

ASPECTS RESULTING FROM THE ANALYSIS OF THE TONE ROW USED IN *DE PROFUNDIS* BY ARNOLD SCHOENBERG

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SUMMARY. This article presents the tone row used by Arnold Schoenberg in the choral work *De Profundis*, written in twelve – tone technique, in two hypostases: as a grouping of all-combinatorial hexachords (rare quality leading to a deliberate symmetry in the transformation of the note row) and as the sum of two interval dyads (complementary or antithetical). The composer's choices regarding the notes used in the series emphasize a permanent pendulum between the concept of tension and relaxation, between gravitational sound systems (with interval resolutions) and non-gravitational ones. These aspects convince us of the musical maturity at which Schoenberg arrived in his last compositional period, in which he chose to express himself without exclusively choosing one language (tonal or atonal).

Keywords: twelve – tone technique, tone row, atonality, all-combinatorial hexachords, Arnold Schoenberg.

Introduction

Schoenberg's creation is divided into four periods, with different compositional language. The musical scores of the first period have a predominantly tonal language, or they refer to a language with a gravitational center - reminiscent of tonality. In 1908, Schoenberg chose to abandon tonal writing in favour of atonality. He was the first composer to take this step, which is why 20th century music owes its evolution. In the composer's conception, his new approach is in the context of 'pantonal', not atonal. Critics considered the expression of this period as integrating into the expressionist movement. Gradually, Schoenberg's creations became serial, which delimited the third

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compositional period (1920 - 1936). The last period signals a diversity of language, with returns to the tonal principles, through the varied approach of forms of expression.

De profundis (Op. 50B) - 1950- the composer's last completed work, was composed at the invitation of Chemjo Vinaver, a well-known New York singer and choir conductor. At the request of the Jewish Agency for Palestine, *Anthology of Jewish Music* was born as a tribute to the new state of Israel, which had Vinaver as its publisher (Vinaver, 1955). Schoenberg demanded to get involved in this project with an existing work - Kol Nidre or Dreimal Tausand Jahre - but Vinaver insisted on a new composition with a specific ritual text in Hebrew (Moricz, 2008).

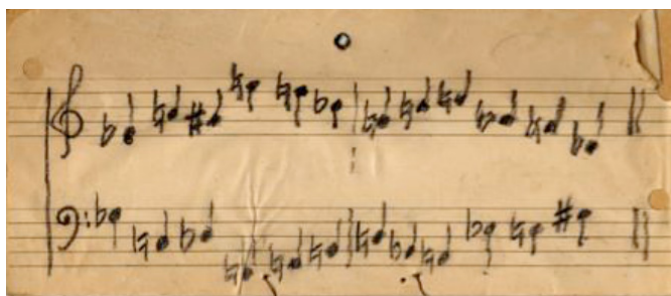
The composer used Psalm 130 (from the Book of Psalms) as the text for his new composition, written in twelve – tone technique, for mixed choir, a cappella - *De Profundis*. The psalm contains eight verses which, grouped into two sections, express a dual hypostasis: the first four verses appear to us as cries for mercy and divine help, and the last four evoke God's salvation and forgiveness. The complementarity between the human state and the divine intervention is pointed out in the music through different means: progressive dynamics, the fusion between the spoken and the sung text (Sprechstimme), tonal-atonal appearances.

Discussion:

1. The series as a group of all-combinatorial hexachords

Arnold Schoenberg's manuscripts and sketches are kept and maintained by the Arnold Schönberg Center in Vienna. In the case of Psalm 130, the notes of the tone row are presented as two sections of six sounds - combinatorial hexachords (Kostka 1999).

E.g. 1



Manuscript of the tone row used in *De profundis*
(Arnold Schönberg Center, online)

As can be seen in the image above, Schoenberg chose to transpose the set at a minor third interval, and - by using inversion - it results in two cross sections, with identical notes to those of the prime series.

E.g. 2

	I ₀	I ₆	I ₅	I ₁	I ₁₁	I ₇	I ₄	I ₈	I ₉	I ₃	I ₂	I ₁₀	
00	E \flat	A	A \flat	E	D	B \sharp	G	B	C	G \flat	F	D \flat	R₀
06	A	E \flat	D	B \flat	A \flat	E	D \flat	F	G \flat	C	B	G	R₆
07	B \flat	E	E \flat	B	A	F	D	G \flat	G	D \flat	C	A \flat	R₇
011	D	A \flat	G	E \flat	D \flat	A	G \flat	B \flat	B	F	E	C	R₁₁
01	E	B \flat	A	F	E \flat	B	A \flat	C	D \flat	G	G \flat	D	R₁
05	A \flat	D	D \flat	A	G	E \flat	C	E	F	B	B \flat	G \flat	R₅
08	B	F	E	C	B \flat	G \flat	E \flat	G	A \flat	D	D \flat	A	R₈
04	G	D \flat	C	A \flat	G \flat	D	B	E \flat	E	B \flat	A	F	R₄
03	G \flat	C	B	G	F	D \flat	B \flat	D	E \flat	A	A \flat	E	R₃
09	C	G \flat	F	D \flat	B	G	E	A \flat	A	E \flat	D	B \flat	R₉
010	D \flat	G	G \flat	D	C	A \flat	F	A	B \flat	E	E \flat	B	R₁₀
02	F	B	B \flat	G \flat	E	C	A	D \flat	D	A \flat	G	E \flat	R₂
	RI₀	RI₆	RI₅	RI₁	RI₁₁	RI₇	RI₄	RI₈	RI₉	RI₃	RI₂	RI₁₀	

The 2 hexachords in Prime form (00) and Inversion at 3th (I3) (Matrix Calculator online). The identical hexachords have the same color.

This characteristic guides us to see the hexachords as all-combinatorial. Hexachordally all-combinatorial sets are rare. There are only six series which fulfill characteristics of the above mentioned subject. Some hexachords are just combinatorial, that means that the aggregates (series with same notes) can be formed with a transformation of itself at only, T n (Transposition at a certain interval), I n (Inversion), R n (Retrograde), or RI n (Retrograde-Inversion), or even a subset of these, but never all four. An all-combinatorial hexachord must form aggregates at each of these transformations. Schoenberg used Second-Order All-Combinatorial Hexachords, meaning that the tone row creates aggregates with itself (or hexachordal complements) at two levels within each of the traditional orderings.

If we use Inversion at a minor 3rd (I 3) for the first hexachord of our prime tone row (noted P a), we get the same notes as in the second hexachord of the Prime tone row (noted P b), as you can see in the images below.

E.g. 3

Inverted P a, with a minor 3rd Transposition:

Although the all combinatorial hexachords support identical sections in two transpositions of each transformation (I, R, RI), Schoenberg limited his composition to only one of them for each occurrence: P0, I3, R0 and RI3 (P - prime form, I - Inversion, R - Retrograde, RI – Retrograde Inversion, and the numbers represent the number of semitones in the transposition). About this option, Rochberg evokes a possible connection with the third-interval - allusion to gravitational systems, the all-combinatorial hexachords inverted at a minor 3rd interval offering multiple harmonic occasions (Rochberg, 1959). As Babbitt mentioned, the second-order all-combinatorial hexachord is one that invites a particular type of polyphony, when two forms of the series overlap. You can see below the tone row and its Inversion transposed at a minor 3rd, as it appears in the composer's manuscript, noting the intervals that are outlined by the overlap of the two forms, to confirm those said by the composer Milton Babbitt - that the intervals in the first hexachord are complementary to the second, "*a real double counterpoint*". (Babbitt, 1987).

E.g. 4

We notice that the intervals arising from the superposition of the two variants of the series are predominantly consonant (perfect and imperfect), except for the major seventh and its complementary interval- the minor second. We should also note that the first section of the original version (located on the upper staff) is identical to the second section of the inverted version (the lower staff), and the second section of the prime series is identical to the first section of the inverted series - proof of the existence of the characteristics of a combinatorial hexachord.

2. The tone row as a sum of 2 dyads

Another feature of Schoenberg's series is the existence of two interval dyads used in an allegorical sense (Klontz, 2015; Couvillon, 2002; Sterne, 1993). This idea reinforces the powerful dual character of the psalm used as textual support by Schoenberg, the text showing a transition from individual prayer to the hope in an universal salvation.

From an analytical point of view, the tone row used in *De Profundis* can be synthesized by the coexistence of two intervals: the major third and the triton (augmented fourth and diminished fifth). Thus, the set has a dual essence - consonant interval next to a dissonant interval.

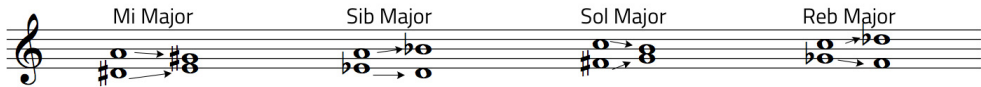
E.g. 5



The 2 intervals in the tone row

The link between these intervals is not random. Stepping further with the analysis of the series, we find that in each hexachord, the dissonant interval has its resolution at any of the accompanying consonant intervals. Therefore, the elements of the series are not individual entities, but are interconnected. The idea of interval resolution not only emphasizes a duality with the sense of tension-relaxation, but also insinuates a gravitational tonal sound character. Below, you can find a figure that proposes the tonal allusions of the interval.

E.g. 6



Resolutions in tonalities of the dissonant intervals of the tone row

The American composer and musicologist George Rochberg, in his work *The Harmonic Tendency of the Hexachord*, insists on the tonal interpretations of the hexachord in the series used by Schoenberg, demonstrating the existence of harmonic progressions in the texture of the *De Profundis* (Rochberg, 1959).

E.g. 7

Harmonic progression – Rochberg (bar 48)

The progression proposed by Rochberg illustrates how the position of the intervals in the hexachords, which make up the series, allow Schoenberg to harmonically guide the entire musical writing. Couvillon notes that the most intense meaning of harmonic progression occurs when the tritone is placed in the center of the hexachord, as in the second segment of the series. Thus, the expressive pattern of consonance - dissonance - consonance is outlined (Couvillon, 2002). The researcher claims that the existence of the tritone at the end of the hexachord cancels the possibility of a harmonic unity.

The 2 dyads that we mentioned were named by researchers the Divine Dyad and AS Dyad - Arnold Schoenberg's dyad. The two contrasting interval constructions complement each other in the musical discourse. The divine dyad corresponds to the interval of the major third, this fact being explained by its overlap with the word Adonai - a name used by the Jews for God. Also, it is notable that this dyad is placed over other words that have sacred meanings. Arnold Schoenberg's dyad comes from the initials of the composer's name - A S, which in musical transcription means nothing more than a tritone interval - A and flat E (es).

De Profundis composition begins suggestively with this interval, a sign of human subjectivity. The entire formal structure of the composition on psalm text seems to be derived organically from the two intervals (dyads). The interval cells in question represent the smallest units that ensure uniformity of the creation.

E.g. 8

AS dyad

E.g. 9

Divine dyad

Conclusions

The compositional language that characterizes Schoenberg's last completed creation, *De Profundis*, represents a proposal to reconcile the gravitational and non-gravitational musical systems. Analysing the series as a group of all-combinatorial hexachords, we noticed a certain symmetry, that the composer uses next to another preference – the one for the 3rd interval. Looking at the tone row as a sum of 2 dyads, we noticed the interest of the composer for the relaxation – tension binomial (or dissonant - consonant binomial).

As a mature composition, in which the author wanted to confess his spiritual values, the choices regarding the tone row highlight a desire to experience and reconcile dualities such as consonance - dissonance and atonality- tonality. These aspects convince us of the plenitude at which Schoenberg arrived in his last compositional period, in which he chose to express himself, without exclusively choosing one language.

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