

# Intersemiotic relations through the bias of semi-symbolism and oppositional geometry: the nocturnal inspiration

Daniel Felix da Costa Júnior\*

## Abstract

*The study of intertextualities presents specific inquiries regarding interart relations. One of these refers to the correspondence of intersemiotic translation/transposition. The present study analyzes two texts from different semiotic systems (painting and music) that are related as “text of origin” and “motivated text”: The Night Watch, by the painter Rembrandt, and Nachtmusik I, by the conductor Gustav Mahler. The theoretical/methodological procedure focuses on the concept of semi-symbolism, amplifications of the traditional square of oppositions, and the musical semiotics of tonal melodies. Considering the respective differences between music and painting, similarities were observed between the content and the expression. The general proposal is that, in the above mentioned type of intertextual relation, at least one of the several relations that exist between both levels must be identifiable as similar case in the text of origin. An interart relation hypercube is produced through an equivalence approximation with formal logic, which allows the visualization of relations between the two levels of both texts. The intention of the results of the present analysis is to contribute towards the detection of deep intertextual relations.*

**Keywords:** intersemiotic translation; semi-symbolism; oppositional geometry; painting; music.

## 1. Introduction

As stated by Clüver (1997, p. 54), regarding interart studies, “[...] correspondence issues remain tangled.” How does a stroke in a painting correspond to a melodic line? Or how does color correspond to timbre? If it was not for the sign mediation of some titles and descriptions, many intertextualities would not be perceived by inattentive onlookers. Nonverbal text titles and graphic symbols are means of intellectual appropriation, a way of providing intelligibility to that which is sensitive; a way through which the approximation between *The Night Watch* painting and the *Nachtmusik* symphonic movement would not be noticeable at first sight. However, this immediacy of verbal language used in the two aforementioned titles may conceal, even if only for a short period, many semiotic aspects of pictorial art and musical sounds.

The association between two texts can be referred as translation, transposition or intertextuality in various reference contexts. The term is not necessarily important, but the phenomenon is. The overwhelming absorption of a subject caused by contacting another subject's

product induces a new way to relate with the world. Teixeira (2014, p. 271) would synthesize the phenomenon as a complex enunciation that “[...] establishes itself between subjects that, touched by a text, respond to it with another text, which refers to the first one, but is already different from it.”

*The Night Watch* (*De Nachtwacht*) is a famous painting of the Dutch painter Rembrandt, and is the starting point for the analysis of the present study. The novel characteristic of this work of art reverberated among several artists of the coming centuries. The figurative insertion of motion in collective portraits was an innovation followed by both Rembrandt and his fellow compatriot Hals. However, Rembrandt managed to amplify this motion by inserting it into action.

*Nachtmusik I* (night music) is the second movement of *Symphony No. 7* by the Czech-Austrian composer Gustav Mahler. The piece completes the pair of works of art analyzed in the present study due to their intertextual characteristics in relation to Rembrandt, which was widely referred to in the music literature: “[...] the first of the two ‘night music’ movements had been inspired by Rembrandt's painting *The*

*Night Watch*, which he had seen in the Rijksmuseum” (Steinberg, 2004, p. 229).

The objective of the present study is to verify how meaning effects are built in both pieces. This is done by analyzing the most evident aspects of Rembrandt’s painting, which then supported the meaning construction in Mahler’s piece. The theoretical reference to semi-symbolic categories is believed to be able to indicate the similarities that best approximate the elusive correspondences between different semiotic systems. Thus, the corpus of this study is organized following these two texts (see Table 1).

Text	Title	Authorship	Date	Aesthetic
1	The Night Watch <sup>1</sup>	Rembrandt	1642	Baroque
2	Nachtmusik I2	Gustav Mahler	1905	Post-romanticism

**Table 1** – Design of the corpus of the study

Two questions guide this investigation: is there a correspondence between the expression planes<sup>3</sup>, on the one hand, and the content planes of both texts, on the other hand? How would semi-symbolic categories facilitate the approach to inter-relatable nonverbal texts?

The hypothesis of this study is that semi-symbolism is a convenient resource for nonverbal languages, especially regarding Greimas’s assertion (2004, p. 94) referring to “[...] plastic semiotics as a particular case of semi-symbolic semiotics”. At its base, semi-symbolism is binary. Because of this, it tends to move away epistemologically from tensive grading (the more X, the less Y or the more X, the more Y) and move closer to binarisms of the traditional square<sup>4</sup>. The logical framework of the square is considered to be able to list both matrix opposition and matrix-dependent gradual oppositions. Regardless of different kinds of

expression, the relation with the content would offer similar phoric<sup>5</sup> patterns, which would be at similar opposing poles in both texts of the corpus.

The present study contains following sections: Section 2 addresses plastic semiotics in Text 1; Section 3 analyzes musical semiotics in Text 2, with due references to intersemiotic transposition; Section 4 evaluates semi-symbolism with logic precepts; and, finally, Section 5 closes considerations of the study.

## 2. Semiotics and nonverbal communication

Semiotics is a discipline concerned with the production of patterns to describe meaning. It aims to describe predictable models that are useful for different types of communication: verbal, nonverbal and syncretic. Although semiotic studies is relatively recent, its object of study is nothing new. The investigation of signs and meaning has occurred from classical antiquity – e.g. Plato, Aristotle – until the middle and modern ages – Locke, Kant. Aware of the fluidity of the studies on truth-values in sentences, semiotics does not propose to investigate the truth from discourse and signs, only the simulacrum of the truth in order for it to preferably not resort to artifacts outside the text to construct meaning (Cortina & Marchezan, 2004, p. 394).

There is an Anglo-Saxon viewpoint of semiotics that was introduced by Charles Peirce, and there is a French viewpoint of semiotics founded mainly by Algirda Julius Greimas. The analyses in this paper follow the French theory, thus the adopted viewpoint encompasses all levels of meaning production, since the text/discourse is seen as a semiotic process, i.e.:

[...] semiotic process appears as a set of discursive practices: linguistic practices (verbal behaviors) and non-linguistic practices (significant somatic behaviors, manifested through sensorial orders) [...] the terms discourse and text have been used to equally designate non-linguistic semiotic processes (a ritual, a movie, or a cartoon are all therefore considered as

<sup>1</sup> Available at: <<https://www.rijksmuseum.nl/en/rijksstudio/artists/rembrandt-harmensz-van-rijn/objects#/SK-C-5,0>>.

<sup>2</sup> The sample used in this study was played by the Philharmonia Orchestra (cf. Sinopoli, 2010).

<sup>3</sup> The use of the word “plane” is common in glossematics, semiotics and various schools of linguistics. Furthermore, the terms “content” and “expression” – presented in other sections of this paper – must be understood as abbreviations for “content plane” and “expression plane”, respectively.

<sup>4</sup> On the other hand, it’s also viable to use tensive grading associated with semi-symbolism – Tensive Semiotics is developed mainly by Zilberberg (2006).

<sup>5</sup> The term is associated with the thymic category, i.e., the category that relates to the world of emotions and feelings. (cf. Greimas & Courtés, 1983, p. 462-463).

discourses or texts). (Greimas & Courtés, 1983, p.125-126)<sup>6</sup>

This understanding of the text allows multiplicity among the investigated genres and development of what is defined as plastic semiotics, song semiotics, musical semiotics, etc., which are nothing more than amplifications of the same substantiated by Greimas. The object of semiotics is defined by the relation between the content and the expression. However, during most of the development of standard semiotics<sup>7</sup>, emphasis has been given to the content (Santos, 2014, p. 250).

The emphasis given to the content and to the *generative path of meaning*<sup>8</sup> was thought to convey the idea that the expression was only an exteriorization of the content, a secondary type. This was a misconception, since the expression establishes various relations that amplify the meanings of a text. The ontology of the expression is autonomous and gains magnitude especially in abstract paintings, in which relations with the content are difficult to detect. Admitting the relevance of the expression was what triggered the establishment of investigations that began in the 1980s, with the study conducted by Floch (1985). In addition to indicating the usefulness of semi-symbolism in expression analyses, Greimas (2004, p. 92) defined semi-symbolic semiotics by the “[...] conformity between two planes of the acknowledged language as if happening not between isolated elements, as observed in symbolic semiotics, but between their categories.”

In the following sections, the texts of the corpus will be detailed according to this line of approach.

### The Night Watch – an iconographic view

Figurativization of the exterior world is an expected characteristic for the portrait genre. However, *The Night Watch* goes beyond this figurativeness and escapes the portrait tradition

of depicting queued characters in a static position (Figure 1). The painting is centered on the theme of the chores of a militia of arquebusiers. Militaries fill the canvas and are positioned in front of a building that is partially hidden by the penumbra. The representation of Captain Frans B. Cocq is highlighted in the center of the canvas, gesticulating and talking to another featured character: Lieutenant Willem Ruytenburg. In addition to these individuals, under a bright beam of light and in golden shades, there is a young lady who composes the scene, even though she is not part of the company. This lady presents a bird attached to her waist and seems to be a reference to the militiamen's symbol of a rooster's foot in their coat of arms. A barking dog and a running boy complete the set of characters that do not belong to the militia. In order to pose for the picture, the members of the company have a choice between two options: doing manual labor or talking with their cohorts.



Fig. 1 – The Night Watch (source: Rijksmuseum)

### The content

The content of a visual text induces the figurative path as the initial procedure to analyze content. Figures refer to fundamental level semantic categories, alternated by the narrative level.

Spears, arquebuses, and banners signal the military isotopy of the objects in scene. Mentioning the military theme alone would be enough to intuitively list two related thematic aspects: authority and diligence. However, without great efforts, the materiality of both aspects is noticeable by the oppositions of

<sup>6</sup> All quotations from the Portuguese references are translated by the author of this paper.

<sup>7</sup> The first phase of semiotics is known as “standard semiotics” and corresponds to the period between *Sémantique Structurale* (Greimas, 1966) and *Sémiotique* (the dictionary by Greimas & Courtés, 1979 [1983]).

<sup>8</sup> The generative path of meaning is organized in three levels: the fundamental level (also referred as deep or denotative level), the narrative level (an intermediate level), and the discursive level (a connotative or surface level). (cf. Greimas & Courtés, 1983).

authority vs. subalternity and diligence vs. dispersion. A *figurative path of authority* is observed in which the actors that are located more to the center of the painting and under the light are in conjunction with the object-value *order*. In turn, actors who are more peripherally positioned and away from the light are in conjunction with the object-value *obedience*, composing, therefore, the *figurative path of subalternity*. The actors, when observed under the perspective of collectiveness, try to perform their military actions and move closer to the object-value *dedication*, which is reiterated not only by individuals handling gear but also by their facial expressions of concentration. However, the existence of some actors that are in disjunction with this dedication—such as the young woman, the running boy, and a few militiamen with facial tones of conspiracy—indicate that they are under yet another figurative route, the *figurative path of dispersion/divergence*.

At a fundamental level, the narrative foundation suggests a basic semantic category under the idea of /continuity/ vs. /discontinuity/ in the semiotic square. The “partially interrupted” element indicates the contradiction relation that would be obtained by denying the term “continuous”, similar to the contradiction of considering the term “undivided” as a denial of the term “discontinuous” (Figure 2).

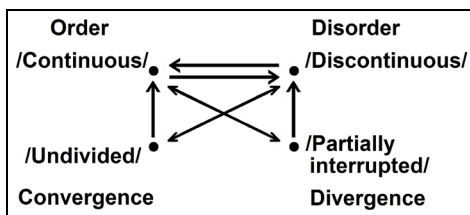


Fig. 2 – Content relations of Text 1<sup>9</sup>

Authority, subalternity and diligence seem to be elements united by the greater objective of *continuity of order*. In turn, dispersion, disobedience and conspiracy are elements that would generate discontinuity, but in the scene only cause partial interruption of continuity. The *order* projected as a euphoric (the term is an essential feature of axiology and is considered a

positive evaluation)<sup>10</sup> starting point generates a path of conformity that modalizes subjects by a must-do, strengthened by actions that converge to promote its maintenance.

### The expression

Plastic semiotics presents a special inclination towards the expression. Thus, the present study encompasses the formulation proposed by Greimas (2004, p. 85), which indicates the topological dimension as the deepest level of the expression. In addition, the distinction proposed by Oliveira (2004, p. 118) was maintained, which traces a methodological route for the expression’s analysis: icons, at a surface level; figures, at an intermediate level; and non-figurative features, at a deep level. The latter level involves the material dimension (e.g. smooth vs. rough), including the dimensions (eidetic, chromatic and topological) mentioned in the study of Greimas.

The asymmetric tendency of the Baroque style provides a sense of reality, allowing the identification of iconic-figurative elements and light distribution. Light and dark areas favor the visibility of chromatic masses that delineate figurative elements. This sense of reality is built on the choice of an urban scenario over which natural light highlights only specific points. The opposition of *light* vs. *dark* is considered one of the most typical references to the Baroque style. Due to this stylistic characteristic, the light that shines only over points that are meant to be highlighted suggests perception of artificial lighting, contributing towards the fame of this painting as a depiction of a night scene<sup>11</sup>. This similarity with artificial light, as opposed to large shaded spaces, induces a sense of intimacy, as suggested by Corrain (2004) regarding the spatiality of night light. This interplay between light and dark is exactly what produces the effect of depth and makes actors that are under the

<sup>10</sup> Euphoria is the positive term of the thymic category and denotes feeling of well-being or joy.

<sup>11</sup> The term “contribute” was used because other factors are included in this discussion. The question of this being either a day or night scene has been a controversial issue since the 19<sup>th</sup> century. However, according to the Stichting Foundation (1989, p. 453), abandoning the idea of a “night scene” helped avoid speculations about what were the reasons for the company to be performing a military activity after dark.

<sup>9</sup> Source: elaborated by the author. With the exception of Figures 1, 4 and 7, all Figures and Tables introduced in the present study were elaborated by the author.

spotlight seem to come closer to the enunciatee<sup>12</sup>.

Light is inferred to be cast from a diagonal/left direction, even without significant presence of lighting in the upper area of the painting. The position of the shadows is an indication that light comes from above. Shades of white, gold and ochre overlap in the brightness provided by the focus of light. Even the dark colors of Captain Cocq's clothes remain visible due to the brightness of the light. The photochromic dimension of light vs. dark is thus raised.

There is also the topological dimension that, in the present case, is organized by the contrast of *central* vs. *peripheral*. Actors with higher relevance in the scene are positioned near the center, while those of lower relevance have a more peripheral position. Some relevance should be attributed to the lady with the rooster, for two reasons: firstly, although she is not exactly in the center of the painting, she walks towards it; and secondly, she holds one of the focuses of light in the painting. Therefore, the young lady presents both "brightness" and "emerging centrality", which give her a *non-peripheral* characteristic, a complementarity status when compared to the *central* status of the militia captain and lieutenant. These relations can be articulated as shown in the square of Figure 3.

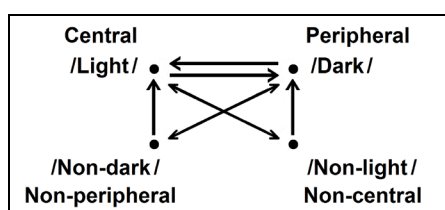


Fig. 3 – Expression relations of Text 1

The homologation of semi-symbolic categories follows a semiotic path with the terms of the content (order : disorder / continuous : discontinuous) and the features of the expression (central : peripheral / light : dark). The *clearer* (or more illuminated) and the more *central* an element/actor is, the closer to the categories of *order* and *continuity* it is. Since total darkness is not achieved, total discontinuity and disorder are not materialized

either. Thus, the piece ranges from light/order to partial darkness and momentary disorder. It seems that the content is related with darkness in a dysphoric<sup>13</sup> way (associated to unpleasant sensations). In turn, the expression, especially regarding the Baroque aesthetics, presents a euphoric value (indicating a sense of well-being) for the dark shades.

### 3. Intersemiosis

The matter of "intersemiotic translation" involves the relation between texts using various sign systems that take a given original text as reference. Clüver (1997, p. 41-42) alerts for possible inadequacies of the term, considering that translation is a specific case of "intersemiotic transposition" and, in a broad sense, a "transculturation". A text that is inspired by another usually presents articulation of substitutions and semi-equivalences. In this respect, Teixeira (2014, p. 272) affirms that adaptations that are most successful consider the starting text simply as a "[...] narrative pretext for an autonomous accomplishment". This would be the case of *Nachtmusik I*, in which "Mahler had not wanted to describe Rembrandt's *Night Watch* in music but had rather wanted to offer a 'point of comparison'" (Steinberg, 2004, p. 229). In this sense, the present study aims to follow the methodological way of compared studies, dealing with

[...] connections between texts through either similarity and homology relations or contrast, and different categories of either the expression plane or particular syntactic and semantic procedures. This is not about verifying which anecdotic references poetry makes to a painting or in which degree the painting presents figurative elements of a narrative (Teixeira, 2014, p. 272-273).

### The Night Music

*Nachtmusik I* is one of the movements of *Symphony No. 7* of maestro Gustav Mahler. It is a piece composed of five movements – *Langsam*, *Nachtmusik I*, *Scherzo*, *Nachtmusik II*, and *Rondo-Finale* –, of which only the second is inspired by Rembrandt's painting. Mahler's symphonies have a reputation of being

<sup>12</sup> Enunciator and enunciatee are implicit elements of an enunciation (or speech act). The enunciator is the author/sender of a message addressed to an enunciatee (receiver/reader).

<sup>13</sup> Dysphoria is the negative term to the thymic category and denotes unpleasant sensations.

imposing, partly because of the total time of performance (most of them over seventy minutes long), and due to the large amount of musicians required to perform them, including the human voice as an instrument. The maestro justified that a symphony: “[...] must be like the world. It must embrace everything” (Sibelius’ letter, apud Mitchell, 1995, p. 286). *Symphony No. 7* was composed between 1904 and 1905, and is considered one of the least popular pieces of the musician, although, according to Fischer (2011, p. 458), it presented the potential to be a favorite, had it not been placed within Mahler’s last phases.

The night theme, here, has little to do with his predecessors John Field and Frédéric Chopin, who composed *nocturnes* with high loads of melancholy. However, neither is it a cheerful and humorous piece, as Mahler himself stated in a letter addressed to Henri Hinrichsen (Klemm, 1979)<sup>14</sup>. This last assertion most certainly was due to the fact that the author did not agree with the nihilist ending that he himself had constructed for his Sixth Symphony. In addition, he showed that the same questionings can lead to a grander and more optimistic response of life: the *Rondo-Finale* of *Symphony No. 7*. Listeners are driven through a nearly synesthetic experience of their presence in the world: at the beginning of *Symphony No. 7*, the listener has a sensation of walking on solid ground (*Langsam*), but that sensation is weakened by the shadows of the night (in both “*Nachtmusiken*”). In the ending, the listener’s vision is elegantly tuned, becoming blinded by a magnificent sun and stunned by exuberant noise (*Rondo-Finale*) that is triggered by the brass section and percussion instruments (Fischer, 2011, p. 462).

The second movement of this symphony corresponds to approximately seventeen minutes, a symphonic fragment that will be analyzed under the precepts of musical semiotics in the following sections.

### The content

Accepting that music presents a plane of content and a plane of expression is to assume that music is similar to language and, therefore, presents its own semiotic systematicity. However, unlike vocal songs with words, in which language contributes to the making of music, instrumental music does not operate with words

and demands its own signification route. This route cannot be evaluated as a *language*, from the Saussurean point of view (in the signifier-signified relation), but as a *sign system*, from glossematic point of view (in the expression-content relation): “On a more general semiological basis” (Hjelmslev, 1961, p. 107).

Recent studies have discussed tonal melody based on glossematics and the functioning of our vocal apparatus. One of the outcomes of these studies was the theoretical resource of the *quasi-syllable* (o)<sup>15</sup>, which presents a syncretic phoneme of musical notes, similar to “[...] empty containers which have the main finality of transmitting the magnitudes of pitch, duration and intensity”<sup>16</sup> (Carmo Jr., 2007, p. 35). In other words, the characterizing element *toneme* is used for pitch, *chroneme* for duration, and *dynameme* for intensity. Another resource is the rhythmic cell that is created by the hierarchy of these characterizing elements. These resources comprise a paradigmatic analysis, and consequently, a level of denotation that conveys contents of sound: short vs. long, weak vs. strong, low vs. high, associated with distinctive traits of the cell.

The bars presented in Figure 4 represent the first sound of a horn in the beginning of *Nachtmusik I*. This section can be considered as the motive of the melody, the minimum structure required for a person to associate the melodic line with the content of the 2<sup>nd</sup> movement of Mahler’s *Symphony No. 7*.



Fig. 4 – Melodic motive of Text 2 (source: Mahler, 1909, p. 81)

This motive represents two of a total of nine cells that contemplate the first staff of the composition. They were idealized for a duo of horns in Fa, as if they were a pair of voices that

<sup>15</sup> The quasi-syllable was a term used in order to differentiate from the verbal syllable. In fact, it presents the same function as syllables, which are organized in distinctive traits: strong and weak tonicity, long and short duration, etc.

<sup>16</sup> Often syllables carry content – a morpheme, root, affix, inflectional suffix – that adds meaning to the word/lexeme, but a quasi-syllable does not have content in itself – it does not add meaning to the cell (analogous to the word) – it just transmits contents of sound. Vocalise (e.g. ‘Bachianas’ of Villa-Lobos, and ‘Vocalise’ of Rachmaninoff) and humming (*boca chiusa*) are vocal exercises that exemplify the idea of an “empty container”.

<sup>14</sup> The same statement is also contained in Fischer (2011, p. 458).



speak to each other and respond. Though bar divisions make it easier for the musician to read, according to Carmo Jr. (2007, p. 54-55), they may veil the true rhythmic division. In order to perform a feasible analysis of denotation, the linguist proposed the description of these cells in a manner which is similar to the description performed in the present study for Mahler's evaluation.

Some of Mahler's compositions wander through sections that seem to be performed without a strong melodic line, thus earning a reputation of a transitory music between the romanticism and the modernism of atonal compositions. However, this is not the case of *Nachtmusik I*. The 2<sup>nd</sup> movement of *Symphony No. 7* offers melodic stability, uncommon for the author. The introduction staff signals the melodic base that always persists after numerous variations in the harmonic field and tonal evolutions. The cells representing the most persistent section in this melody, or the "ruins" as considered by Adorno (1980, p. 175), are C<sub>1</sub> and C<sub>2</sub>.

The C<sub>1</sub> cell is structured on four notes of equal duration. For this reason they present

chronemes with the same value (+), and only one stronger dynameme (+) in the fourth quasi-syllable. The coincidence of values (+) falls upon the fourth note, which indicates that the tonicity of the cell is on this note (see Figure 5). The C<sub>1</sub> cell reappears countless times within the movement. Since the toneme is not pertinent to the cell, the structure repeats itself even in different pitches: re-so-ti-re, with the horn in the first bar, re-do-mi-so with the violin in bars 63-64, and so-do-mi flat-so with the bassoon in bars 18-19.

The C<sub>2</sub> cell is the most frequent throughout the movement and is reiterated twice only in the first staff. The C<sub>1</sub>, C<sub>2</sub>, and C<sub>3</sub> cells maintain reiteration patterns that are confirmed even in cells with different proportions of chronemes, but that maintain the same tonicity structure. As in the C<sub>3</sub> cell from bar 9, in which the tonicity concerns notes worth 3 beats, in a similar way, the flute of bar 20 maintains the same structure of the C<sub>3</sub> cell, respecting the proportion of ½ the value, with tonicity concerning a note worth 1½ beat.

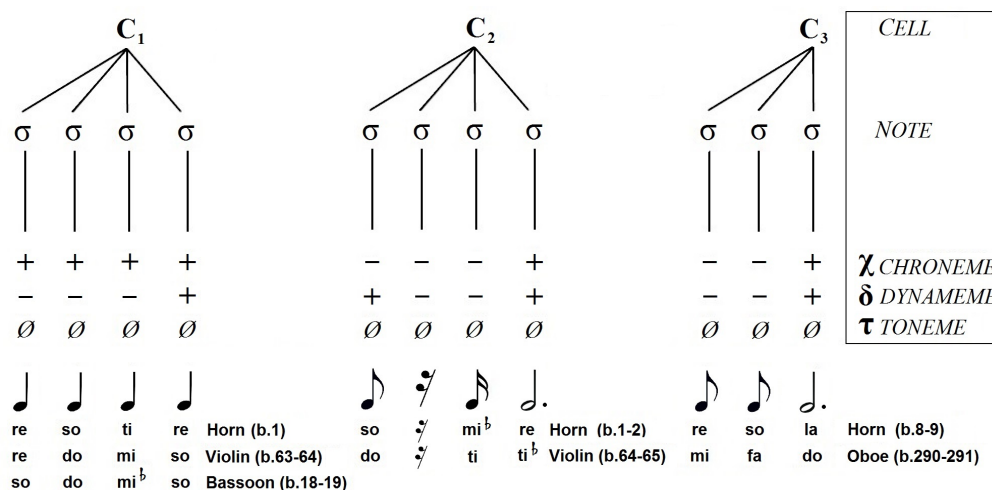


Fig. 5- Cells in Text 2

Several critics confirm the influence of military music in Mahler's style, fact which converges with the theme of *The Night Watch*. Thomas Peattie (2015, p. 30), for example, stated that the highlight provided by horns and trumpets is reminiscent to a military fanfare. Certainly, identifying any figurativeness that refers to the outside world in a piece of music requires an exercise of devotion different to

what would be done for a painting. The fact of the matter is that the main role of the horns is to lead the melodic line in the first *Nachtmusik*, reappearing every time the melody seems to move away from the motive. This protagonist role of the horns and the supporting role of the trumpets and tubas can in fact provide a military isotopy to this movement.

Tonal stability seems to be a conductor of *continuity* as opposed to *discontinuity* (Figure 6). From bars 22 through 28 there is a profusion of instruments being played together (piccolo, flute, oboe, English horn, clarinet, bassoon, tuba, violin, cello and double bass). Within this harmonic plurality, the tuba fits in a cell that has the same structure as the C<sub>1</sub> cell, while the flute fits in another cell that has a similar structure as the C<sub>3</sub> cell, in which tone dispersion comes back to the centrality of melody, its tonal characteristic.

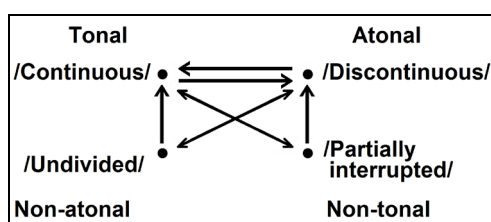


Fig. 6 – Content relations in Text 2

### The expression

The plane of expression of musical semiotics is still at a preliminary phase, especially when aspects such as rhythm and harmony are taken into account. However, there

are already well-established mechanisms for melody analysis. Carmo Jr. (2007) elaborated a scheme for melodic categories that involves denotation level (chronemes, dynamemes, and tonemes) and connotation level, which comes from meanings that were indicated in the melody. For this author, elements such as dynamics, tempo, timbre, arrangement, etc. belong to the connotative level and, therefore, take part in musical expression. Musical density is incremented during interpretation, when the enunciator-interpreter places their subjectivity on the text and amplifies the effects of the meaning of the composition.

Tempo is a category of syntagmatic analysis. Even though temporalization is recorded as chronemes of the denotative level, it represents the vision of the whole, or a portion of the complete meaning, which provides typologies such as “*allegro*”, “*andante*”, “*largo*” and “*presto*”. Tempo is obtained by defining the set of quarter notes that it takes to fill an interval of one minute. In the case of *Nachtmusik I*, there is an *allegro moderato* marking during the first stage, and from bar 30 onwards there is an *andante* marking.



Fig. 7 – Introduction staff of Text 2, duo of horns, bars 1-9 (source: Mahler, 1909, p. 81)

Cell organization suggests moderate acceleration, such as in Figure 7, where tonemes are organized in an ascending form, with the highest notes of the staff in the last cell (C<sub>3</sub>). This ascending conclusion indicates continuity, a calling for new sequences. When ascendance occurs and there is no continuity, the fact tends to be seen as non-perfectivity. This does not occur in the example previously described because the ascendance of the C<sub>3</sub> cell calls for a more accelerated sequence of oboe and clarinet, with up to twelve notes per bar, instead of only four or three.

Some music terminology indicators, such as “*cantabile*”, “*maestoso*”, “*con fuoco*”, etc., are only feeble attempts to delimitate

expressiveness. The features of dynamics present well-delimited opposition: *forte* and *piano* (Carmo Jr., 2007, p. 164). This does not eliminate gradations such as *fortissimo*, *pianissimo*, and *mezzo-forte*. In Figure 7, the marking (*f*) is present in the upper staff of the first horn, and (*p*), in the staff of the second horn, which allows the listener to hear perfectly the first actor and, with some difficulty, the second. This is an echo effect, a reinforcement in the expressive contrast that resembles the contrasts of Baroque paintings and provides a sound effect of *proximity* and *distance*. This is a way for Mahler to remind us of his own aesthetic tendency. In other words, the melody can be stable and tend to a tonal, but its execution does



not have to be like this. These contrasts in dynamics become more visible when observing a time-domain plot of acquired musical sound

(waveform) of *Nachtmusik I*, demonstrating the constant interruption of high pitch sounds by weak sounds and near silence (Figure 8).

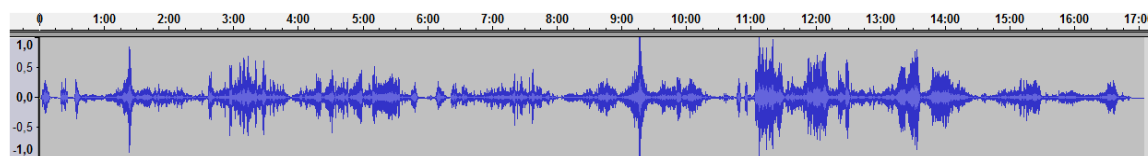


Fig. 8 – Sound waveform image of Text 2

The sound representation<sup>17</sup> suggests climax between the 11<sup>th</sup> and the 14<sup>th</sup> minutes, a sort of narrative of the expression that steadily declines until a near silent ending. Such a dynamic force climax is pre-announced from bar 216 onwards, when, for a moment, the majority of instruments is silent (with whole rests). The remaining instruments are played at almost silent variations of pianissimo (*pp*), molto pianissimo (*ppp*), and below molto pianissimo (*pppp*), until the appearance of the trumpet with strong dynamics (*f*), which resounds the cell with the same tonic distribution of chronemes and dynamemes of cell *C*<sub>2</sub>. After this “militarized” and “singular” announcement of the trumpet, the entire density of instrument plurality is heard, in a short moment when a weak unison (six instruments) can be heard, which rapidly surrenders to harmony variations.

It is as if the expression tended to discontinuity and the content to continuity; as if each account started with different *élan*. The expression presents a more superficial level (or intermediary) involving the relations of proximity vs. distance and boom vs. silence, and a deeper level of involvement regarding forte vs. piano (strong : smooth) and grave vs. presto (very slow : very fast) (Figure 9).

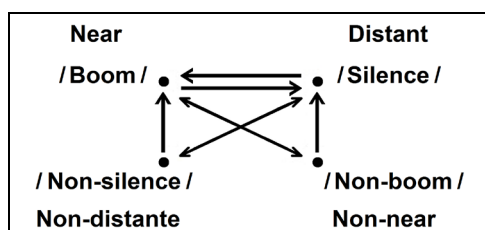


Fig. 9 – Expression relations of Text 2

<sup>17</sup> Image produced using the software Audacity. THE AUDACITY TEAM. A free cross-platform digital audio editor version 1.2.6. Boston: The Free Software Foundation, 2000. <<http://audacity.sourceforge.net/Audacity>>.

#### 4. Semi-symbolism and logic

One of the assumptions of the present study is that semi-symbolism provides binary relations similar to the genesis of the semiotic square. Therefore, at least one similarity relation between the planes<sup>18</sup> of content and expression must be enumerable between two inter-relatable texts, as in the case of interart pieces.

The square was inspired by logic, although some logicians do not accept the semiotic version. In turn, Greimas & Courtés (1983) also had reservations regarding the use of the square in Logic<sup>19</sup>. One of the justifications for this discussion is that the field of Logic prefers universal truths, while the field of Semiotics prefers veridiction, with “truths” that are particular to a certain text. Several semioticians have used squares that have been amplified to hexagons. Cortina & Marchezan (2004, p. 403) presented a known formulation for this issue: *complexity* (or *S*), from the upper relations in the square; and *neutrality* (or *non-S*), from the relations between lower poles. In turn, logicians obtain similar results with oppositional geometry, using only the inference of theorems inspired in the former Aristotelian-based square (Horn, 2012, p. 394-426). For example, square poles are represented by *A*, *E*, *I*, and *O*, while poles that provided the hexagonal shape are *U* and *Y*. Each pole is a concept that can be represented in conjunction and disjunction

<sup>18</sup> Although the Section 4 focuses on logic and semantic oppositional geometry, it does not use the term “plane” in a mathematical sense. In mathematics, plane is a two-dimensional surface that extends infinitely far. If the “mathematical (geometric) plane” was necessary to this analysis, it would be written as “two-dimension”, “bi-dimensional”, “two-dimensional figure” etc. See also footnotes no. 3 and no. 21.

<sup>19</sup> Alessio Moretti (2012, p. 73) stated that logicians and analytic philosophers do not acknowledge the semiotic square. In turn, Greimas & Courtés (1983, p. 368) affirmed that the square distinguishes itself from logic or mathematical constructions with pure syntax formulations.

theorems:  $A (I \wedge U)$ ,  $E (U \wedge O)$ ,  $I (A \vee Y)$ ,  $O (E \vee Y)$ ,  $U (A \vee E)$ , and  $Y (I \wedge O)$ . Considering this method, the relations obtained in sections 2 and 3 of the present study (such as the oppositions light/dark and tonal/atonal) could be obtained simply through these logical inferences, without the aid of any text. This, from a semiotics point of view, would be quite risky, especially if the study had dealt with a text with subversion of natural/usual categories.

The author of this study agrees with the reservations of Greimas & Courtés (1983). Nonetheless, a close approximation between Semiotics and Logic was performed because this approach considers that most oppositions (see Section 2 and 3) are relatively “well-behaved” sememes, therefore they do not mischaracterize the phenomenological experience of *being-there*. Based on Moretti (2012, p. 97), the complexity relation of the upper portion of the square is an “abstraction” between  $S_1$  and  $S_2$ , while the neutrality relation from non- $S_1$  and non- $S_2$  presents a “joint meaning”. In the square, parallel-vertical relations represent complementarity, from which, through bi-simplex logic, Moretti inferred a semiotic cube and, therefore, named the new neutrality relation as  $S_3$ , and the new complexity relation as non- $S_3$ .<sup>20</sup>

Semi-symbolic categories present an epistemological basis in the scientificity of the “distinctive trait”. In other words, an element that opposes another defines itself as a specific object. This justifies the analytic richness of investigating nonverbal texts, such as those of the arts, through semi-symbolism. Thus, returning to the analyses of the previous sections, logical inferences of the expression are listed in Table 2.

Text 1	Syntax	Text 2
$S_1 = \text{light (Lt)}$	$(\text{non-}S_2 \wedge \text{non-}S_3)$	$S_1 = \text{boom (Bm)}$
$S_2 = \text{dark (Dk)}$	$(\text{non-}S_3 \wedge \text{non-}S_1)$	$S_2 = \text{silence (Sl)}$
$\text{non-}S_1 = \text{non-light } (\neg\text{Lt})$	$(S_2 \vee S_3)$	$\text{non-}S_1 = \text{non-boom } (\neg\text{Bm})$

<sup>20</sup> Although at a first glance we are led to believe that complexity should be  $S_3$ , instead of non- $S_3$ , Moretti’s logic makes sense in bi-simplexes, because a negative should not have any complementarity relation with another negative. Bi-simplexes tend to infinity, therefore they can produce a square, a hexagon, a dodecahedron, etc. Oppositional geometry is based on the developments of Blanché’s hexagon (1953).

$\text{non-}S_2 = \text{non-dark } (\neg\text{Dk})$	$(S_1 \vee S_3)$	$\text{non-}S_2 = \text{non-silence } (\neg\text{Sl})$
$S_3 = \text{half tone } (\neg\text{Tp})$	$(\text{non-}S_1 \wedge \text{non-}S_2)$	$S_3 = \text{non-audible } (\neg\text{A})$
$\text{non-}S_3 = \text{plain tone } (\text{Tp})$	$(S_1 \vee S_2)$	$\text{non-}S_3 = \text{audible } (\text{A})$

**Table 2** – Opposition elements in the corpus and relational syntax

Necessary and specific sensorialities for each text play an enunciative function, manipulating sensations with various objectives in order to obtain contrast effects. In this sense, *light* is proportionally related to *boom* as *dark* is proportionally related to *silence*, by the simple aspect of the body’s ability to feel. Visibility and audibility are usually presented in a euphoric way because the denial of both implies in the deprival of the ability to perceive and know the world. This does not prevent aesthetics and texts to subvert from euphoric to dysphoric. Therefore, light and dark, and boom and silence associate with the *order/tonality* of the content, which ultimately can be seen as *continuity* and *discontinuity*. Thus, there are logical inferences for the content (Table 3).

$S_1 = \text{continuous}$	C	$S_2 = \text{discontinuous}$	D
$\text{non-}S_1 = \text{partially interrupted/non-continuous}$	$\neg\text{C}$	$\text{non-}S_2 = \text{undivided/non-discontinuous}$	$\neg\text{D}$
$S_3 = \text{particularity}$	P	$\text{non-}S_3 = \text{generality}$	G

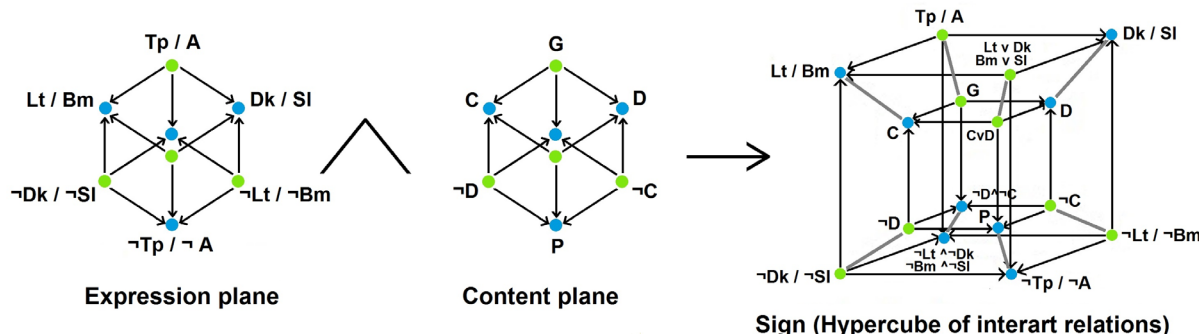
**Table 3** – Opposition elements in the content

By observing the sensorial criterion, light (Lt) and boom (Bm) were positioned side by side (Figure 10). This is because both perform the meaning of the syntactic function ( $\text{non-}S_2 \wedge \text{non-}S_3$ ) and also perform the semantic function of maximum exacerbation of the sensorial-body aspect which they represent. Dark (Dk) and silence (Sl) are values directly opposed to light and boom, and, together, they govern the external structure of the tesseract<sup>21</sup>. Returning to Text 1, it is as if the illuminated lady were in equality with the sound of the first horn of Text 2, which are two enunciative elements that fit in the value of  $\neg\text{Dk}$  and  $\neg\text{Sl}$  (base of the hypercube).

<sup>21</sup> The tesseract is a hypercube (4-cube) with 16 vertices. A hypercube is a geometric figure in a Euclidean space of  $n$ -dimensions that is analogous to a square ( $n=2$ ) and a cube ( $n=3$ ) (cf. Bowen, 1982).

In other words, they deny darkness and silence, but do not completely reach light or boom. Rather, they complement the sense of Lt and Bm (top of the hypercube). Even considering that dark tones ( $\neg$ Lt) prevail, there are a few spaces in Text 1 where there is total darkness (Dk), where nothing can actually be seen. The same situation occurs in Text 2, where although there are

several near silence moments ( $\neg$ Bm), with sixteenth rest, eighth rest and quarter rest, there is only actually silence (Sl) when the movement ends. Despite the flirt with Dk and Sl values, the texts in the corpus present mechanisms that mainly make themselves effective starting from the trapezoidal base towards the upper left extremities.



**Fig. 10** – Saliency of the interart relation. Legend: (Lt) light, (Dk) dark, (Tp) plain tone, (Bm) boom, (Sl) silence, (A) audible, (C) continuous, (D) discontinuous, (G) generality, (P) particularity, ( $\neg$ ) denial, ( $\wedge$ ) conjunction, ( $\vee$ ) disjunction

This semiotic and logical view can mutually cooperate in the understanding of the building of sense prompted in the text. The quadrilateral, or hexagonal, structure helps in the visualization of enunciative strategies. Even considering that the square was originally projected to address the deep level of the content, it is widely used by semioticians at various levels of analyses. Finally, with the results obtained so far, some similarity aspects could be evaluated in the present study between the texts of the corpus. This includes the complexification of the square when suggesting the *hypercube* (more specifically, a tesseract) for intersemiotic transposition: a structure that maintains the content plane in its deepest area, and the expression plane in its superficial area (Figure 10).

## 5. Conclusion

Replicating the initial quote by Clüver: yes, interart correspondences remain tangled. However, preluding a new organization is possible by isolating the most evident sensorial channel of a given nonverbal work of art. Visibility in arts and audibility in music are sensorial ways of experiencing the world, without which things do not become cognisable. It is expected that the concealability of dark tones and sparing light is discursively

comparable to the concealability of weak sounds and silence. In both cases there is an interplay of contrasts between putting out and re-lighting sensitivities. A strong sound fills an acoustic space, while a weak sound leaves remaining spaces. Likewise, lots of light fills the perceptible space, while little light reduces the perception of space. These forms of expression are forms of filling space.

*The Night Watch* and *Nachtmusik I* are texts that present internal contrasts, both with enunciation strategies that confront predecessor styles of their respective times. Several other elements could be addressed, such as: canvas texture, and the gestures and clothing of the actors by Rembrandt; or major third and minor third note variations by Mahler; or even the tensive effects of symphonic density. The methodological choice flowed towards the most salient aspects of equivalence in interart relation. In sum, each of the oppositional elements of the expression plane maintained syntactic relations between themselves, positioned in the external area of the tesseract, and all of these interacted with the elements of the content plane in the internal area. Thus, aligned with this analytical orientation, synesthetic feeling was avoided in favor of a sensorial unicity that enabled comparisons in geometric structure.

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## Biographical note

Daniel Felix da Costa Júnior is PhD candidate in Doctoral Program of Language Studies, Fluminense Federal University, Brazil. His PhD research concentrates on perspectives of the Embodied Cognition.