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An Extended Analysis of Krzysztof Penderecki's *Threnody to the Victims of Hiroshima*

Krzysztof Penderecki's *Threnody to the Victims of Hiroshima* is one of the hallmark pieces of 20th century composition, a groundbreaking piece that has penetrated beyond the realms into a culturally viable piece, as seen in it's inclusion in the soundtracks of films such as *The Shining* and *Children of Men*.[1] Written in 1960, it was a piece that broke new ground in timbre, tonality, score layout, and form. But would the fame and attention that this piece received have been for naught had the title been kept in its original form of 8'37''? This analysis will attempt to delve into the inner workings of *Threnody* in order to find the materials that make it such a pivotal work, and the effects that titles provide to their works.

Score Layout

With the rise of the avant-garde in the 20th century, and the new approaches to music that came with it, from serial music to chance compositions, one of the issues facing contemporary composers was proper notation that was reflective of these new sounds. With music like 12-tone or serial music, no new changes were necessary to the establishment of the score, but when we see the rise of the Cageian indeterminant aesthetics, this became an interesting dilemma. The most effective way

[1] http://sinfinimusic.com/uk/learn/composers/krzysztof-penderecki

to determine new ideas in music was to implement new graphical devices to the score, with sometimes the score being a new graphical construction in its own right. In 1960 when Penderecki composed Threnody, he had to implement such a new construction for this piece.

Jan Kaluzny wrote an extensive piece about Penderecki and his ventures into new notation. Here he frames the core concept of new notational practices:

> And here an important question arises, whether in the context of modern music's achievements in the field of construction, harmonics and tone quality, the traditional system of notation is still operative. Undoubtedly, this notational system has been most efficient in the time of Mozart, or even Debussy. In relation to the music of that period, it was the most adequate form (then known) of transmitting the composer's idea to the performer. However, music from that time progressed, while the notational system, which, after all, is a par excellence convention, remained.[2]

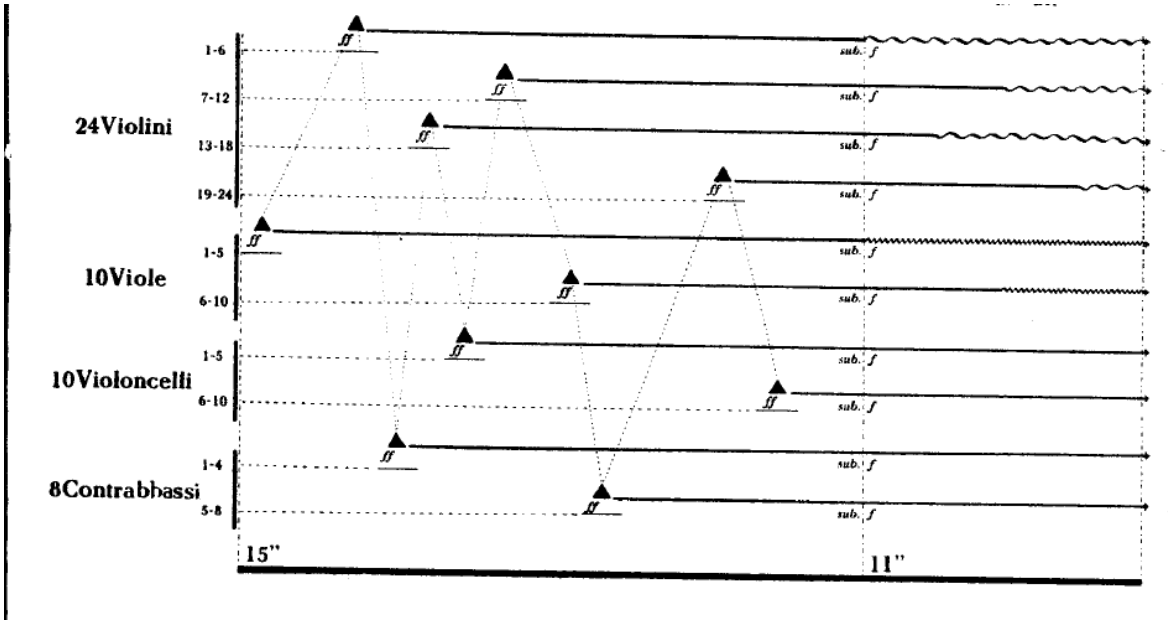
The first concept that strikes the reader of the score (who is unfamiliar with many contemporary notational practices) is the absence of the bar line system. The vertical component of the score is comprised of lines that divide into time segments of seconds rather than barred divisions of meter. For one who is only familiar with traditional notational practices this can be very daunting, because the divisions are not equal like in standard notation. The vertical divisions of seconds can be in any duration the composer wishes. In addition to this, the amount of material in a given time segment is also to the composer's discretion. A musician may be looking at scenarios where there is a long time segment with few notes, or little activity, but is shown as a very short "bar"; or the opposite can occur, where the time frame is only a few seconds but the "bar" extends for a very long part of the page. Also effects can be prescribed by the horizontal lines as well. When calling for *molto vibrato* Penderecki utilizes a wavy line instead of the straight horizontal line graphic. In any case, the piece's construction as time-based rather than on the traditional bar system was actually one of the primary ideas of Penderecki, who

[2]KRZYSZTOF PENDERECKI AND HIS CONTRIBUTION TO MODERN MUSICAL NOTATION Jan A. Kaluzny pg. 86

originally entitled the piece 8’37’’, for its duration (naturally, more discussion of this will follow later on).

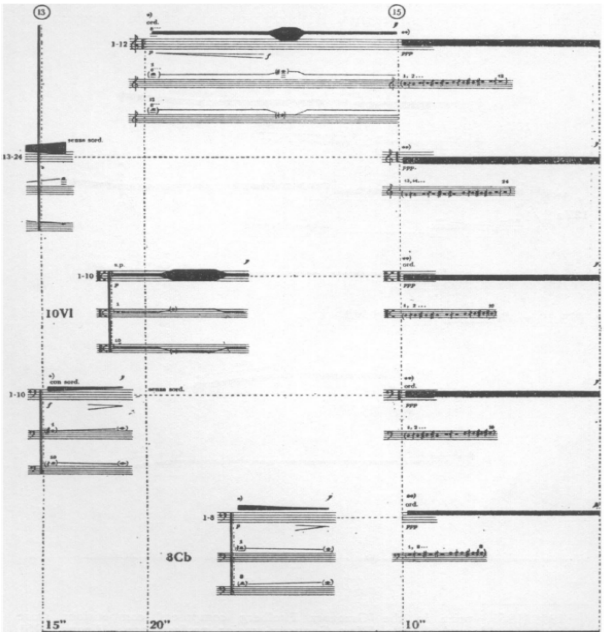
The vertical component of the score is also varied. First off is the division of the instruments for this string orchestra piece. There are 24 violins divided into 4 sections, 10 violas divided into 2 sections, 10 cellos divided into 2 groups, and 8 basses in 2 sections. The beginning of the piece is the easiest place to see a sense of the division of parts, as later on how the various sections are employed becomes much more complicated.

Ex. 1

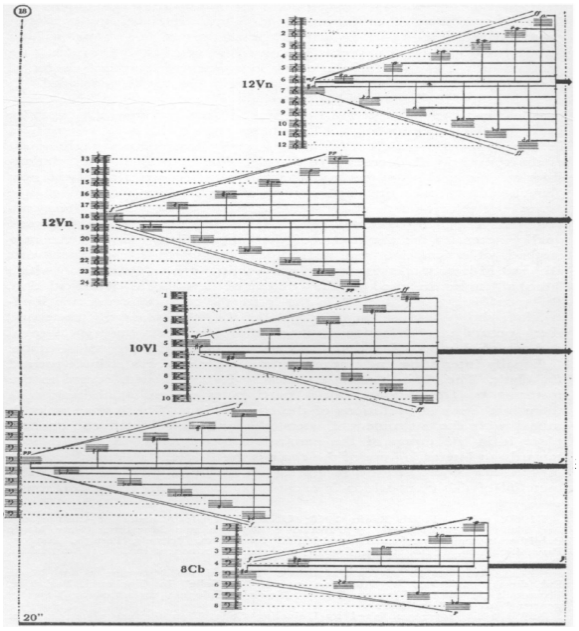


As this piece is an experimentation in soundmasses rather than a traditional piece with melody, harmony, etc., the manipulation of texture takes an enormously increased role of importance in the work. And the way that Penderecki illustrates how these changes take place is intriguing as well. As we can see from example 1, the contour of the sound starts at the highest point (indicated by the black triangles) of the 1-6 violas to the highest point in the first violin group down to the first bass group, etc. Compare this to other sections in which various sound “choirs” are divided.

Ex. 2



Ex. 3



By this point we can ascertain the piece has a far more intricate schema in almost all areas than traditional notation. However, traditional notation is not abandoned as we can see in both of the examples above, only expanded upon with the new notation Penderecki has deemed necessary for the creation of his new work. In example 2, we see the implementation of the "tone cluster lines". Kaluzny elaborates on their function, stating:

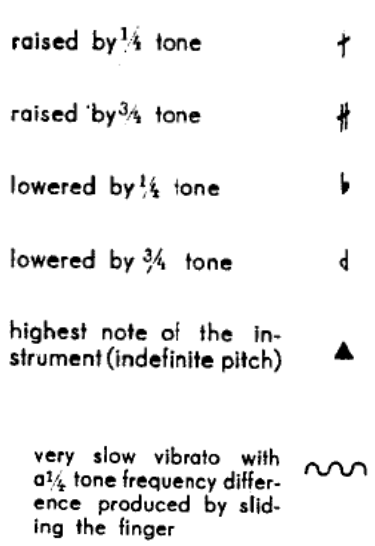
By exact notation given in parts, i.e. by giving exact pitch of the outer sounds, the sound limits are determined. Also, the function in construction is determined by the course of the line. If the sound boundaries are extending, the line representing the cluster grows wider and since again the exact notation is given in parts, the limits of the expansion are thus established. If the graphical expansion of the line is gradually diminishing, the cluster thus represented gradually narrows its tonal range. In this way, the cluster may narrow to one tone played by all instrumentalists, it may also spread wider from one tone to a cluster with a tonal range, for example, of an octave.[3]

This technique is implemented often throughout the rest of the piece as well as within some of Penderecki's other scores. An interesting device to divide up the voices occurs in in ex.3, where he

[3] Kaluzny p.89

takes the instrument groups and starts each of them at relative middle points of their register and then fans them out to their extremes. This creates an eerie effect, a sort of musical gestation that is repeated throughout the 5 groups. Where the groups come into the texture is dependent on their relative positioning on the schema. For the performer developing an awareness of this graphical kind of reading is important, as towards later portions of the piece, even though it is still time and event based, the piece's notational structure lapses into a pseudo- rhythmic affair. All of this innovation can be found just in the external presentation of the graphic score itself. In order to really unearth the sounds that Penderecki was aiming for, we need to delve deeper into the specific individual markings of this notation. If we look at the guide to his notation, we can see that primarily all the different symbols correspond to one of two groups: 1) Those that affect pitch content, and those that 2) affect timbre or have additional percussive effects. The first group consists of the symbols shown in ex. 4.

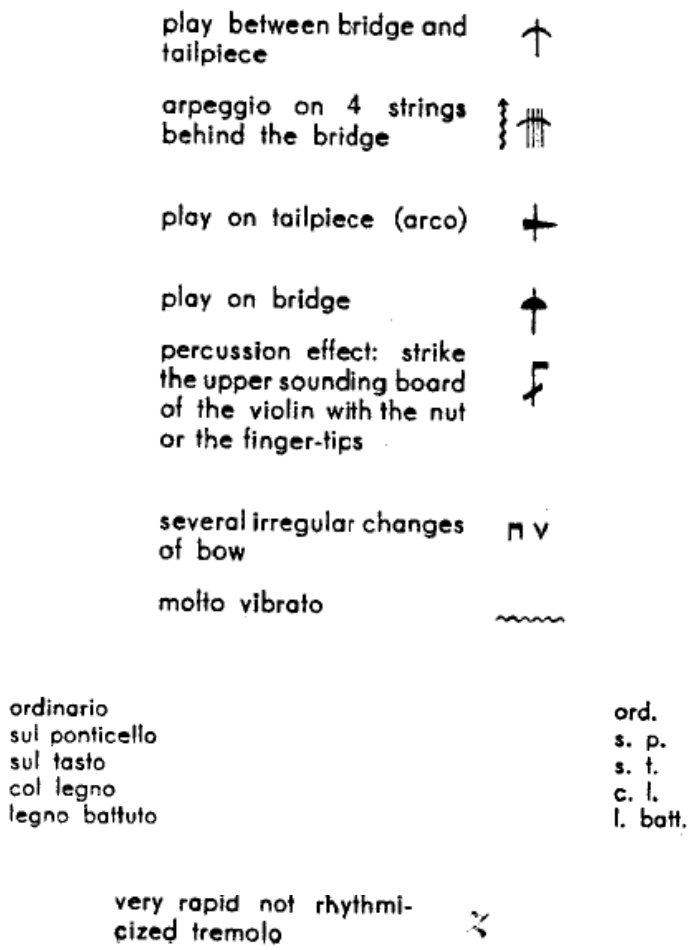
Ex. 4



The first four symbols indicate the use of microtonal intervals (quarter tones) in the texture. The other two symbols in this symbol-class are the upward-extending arrow, which indicates the use of the

highest possible note of the instrument (an example of indefinite pitch), and then the symbol indicating the very slow vibrato, which is placed here because of it's 1/4 tone frequency differential that is utilized when the finger is slid across the fretboard. The second group in ex. 5, demonstrate various timbral effects that add to the colors of the various soundmasses heard in *Threnody.*

Ex. 5



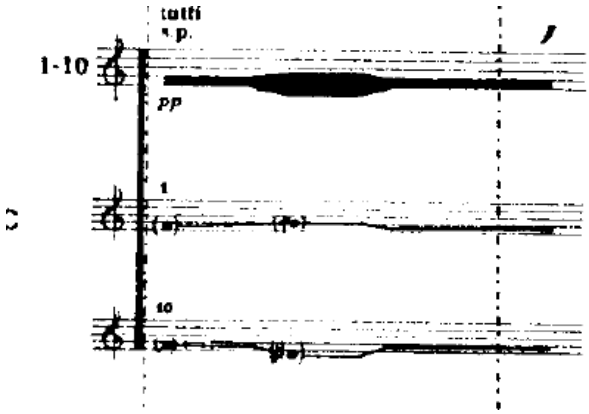
Seen above are more historical practices like sul tasto, ponticello, etc., and more elaborate timbral constructions that Penderecki himself created like the symbols indicating striking of the upper sounding board of the violin, or the arpeggiation of the strings behind the bridge. Both of these groups

are very important in the construction of the soundmasses that Penderecki manipulates throughout the piece.

Implementation of Microtonality

While Penderecki's piece certainly wasn't the first to utilize microtonal features, it was a piece that helped bring a sort of new popularity to microtonality in Western music. In terms of what Penderecki was trying to do with his "soundmass" style, utilizing the microtonal scale was of obvious benefit. The materials to utilize from standard chromatic notation would under microtonal principles extend fourfold. But why in a piece of music, that isn't tonal in any sense at all, need an extension of the scalar materials? In a dense, noisy cluster chord the effects of microtonal sounds would be mostly negligible to the ear; it might possess some impact on the chord, but Penderecki finds various ways to employ microtones that provide more weight to the tension that the piece tries to create. We first see the implementation of quarter tones in the same section where we first see the introduction of the aforementioned "tone cluster lines", here instead zoomed for ease of reading,

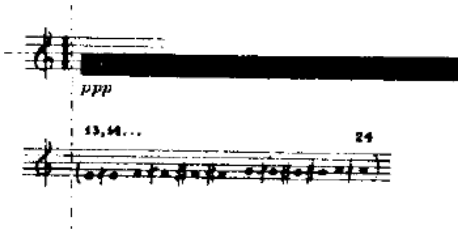
Ex. 6



The section starts with the cellos (note, not shown in ex. 6), the top cellos starting on a C, the bottom cellos on a A. So from this minor 3rd the glissando effect begins, but bringing us to a microtonal texture. While the A slides down a minor third to the F#, the C slides up to a D 3/4 sharp, giving us the interval of a Major 3/4 6th type of quality. This creates an incredibly deeper sense of tension than if the interval had rested on a standard chromatic based spacing.

And that is only just the beginning of the piece. We see the highest points of microtonality in the middle sections of the piece and at the very forceful ending segment. In both of these sections, we see that Penderecki distributes microtonal cluster chords around the texture, like the scale we can see in ex. 7.

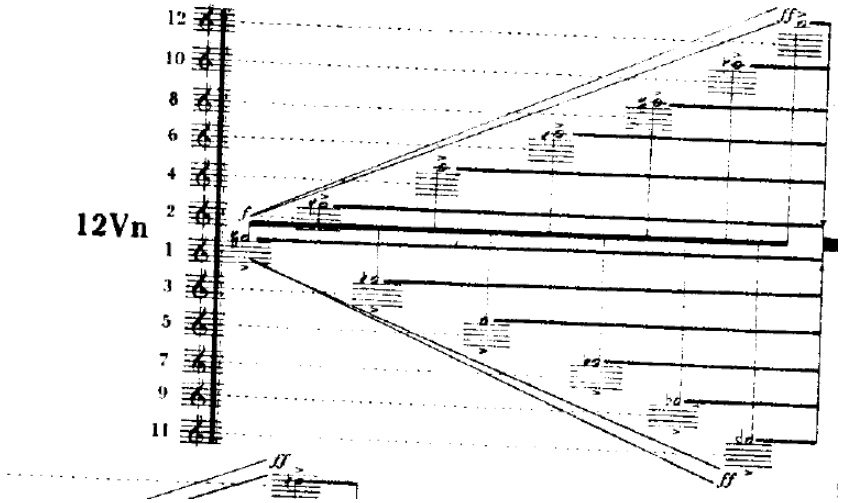
Ex.7



He has those cluster chords passing from voice to voice during these sections, as opposed to when he has the microtonal textures "fanning out" like in examples 2 and 3. While in the second example, this spread only occurs between 2 groups, but in the third excerpt, we can see this tonal expansion take place between each individual voicing within each grouping of strings. For example in the first 12 violins, the first violin plays, then the second, the third, etc. The effect that this has is stunning when orchestrated with microtonality. Starting from the initial pitch in each grouping, Penderecki has each new note introduction either raised or lowered by a quarter-tone. So looking at the top 12 violins, the first violin starts with a g#, to g 3/4#, to g 1/4 #, to a natural, to g natural, and so on, until the we have a

texture of stacked microtones of a almost a tritone's lenght (g 3/4 flat instead of an f, opposite of the upper end b natural.) Here you can see that play out in example 8.

Ex. 8



It would be already very eerie to do this expansive gesture throughout the voices with standard chromatic tonality, but this effect, when spread throughout the five string choirs, with every single instrument resonating a separate microtonal entity, is astounding. Each choir's differential in range is about a third to a tritone from top voice of the choir to the bottom voice. Now, keep in mind, that while each choir is a collection of microtonal pitches, these choirs all overlap with each other to form a composite microtonal collection that spans from an Ab in the contrabasses to a high B natural in the first choir of violins. So all in all that is 52 instruments playing individual microtonal notes spanning a range of around 4 octaves. This, without a doubt, creates an incredible amount of force and tension when played. This tension caused by microtonal clusters is found the piece, and is enhanced with Penderecki's implementation of various timbral and *Klangfarbenmelodie* type effects.

Use of Timbre

Timbre as a highly utilized concept that could stand alone in a composition had not emerged until the early 20th century when the likes of the Second Viennese school experimented with the concept of *Klangfarbenmelodie,* which put more emphasis on particular musical lines, primarily either the *Hauptstimme* or the *Nebenstimme*. Timbre then truly became an independent component in the 1950s when Serialism became a prominent movement in classical music, from the likes of Stockhausen, Babbit, Boulez, and others. As a student in the 50's Penderecki became increasingly fascinated with the timbral and acoustical side of music. Danita Mirka here writes about where this intrigue may have began, with his introduction to the acoustician Mieczyslaw Drobner:

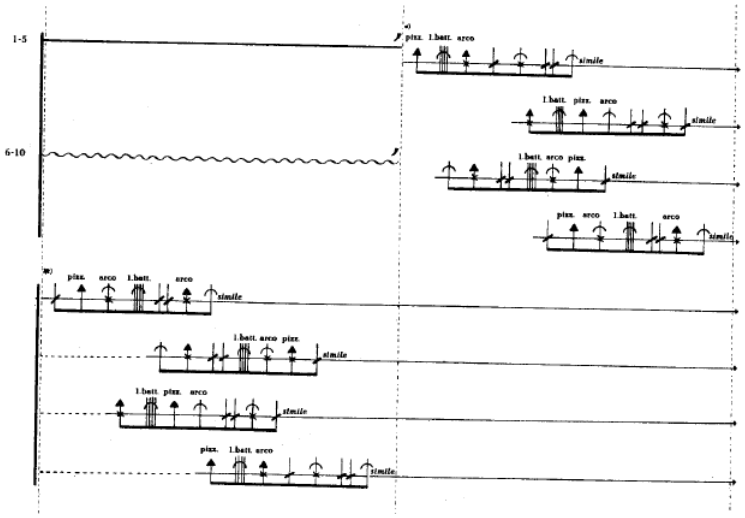
> Although the acoustic wave is a highly complex phenomenon, the process of its generation can be presented simply as a collision of two physical bodies, one being a sound source, the other being the body that vibrates the sound source. It is likely that such a splendidly simplified image of the sound-producing process was taken up by Penderecki from the teaching of Mieczyslaw Drobner, the eminent Polish acoustician and organologist. In 1958 Drobner moved from Lodi to Krakow to take the post of lecturer at Paristwowa Wyzsza Szkola Muzyczna, the school where Penderecki had recently finished his study in composition and was employed as an assistant. Two years later, in 1960, the Krakow publishing house Polskie Wydawnictwo Muzyczne (PWM) issued Drobner's book *Instrumentoznawstwo i akustyka*, which remains the classical Polish handbook of both disciplines-organology and acoustics-named in its title.[4]

Threnody began what for a long time would be a main point in his various compositions, timbre. What is fascinating about this piece as to other pieces that feature timbre is as a primary compositional force, is how Penderecki is able to compose a piece with such a variety of timbres with the supposedly "limited" sounds that can be produced from a string orchestra. In *Threnody* there is a clear display of sounds that emerge from the strings that even the most careful listener would be surprised to hear in the texture. We first see the use of multiple timbral effects near the beginning of the piece, shown in

[4] To Cut the Gordian Knot: The Timbre System of Krzysztof Penderecki, Danuta Mirka p. 436

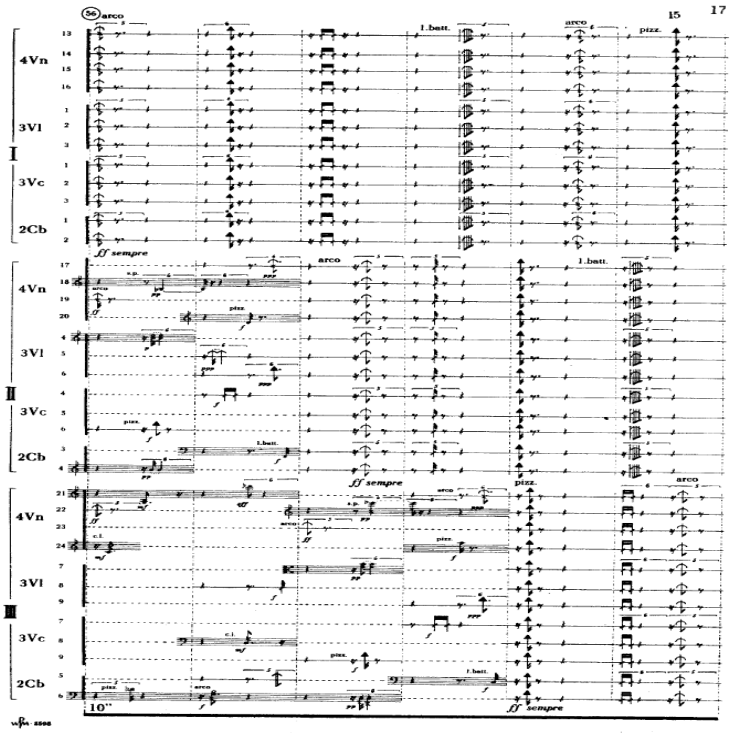
example 9.

Ex. 9



When looking at this section we see most of the timbral effects that were presented in the symbol guide are present here in this example. We see here the use of the percussive soundboard effect, the bowing of the instruments on the bridge, on the tailpiece, and between them, irregular bow changes and tremolo, along with arpeggiation on the strings along the bridge. As they are played in the passage, it may be hard to discern each individual technique. This is because Penderecki has each choir splitting into 4 units, which each come into the texture at their own time. In addition they play their passages as fast as possible continuing in the texture even when new choirs join in. All of this assists Penderecki in his goal to create a composition that deals with "soundmass". While the use of timbral variations is really effective, it reaches a new peak of intensensity later in the piece, where the full orchestra is playing, and the texture is clearer and more distinct than its somewhat "smeared" counterpart. We see this intensity in example 10.

Ex. 10



The clarity of his work here is in great contrast to the timbral elements before, but that is not the only interesting concept to grasp from this section. The way he orchestrates this passage here is very different to the way he has orchestrated other sections in the piece. Instead of dividing into choirs of the same instrument, here he divides into 3 choirs that feature every voice type: 2 groups of violins, a group of cellos, and a group of basses. And in addition to this , he emphasizes a return to pseudo-uniformity. The first choir plays everything in the passage together, while the second choir plays the first two "bars" independently then performing the following bars tutti, and the 3rd choir plays 4 bars independently and the last 2 are tutti. This section is unique as it is the sole area in the piece where we can find clear and total rhythmic uniformity, outside perhaps the very ending of the piece. But one of the main questions that sprung up with analyses of pieces like this when they were new, was how do we identify larger formal structure?

Brief Examination of Formal Structure

The prospect of analyzing new 20th century techniques like 12-tone or serialism were daunting until theorists learned how to identify the strategies of these genres, for instance, with 12-tone music discerning what the tone-row was, and finding all of its permutations, whether inversions, retrogrades or retrograde-inversions. Penderecki's works with sound masses may appear to be initially daunting, but in terms of larger formal structure, it can be argued that they are more straight-forward and easy to analyze than other genres, perhaps even more standard classical forms. Especially given the fact that Penderecki utilizes this very visual and almost schematic approach to the score, it allows us to more easily discern larger structure. In order to discern breaks in the structure, one can simply look at where the notation begins to change in the score.

From the opening, with its wailing high tones, continue to endure with various applications of vibrato, all the way to rehearsal marking 6, where we see the first new texture enter. We can identify the opening to 6 as the first section of the piece. From there the next section continues until rehearsal mark 10, where the texture switches from this idea to the microtonal clusters with outer-edge glissandos, where section 3 begins. This part continues and develops for awhile until the large scale implementation of the various timbral effects that begins at rehearsal mark 26. This new section continues to develop and expand the timbral effects that it introduced until we reach the final section that begins at rehearsal mark 56. The reason we mark the separation here is that at 56 we see the building of uniformity that was shown in example 10, in contrast with the exchange of timbral material that preceded it. This section continues until the very powerful chord that finishes the piece.

When looking at this piece, we can understand that the that the formal structure of a piece like this isn't based off more traditional concepts of melody of form, but rather an emphasis of sound itself,

how it mutates, expands, contracts, etc.

Impact of a Title on a Composition

As it was alluded to earlier, the piece was not originally conceived as *Threnody to the Victims of Hiroshima.* Penderecki had an intent to name the piece, 8'37'' after the pieces duration, similar to John Cages' *4'33''.* He only ended changing the name after a recommendation from a friend, who advised him that it would make a more emotional impact for his entering in the UNESCO Prize of the International Composers Jury. [5] That change had an obvious and intended impact. The use of Hiroshima evokes so many emotions, but mostly of sheer horror, a kind of terror hitherto unknown by mankind, that of a nuclear annihilation. But this change of title has certain implications.

When any creative endeavor is undertaken, usually the titles are the last to come along. While this is the not always, the case, generally the work nearing its final stages will communicate some sort of message to its author that will let them know what the piece should be called. We should not downplay the importance of the role of the title either, as it is the same as a name to a person, while the person, like the body of art, still retains their own characteristics by definition, because they are *that thing*, their identity is crafted by their name, or in more philosophical terms, the label which helps the mind categorize objects with greater ease.

Here are the two principal questions that go along with titles: How effective is the title at conveying the work, and would the work, alternatively titled, still have the same impact as its originally titled counterpart? The title of *Threnody for the Victims of Hiroshima* works twofold, because it identifies itself primarily as a threnody, or a song of mourning or lamentation for the dead, and then because of the horror associated with the world's first experience of atomic warfare, the shock of the

[5] Burkholder, J. Peter, and Claude V. Palisca. *Norton Anthology of Western Music.* Vol. 3. pg. 637

imagery of an entire city laid to waste, the deformities of many of the survivors, and the constant fear and dread that the launching of the Cold War draped over the world. The second question is more difficult to answer. Would Penderecki's piece still have been an excellent example of a new timbral, "soundmass" compositional style? Absolutely. But would it have had the same level of emotional and cultural significance as were it titled 8'37''. Chances are, that would not be the case. Because the power of a title, is also the power of connection, and choosing a title is one of the most important decisions an author can give to any creation, as it will be the first thing the audience sees and contemplates. So when an audience sees *Threnody* instead of 8'37'', there is a set of historical and cultural expectations, and feelings moreover, with something this drastic, that are present, that simply are not present, with a more abstract title like a duration of time. This does not undo the power of the piece as a work itself, but only acknowledges the conceptual power a title has on a work.

Penderecki's *Threnody,* in this regard succeeds because the emotional power that the title adds to the music is undeniable. However, this piece stands out as a landmark title of the 20th century for it's ability to add various musical concepts like microtonality, prominence of timbre, and arranging for "sound masses" to the forefront of contemporary music. The piece's ability to break convention is something that has earned it applause from the classical music cultures and pop culture alike, and therefore has become a principal piece of the 20th century musical canon.

Bibliography

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  Danuta Mirka Journal of Music Theory, Vol. 45, No. 2 (Autumn, 2001), pp. 435-456 Published by: Duke University Press on behalf of the Yale University Department of Music Article Stable URL: http://www.jstor.org/stable/3653444

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