second texture. A subtraction between the two shapes returns a visualisation of the difference between the two levels of tension, achieved during these utterly distinct passages.

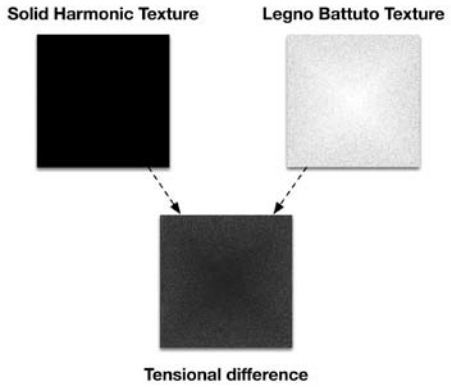

Figure 5. Visualisation of tensional difference (bars 11–24)

[2] See Penderecki, Krzysztof (1963). *Polymorphia* für 48 Streichinstrumente [*Polymorphia* for 48 stringed instruments]. Celle: H. Moeck Verlag.

The texture of bars 24 to 32, described above as pointillist, offers the compositional advantage of rhythmical mobility. The continuous feedback of this specific texture increases the auditor's waiting to a degree even higher than the one generated from the sustained sounds, which were discussed previously.

Then, from Bar 33, the rapid repetition of the *pizzicato* highest possible pitch by the violins, creates an energetic rhythmical surface which appears to be a canvas for the development of a pivot passage, leading to Bar 37, where a new part of the work begins. Inside this sonic environment, Penderecki creates a second kinetic layer by placing irregularly distributed *sforzando* chords. This sequence of sound events decisively develops a tensional crescendo, supported by the rhythm of the passage and the high dynamic points. It is worth mentioning that this rhythmical idea consists of two different sub-layers. The string ensemble is divided into two groups. The first includes violins 1 to 4, violas 1 to 4 and violoncellos 1 to 4 and generates the primary rhythmical layer of the passage. The second group includes violins 5 to 8, violoncellos 5 to 8 and double-basses 5 to 8, missing the violas. This second group functions more as a secondary rhythmic sub-layer, which consists of a rhythmical line creating almost irregular upbeats to the first. Both sub-layers are unified in Bar 36, which is the last bar of this part, unified where all chords sound simultaneously by the whole string orchestra. The unification of the two sub-layers is also supported by the tempo alteration, as Bar 36 lasts for three seconds, contrary to all previous ones, which last for five seconds, creating an impression of an *accelerando*.

The following figure illustrates the interaction between the two *pizzicato*, rhythmical layers:

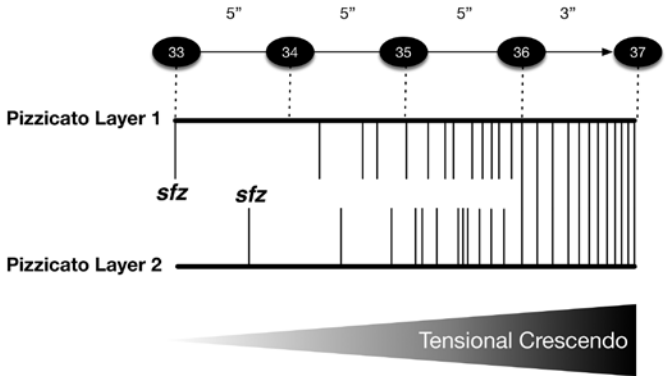

Figure 6. Tensional crescendo through pizzicato layers interaction

After this complicated type of *accelerando*, the auditor's waiting may become gradually more provoked, searching for the very next sonority. Either of the two following sound paths might occur: a passage which will probably release the tension that has already been built, or a passage of even a higher level of tension. Penderecki chooses to utilise this tensional *crescendo* as a link to the next part, which begins in Bar 37. Here, the rhythmical mobility is even more tensive, while all the strings irregularly repeat a notated pattern which consists of rapid, interlocking *pizzicato arpeggios*[3].

After establishing its own identity, the carried tension comes to the foreground, uncovering the kinetic components of which it consists.

As the part A of *Polymorphia's* ternary A | B | A_1 | dissolves into the kinetic part B, Penderecki seems to have taken advantage of the use of dynamics to set up a new level of tension. Danuta Mirka (2000), in her journal "Texture in Penderecki's sonoristic style", describes *Polymorphia's* B as a part based on the opposition between spatial mobility and immobility, according to the level of tension and release achieved.

Contrary to A, from Bar 24 to the end of B (Bar 46), release is established by transforming the previously solid texture of the work into granular, by the employment of repeated incessant short sounds. On this sonic canvas, there are sufficient, wide spread points of tension, which are achieved by abrupt change of dynamics. Hence, the granular harmonic surface, generated by the *col legno* sounds, functions as release to the previous *glissandi* part and uncovers gradually its own tension because of the duration. Finally, even higher levels of tension are developed by means of dynamics.

For the fact of building up tension according to register, it would be useful to focus on the tenth bar of *Polymorphia*, where a line of *sul tasto* sounds, performed by the violins is introduced in the highest possible register of the instrument. If this specific line is examined independently, it could be noticed that it is

[3] See Penderecki, Krzysztof. 1963. *Polymorphia*, für 48 Streichinstrumente.

static, almost monophonic and in a very low, *pianississimo* dynamic level. Taking all these parameters under consideration, it may be expected from the listener to perceive it as a release point. Nevertheless, the violins line, combined with the one of the double basses, generates a frame of this part's overall texture. This specific texture is undoubtedly of high tension, as it can be clearly noticed between the fifteenth and the twenty-first bar. The viola group is the one to fill the "textural gap" unfolding the entire texture of this particular part. The same practice seems to be followed by Penderecki in the middle part of *Polymorphia* (from the thirty-second bar to the end of B), where the violin groups frame such a texture with percussive sounds. Both examples lead to the conclusion that a musical idea which initially implies release later becomes the peak point of a tensive passage due to its register.

Instead of a summary, I would like to refer to the final relationship between tension and release in *Polymorphia*, which, in my opinion, has a great impact due to its drastic contrast between the two parameters. This final relationship has not only shaped the title of this paper, but has also inspired a potentially new and majorly intuitive perspective – at least on my behalf – towards the perception of tension and release. Beyond any reference, symbolism, irony or nostalgia towards the past (Fanning 2001: 101–140), Penderecki uses a C major triad as a release of an extra-solid, microtonal sound mass in the finale of *Polymorphia*, which results into a combination of tension from the contemporary era and release from the recalled tonal past. And this particular resolution appears to be absolutely satisfactory. Penderecki himself, during an interview for the journal "Composer" (Penderecki & Monastra 2000), claims that C major triad was not used in any terms of tonality or symbolism. It was a conscious choice to further explore and to highlight the importance of the interaction between tension and release levels in a musical work. At the same time, the ending of *Polymorphia* opens Pandora's box for discussion on what actually the terms of "tonic" and "dominant" might mean in different historical eras. A possible – but not the only – answer might be found in Scott Murphy's journal (2007): "A model expectation for some neo-romantic music of Penderecki", where he mentions tonic and dominant as "two poles of a continuum of expectancy profiles, whose length is measured by a number of most probable continuations". A closer look to J. S. Bach's tonal answers indicates the existence of only two harmonic areas: the dominant and tonic, which represent tension and release respectively. Due to the nature of the harmonic series, which forms a full-major triad within partials 1 to 6, as well as to plenty of tonal acoustic experiences from the tonal system, a major triad is mostly perceived more as a tonic rather than as a dominant-seventh, due to its non-temperated seventh harmonic partial.

In *Polymorphia's* bars 63 to 65, tension reaches its highest level throughout the whole work with repeated pitches, solid microtonal texture and high dynamics.

The establishment of the triad – perceived as a tonic – follows at the very end of *Polymorphia* and leads to the perception that everything that was heard before was within the dominant harmonic area. Hence, Penderecki draws an abstract form of the dominant which rises from all the previously-heard sound masses. Reflecting back on the various forms of tension and release in the whole work, these relationships can be perceived as abstract micro-structural pairs of dominant and tonic. From a macro-structural perspective, even the whole work could be perceived as a long, gradually developed dominant with fluctuating tension, released into the non-abstract final tonic.

In an attempt to further extend this assumption, a broader discussion could begin, regarding the content of *Polymorphia* seen as a dialogue between consonance and dissonance, in general. The existence of a tonal, consonant sonic event – C major triad – generates a very powerful type of contrast, representing general consonance and dissonance, which brings back to mind the fundamental principles of the tonal harmony of the past, next to contemporary massive micro-tonal harmonic relationships. Along these lines, since there was no other consonant harmonic impression during the whole composition before the very end of the work, every dissonant sonority that sounded previously, however tensive, seems to function as a fundamental component of a long, gradually developed, abstract type of dominant, released into the final, non-abstract C major tonic triad.

As one might expect, *Polymorphia* belongs to a vast number of works where the C major triad is used not only for its tonal colour, but also as a sound with many symbolic extensions. In 2001, Professor David Fanning published his paper "The present-day master of the C major key". The major part of his paper consists of a list including a large number of music works by various composers from different historical eras, where the C major triad seems to function more than a tonal chord. For example, Arnold Schoenberg, in his first *Satire* for four-part mixed choir (1925), uses pitches C, E and G as the first three partials of a dodecaphonic series, in order to underline the radical changes regarding the compositional thinking during the first half of

the 20th century. C major *arpeggio* forms the word "Tonal", while the remaining nine partials of the series fill the phrase "Oder Atonal? Nun sagt einmal" and so on:

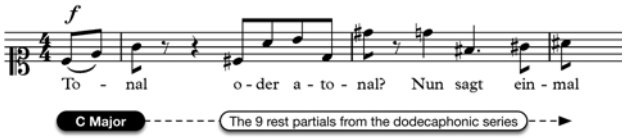

Figure 7. Schoenberg, *Satire* No. 1 Op. 28

In further ways, C major has been used in order to symbolise a vast variety of elements ranging from victory, nature, sunrise, Child-like simplicity, among others, by composers such as Beethoven, Shostakovich, Nielsen, Prokofiev, Stravinsky, Schnittke and many more.

In conclusion, after so many centuries of music creation and so many changes in the musical styles, it seems that the endless interaction between tension and release remains unalterable in its essence. No matter how much this sophisticated game between tension and release varies from era to era, place to place and from one composer to another, it seems to remain still the exact same medium, both to structure a music work, and to maintain the audience's interest on a high level. From the *Epitaph* of Seikilos to a work that is being created at this very moment on a contemporary composer's desk.

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Nuo masyvių debesų iki *do* mažoro. Krzysztofo Pendereckio kompozicijos *Polymorphia* įtampos ir iškrovos aspektai

Santrauka

Šio straipsnio tikslas yra ištyrinėti galimas įvairių rūšių įtampos ir iškrovos percepcijas Krzysztofo Pendereckio kūrinyje *Polymorphia* (1961). Analizuojant tam tikrų ištraukų faktūras, pristatomi ir aptariami įvairūs įtampos kūrimo pavyzdžiai, kai įtampa kuriama trukme, faktūros tankiu, ritminiu mobilumu, dinamika ir registrais. Finalinio C-dur akordo, kaip iškrovos funkciją po tankios mikrotoninės faktūros atliekančio elemento, panaudojimas kelia klausimų apie tonikos ir dominantės santykių esmę ir jų funkcionavimą netonaliose struktūrose. Straipsnyje taip pat tyrinėjama potenciali šios sąveikos įtaka kūrinio makrostruktūrai; daroma prielaida, kad visas kūrinys gali būti suvokiamas kaip nuoseklus įtampos kilimas iš atonalios dominantės ir iškrova į tonalų akordą.