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Gestalt Modeling of *Ponteio No. 30* by Camargo Guarnieri

Modelagem gestáltica do Ponteio Nº 30 de Camargo Guarnieri

Helder Alves de Oliveira
Federal University of Paraná

Liduino José Pitombeira de Oliveira
Federal University of Rio de Janeiro

Abstract: The present work proposes the gestalt modeling (hereinafter GM) of *Ponteio No. 30* by Camargo Guarnieri with the purpose of elaborating a compositional system to be used in the planning of a work for solo piano. The creation of this new work was possible based on observations of the structural dispositions of the ponteio in question, following the suggestions by Tenney (1988) for the musical application of the gestalt law of objective group. The initial purpose of this work was to identify and describe in *Ponteio No. 30* these musical suggestions and the relationships between the musical elements in this context. Based on a generalization of these relationships, definitions of the hypothetical system that generated the intertext (*Ponteio No. 30*) were prepared, which served as the basis for planning the new work. The similarities between the two works occur at a deep level, in an abstract way, while the differences between them reside in the different elements used to fill in the structural archetypes and in the decisions regarding parameters not included in the systemic model. We understand that GM is effective for the creation of new works, since it provides a consistent starting point for compositional planning and gives freedom in choosing the elements that must be inserted in the structures of the models and also outside them. In addition, GM has its analytical potential for coherently presenting new perspectives based on the listener's perception.

Keywords: Gestalt Modeling. Gestalt Theory. Systemic Modeling. Guarnieri.

Resumo: O presente trabalho propõe a modelagem gestáltica (doravante MG) do *Ponteio N. 30*, de Camargo Guarnieri, com a finalidade de elaborar um sistema composicional a ser

utilizado no planejamento de uma obra para piano solo. A criação dessa nova obra foi possível a partir das observações das disposições estruturais do ponteio em questão, seguindo as sugestões de Tenney (1988) para aplicação musical da lei gestáltica de grupo objetivo. O propósito inicial deste trabalho foi identificar e descrever no *Ponteio N. 30* essas sugestões musicais e as relações entre os elementos musicais nesse contexto. A partir de uma generalização dessas relações, foram dispostas definições do sistema hipotético gerador do intertexto (*Ponteio N. 30*) que serviram de base para o planejamento da nova obra. As semelhanças entre as duas obras ocorrem em nível profundo, de forma abstrata, enquanto as diferenças entre elas residem nos diferentes elementos usados para preencher os arquétipos estruturais e nas decisões em relação aos parâmetros não incluídos no modelo sistêmico. Compreendemos que a MG é eficaz para a criação de novas obras, visto que fornece um ponto inicial consistente para o planejamento composicional e dá liberdade nas escolhas dos elementos que devem ser inseridos nas estruturas dos modelos e também fora deles. Além disso, a MG tem seu potencial analítico por apresentar de forma coerente novas perspectivas com base na percepção do ouvinte.

Palavras-chave: Modelagem Gestáltica. Teoria da Gestalt. Modelagem Sistêmica. Guarnieri.

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1. Introduction

In this work, we will present the compositional procedures used in the work *Inércia* (which is the last movement of a larger solo piano work entitled *Suíte Gestaltina*, by Helder Oliveira) based on the Gestalt Modeling of Camargo Guarnieri's *Ponteio No. 30*. This analytical-compositional methodology has its origin in the epistemological convergence of Systemic Modeling with Gestalt Theory. The frameworks of both theories will be covered in the following section. Musical suggestions of a specific Gestalt law will be explained in the context of Gestalt musical analysis, which will be applied on the modeling of *Ponteio No. 30*. From this modeling we will propose a hypothetical compositional system (or systemic model) for Guarnieri's piece and apply it in the compositional planning of a new work. Finally, we will present some reflection on the aesthetic characteristics of the new work in relation to *Ponteio No. 30*.

The insertion of Gestalt analysis as a systemic modeling tool is an innovative point of Systemic Modeling. The use of analytical theories is a key aspect in the modeling of musical works, which has already been demonstrated by Liduino Pitombeira (2015a, 2015b), but an experimentation using Systemic Modeling based on Gestalt analysis had not yet been carried out. This work, which is an excerpt of the dissertation by Helder Oliveira (2020), addresses in a

particular and significant way GM as a methodological procedure, which presents itself as a useful resource for the analysis of musical works and also for compositional purposes.

2. Gestalt Modeling (GM)

GM is defined as an analytical-compositional methodology that takes as its starting point the Gestalt structural dispositions of an intertext (a pre-existent musical work) for the creation of new works. GM comes from the convergence of Systemic Modeling with Gestalt Theory. In the two following subsections we will briefly describe each one of these theories.

2.1 Systemic Modeling

The Systemic Modeling methodology "aims at proposing a hypothetical compositional system, or systemic model, which describes the structural functioning of a given musical work." (Pitombeira 2017, p. 2).[1] Systemic Modeling emerged from the synthesis of the Theory of Intertextuality (Kristeva 1969, 2005) with the Theory of Compositional Systems (Pitombeira 2020). According to Flávio Lima (2011, p. 31):

> [...] we can define Intertextuality [...] as a hybrid construction, a mosaic of citations, a procedure of textual borrowings in different types of abstraction, with the purpose of bringing out another text, and where the existence of these borrowings, whether or not they are evident or obscure, they are just simple ingredients in the elaboration process.

Gabriel Mesquita (2018) proposes a taxonomy for intertextual procedures in music, and it includes Systemic Modeling as a type of abstract intertextuality that focuses on the deep musical relationships between the elements of a given work.[2] A compositional system is "a set of guidelines, forming a coherent whole, which coordinates the use and interconnection of musical parameters and materials, with the purpose of producing musical works." (Pitombeira 2020, p.

[1] All translations used in this work we made by the present authors.

[2] The other intertextual typologies in the musical field according to Mesquita (2018) are: homage, quotation, parody, pastiche, profile modeling, rewriting, paraphrase and variation.

47).[3] A compositional system offers only a partial perspective on the operation of specific musical parameters (surface and abstract) or raw materials.[4] An original compositional system is created from scratch, while a modeled system is created from a pre-existing work (whether musical or otherwise). For the case of modeled systems (which is our focus of study in this paper), there is no intention to recreate an original work, but rather to build a model (necessarily partial) with which a new work will be built. This new work resembles the original only in its profound, so to speak, genetic aspects. The compositional system is the final result of systemic modeling and can be presented as a set of guidelines, tables or diagrams of structures and relationships, or as a computational algorithm.

The Systemic Modeling methodology basically consists of three phases: 1) *parametric selection*: the intertext parameters that best suit the analysis are identified through prospective analysis; 2) *analysis*: a large amount of information about the piece is collected according to the chosen parameters; and 3) *parametric generalization*: the values of musical objects are discarded, and only the relationships between these objects are maintained, producing as a result a systemic model. In GM, the first phase is conditioned to the musical suggestions of the Gestalt laws, and the second phase consists of identifying these suggestions and the ways they are used.

This paper presents the insertion of Gestalt analysis as a systemic modeling tool and comprises the results of the first experimentation using Systemic Modeling based on Gestalt analysis.[5]

2.2 Gestalt Analysis

Gestalt music analysis is based on the Theory of Gestalt, a branch of the psychology field. One of the fundamental ideals of this theory is the following: an orderly arrangement of objects exists "[...] when every object is in a place which is determined by its relation to all others." (Koffka 1936, p. 15). To govern this ordering, there are certain factors (also called laws or principles) that define groupings and divisions of objects (units) of a whole. These laws will be

[3] This definition expands the original one proposed by Lima (2011).

[4] For more information on the expanded concept of parameter, see Pitombeira (2018).

[5] A wider range of case studies under this methodology can be found in Oliveira (2020).

discussed below. Perception tends to organize objects into groups called *Gestalten* (Köhler 1992, p. 160). The word *Gestalt*, of Germanic origin, has two meanings: "[...] besides the connotation of shape or form as an attribute of things, it has the meaning of a concrete entity *per se*, which has, or may have, a shape as one of its characteristics." (Köhler 1992, pp. 177–8).

According to Kurt Koffka, there is a general law for the psychophysical organization: the law of *Prägnanz*. It is formulated like this: "[...] psychological organization will always be as "good" as the prevailing conditions allow. In this definition the term "good" is undefined. It embraces such properties as regularity, symmetry, simplicity and others [...]" (Koffka 1936, p. 110). According to Max Wertheimer (1997, p. 79), "[...] there are certain *Präganzstufen* [regions of figural stability] with their appropriate realms or regions, and intermediate stages typically appear "in the sense of" one of these characteristic regions." It is the tendency, therefore, to 'define the indefinite', to 'regulate the non-regular'. Specific manifestations of the law of *Prägnanz*, called factors, were first defined by Wertheimer (1997, pp. 71–88). For the GM of *Ponteio No. 30* by Guarnieri we deliberately selected the law of objective set.[6] According to this law, when a grouping pattern[7] is established, through the varied repetition of a type of behavior, this pattern tends to continue to exist. A series of elements, within a sequence of series that behave in the same way, can be followed either by another set of elements that continues this pattern in different ways, or by a set that behaves in a contrasting way. Fig. 1 presents horizontal series of circles labeled by the letters of the alphabet. If we consider the sequence of series A, B and C, the last series (C) will be perceived as a variation of A because it continues the pattern of the following segmentation: •• •• ••. This pattern was determined through the series B, which repeated this way of grouping in a variety of ways. In another arbitrarily chosen sequence (G, F, E and B), the last series (B) will be

[6] The other laws mentioned by Wertheimer (1997, pp. 71–88) are: proximity, similarity, uniform destiny, direction, closure, and past experience or habit.

[7] A pattern can be considered to arise as soon as a form of organization is repeated. According to Michael Resnik (1981, pp. 530 and 547), "when we are exposed to several instances of a pattern of certain kinds (and are in the right psychological set and have the appropriate purposes) we are by nature struck by the similarity of the instances-we see that they fit a pattern." However, as the author adds in an additional note, "not all patterns are known through exposure to their instances."

perceived as contrast, that is, a disturbance of the grouping pattern • •• •• •, as it presents another type of segmentation (•• •• ••).

Applications of the law of objective set in the musical field have been carried out explicitly by James Tenney (1988), who cites it as one of the factors of cohesion and segregation of *temporal gestalt-units* (TGs)[8] directly related to certain Gestalt laws. According to this author, objective set "[...] will refer to expectations or anticipations arising during a musical experience which are produced by previous events occurring within the same piece […]" (Tenney 1988, p. 44). This factor can be in three ways: a) rhythmic inertia, which is the maintenance of a previously established rhythmic structure; b) specific referential norms (e.g., the tonal system, establishment of a meter as a standard, intervals and sounds of any kind used as referential norms), which provide a standard of comparison of later events, with specific implications for the interpretation of these events; and c) thematic recurrence.

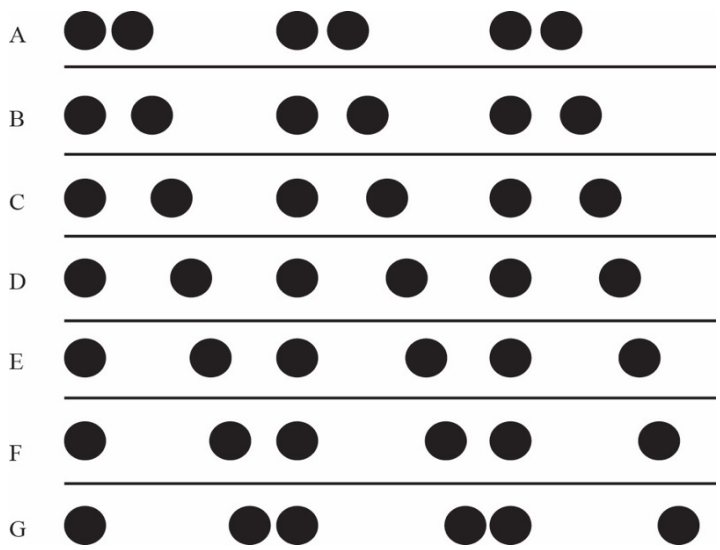


Figure 1: Visual example of the factor of objective set

[8] The TGs are classified according to the following basic hierarchical levels, from the smallest to the largest unit: element, *clang*, sequence, segment, section and the piece itself. The other factors of cohesion and segregation of TGs according to Tenney (1988) are: proximity, similarity, parametric intensity, repetition, and subjective set, the first two having primary effect, and all others secondary effect.

The patterns of relationships specifically in the tonal system are those that pertain to the tonal center (referential pitch level) and the other pitches being interpreted according to that center. As far as the metrical pattern is concerned, the position of events results in upbeat or downbeat interpretation, syncopations being special cases. Also, certain interval patterns are used as reference norms for the perception of patterns through the predominant use of a certain generalized interval and the use of the same interval classes. The concept of generalized interval refers to the non-distinction between interval classifications (major, minor, augmented, diminished, etc.). Finally, sound objects are used as reference norms through the use of repetitions, expanded beyond the notion of motives.

Regarding rhythmic inertia, a rhythmic structure can fit into one of the types of rhythmic grouping according to Grosvenor Cooper and Leonard Meyer (1963), and deviations from this rhythmic pattern for grouping change are achieved, according to Tenney, through syncopations and *hemiolas*. Meyer developed a deep taxonomic work of rhythmic groupings in hierarchical levels. To this end, he proposed four fundamental structures together with Cooper: pulse, meter, beat and rhythm.

> A *pulse* is one of a series of regularly recurring, precisely equivalent stimuli. [...] *Meter* is the measurement of the number of pulses between more or less regularly recurring accents. Therefore, in order for meter to exist, some of the pulses in a series must be accented—marked for consciousness—relative to others. When pulses are thus counted within a metric context, they are referred to as *beats*. [...] *Rhythm* may be defined as the way in which one or more unaccented beats are grouped in relation to an accented one (Cooper; Meyer 1963, pp. 3–4, italics ours).

The rhythmic structure of these authors derives from the prosody, which is "originally versification alone, but currently extended to refer to all features of a language involving stress, pitch, and length of syllables." (Randel 1996, p. 661). Cooper e Meyer (1963, p. 6) determine five types of rhythmic grouping—which do not depend on meter—, derived from prosody: 1) *trochee* (rhythm of two beats, of which the first is accented and the second is not); 2) *iamb* (two beats with accent at the end); 3) *dactyl* (three beats with accent at the beginning); 4) *anapest* (three

beats with accent at the end)[9]; e 5) *amphibrach* (three beats with an emphasis on the center).

Fig. 2 represents the fundamental structures of Cooper and Meyer. Regularly spaced vertical lines constitute the pulses. When such pulses are arbitrarily grouped, a metrical structure is formed. In the case of Fig. 2, groups of three pulses are presented. If each pulse is graphically notated as a quarter note, there will be a triple meter. In this context, each pulse is considered a beat. There are then, in this case, three beats per measure. The first beat is called downbeat, and the others, upbeats. When one or more unaccented beats are grouped together with an accented one, whether or not they coincide with the meter, we have the so-called rhythm. In Fig. 2, the horizontal line symbolizes an accented beat, and the curved line an unaccented beat. The excerpt in Ex. 1 starts with the rhythmic grouping called dactyl. In measures 200–201, highlighted in grey, there is a regrouping of the beats, using hemiola to produce the trochee grouping. The perception of accent, therefore, is not subordinated to meter, but depends on the musical context and will be described in more detail below.

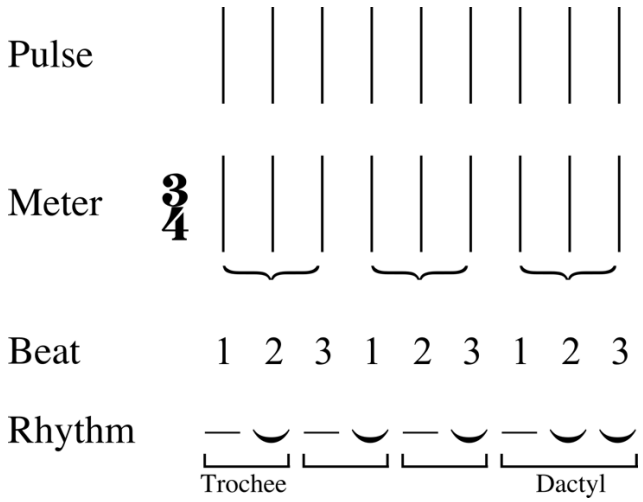
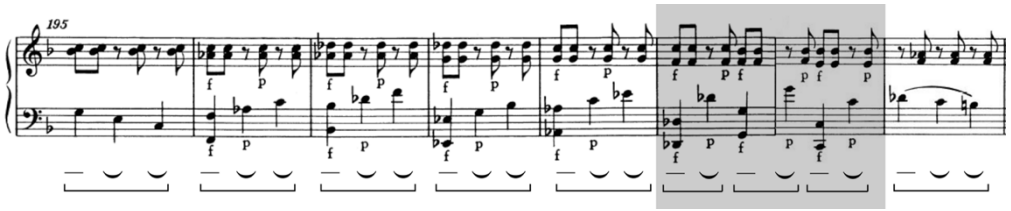


Figure 2: Meyer and Cooper fundamental structures

[9] For the anapest to occur in duple time, one of the two metrical pulses must be divided, setting up three beats.



Example 1: Rhythmic regrouping by hemiola in Wolfgang Amadeus Mozart (1756–1791), *KV 322*, mm. 200–1

It is interesting to note that Cooper and Meyer do not use other rhythmic groupings found in both literary (Baldick 2001) and musical (Williams 1911) prosody. This is a consequence of its own definition of rhythm, which only validates groupings with only one accent. Table 1 presents the 28 possibilities of arrangements with repetition[10] in groups of two to four elements (rhythmic units) of a set B of two elements B = {0,1}, in which 0 corresponds to the unaccented beat, and 1 corresponds to the accented beat. These 28 possibilities and their respective names in Portuguese are described by Mattoso (2010, pp. 253–4) in the context of prosody, and in English/Latin by Chris Baldick (2001) and Charles Abdy Williams (1911). Of the groupings described by Mattoso, Cooper and Meyer use only the numbers 2, 3, 6, 7 and 9.

	Rhythm units				Name in English	Name in Portuguese
1.			0	0	Pyrrhus/pyrric	*Pirríquio/pírrico/díbraco/pariambo/periambo*
2.			**0**	**1**	**Iamb/iambus/jambus**	***Jambo/iambo/jâmbico***
3.			**1**	**0**	**Trochee/choree/choreus**	***Troqueu/coreu/trocaico***
4.			1	1	Spondee	*Espondeu*
5.		0	0	0	Tribrach	*Tríbraco/tribráquico*
6.		**0**	**0**	**1**	**Anapest/antidactylus**	***Anapesto/anapéstico***
7.		**0**	**1**	**0**	**Amphibrach**	***Anfíbraco/anfibráquico***
8.		0	1	1	Bracchius	*Báquio/báquico*
9.		**1**	**0**	**0**	**Dactyl**	***Dáctilo/dactílico***
10.		1	0	1	Cretic/amphimacer	*Crético/anfimacro*
11.		1	1	0	Antibacchius	*Antibáquio/antibáquico/palimbáquio/palimbáquico*
12.		1	1	1	Molossus	*Molosso*
13.	0	0	0	0	Proceleusmatic/tetrabrach	*Proceleusmático*

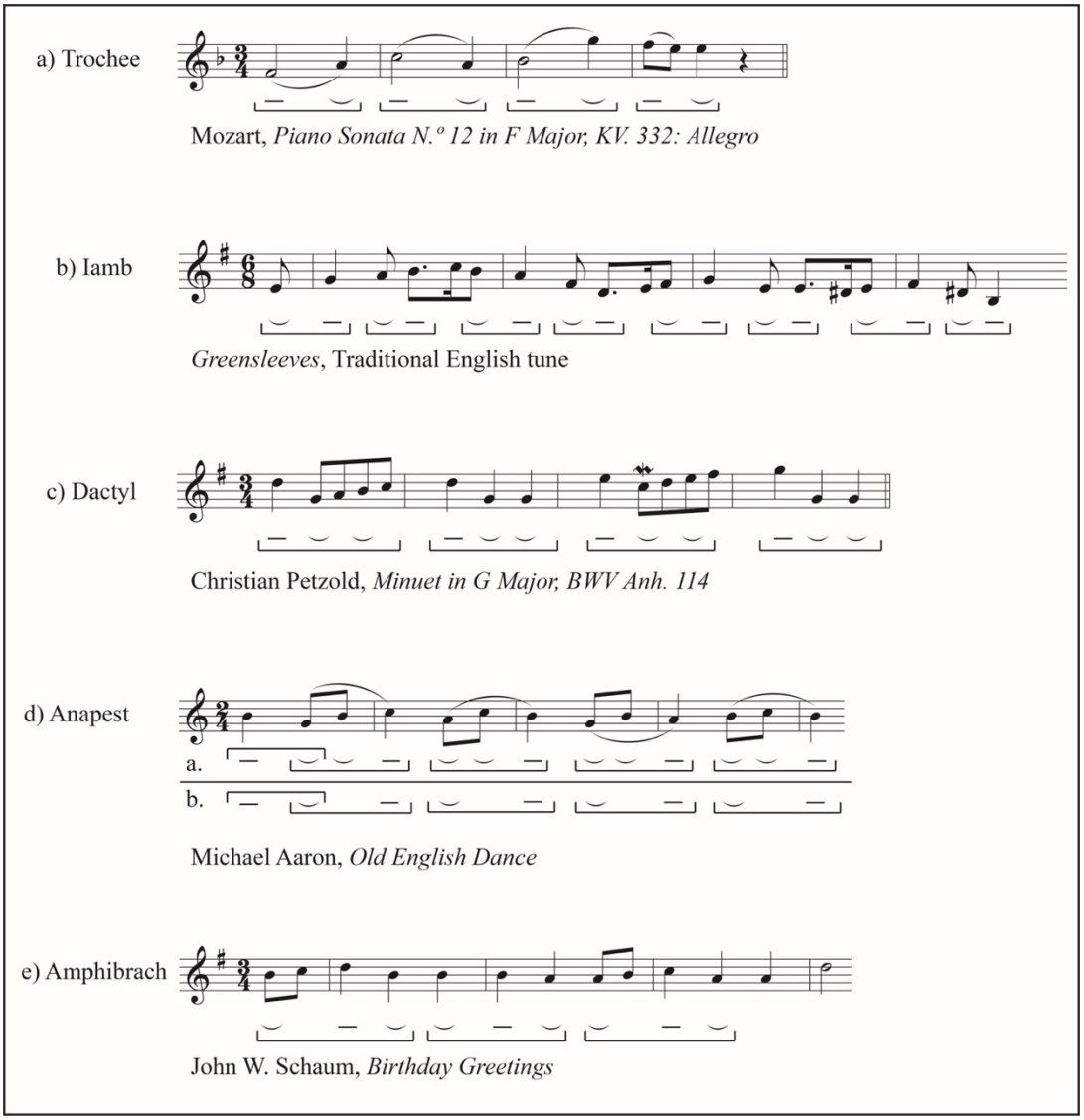
[10] "Arrangement with repetition, or complete arrangement, is a group of p elements of a given set, with n distinct elements, where the change of order determines different groups, although it may have repeated elements. We indicate the complete arrangement by $AR_{n,p}$. In the arrangement with repetition, we have all the elements of the set available for each choice [...]" (Bosquilha; Corrêa; Viveiro 2003, pp. 213–4). The formula used is $AR_{n,p} = n^p$. In order to know the number of groupings of three elements with repetition from the set B = {0,1}, we have: $AR_{2,3} = 2^3 = 8$ groupings, which correspond, in Table 1, to lines 5–12.

14.	0	0	0	1	Quartus paeon	*Peão ou péon quarto*
15.	0	0	1	0	Tertius paeon	*Peão ou péon terceiro*
16.	0	0	1	1	Minos ionic/double iamb	*Jônico menor*
17.	0	1	0	0	Secundus	*Peão ou péon segundo*
18.	0	1	0	1	Diiamb	*Dijambo/dijâmbico*
19.	0	1	1	0	Antispast	*Antíspasto/antispástico*
20.	0	1	1	1	First epitrite	*Epítrito primeiro*
21.	1	0	0	0	Primus paeon	*Peão primeiro/péon primo*
22.	1	0	0	1	Choriamb	*Coriambo/coriâmbico*
23.	1	0	1	0	Ditrochee	*Ditroqueu/ditrocaico/dicoreu*
24.	1	0	1	1	Second epitrite	*Epítrico segundo*
25.	1	1	0	0	Major ionic/double trochee	*Jônico maior*
26.	1	1	0	1	Third epitrite	*Epítrito terceiro*
27.	1	1	1	0	Fouth epitrite	*Epítrito quarto*
28.	1	1	1	1	Dispondee	*Dispondeu*

Table 1: Rhythmic groupings derived from prosody according to Mattoso (2010, pp. 253–4)

Ex. 2 presents musical excerpts with the analysis based on Cooper and Meyer's theory for each of the five types of grouping at the primary rhythmic level.[11] The horizontal line symbolizes the accented beat, and the curved line, an unaccented beat.

[11] Hierarchically, primary level is "the lowest level on which a complete rhythmic group is realized—upon which a strong beat and one or more weak beats are grouped together." (Cooper; Meyer 1963, p. 2). Subsidiary rhythmic motifs formed by minor note values are often part of lower rhythmic levels (*i, ii, iii*, etc.), categorized into a single level (sub-primary level). There are also higher levels, indicated by the numbers 2, 3, etc., while the primary level is indicated by the number 1. These upper levels include, among others, sets of strong and weak measures of major and composite patterns. In this paper, only the primary level will be considered in the GM methodology.

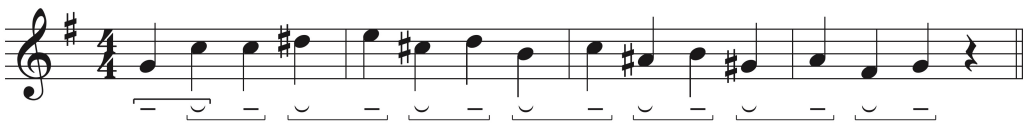


Example 2: Types of rhythmic grouping in reiteration

According to Cooper and Meyer (1963, pp. 13–7), rhythmic grouping is influenced by five factors.[12] The first one is duration: temporal proximity influences rhythmic grouping. This was decisive for the analysis of the passage {b} of Ex. 2, in which it is observed that the temporal interval between the attack points of the first and second notes is smaller than that of the second and third notes. Additionally, it was considered the fact that, when a rhythm is established, there is a tendency of continuation of this pattern. Horizontally, the eighth note tends to join the quarter note, as they are temporally close.

[12] The guidelines for grouping beats into rhythms derived from prosody are presented in detail by Cooper and Meyer (1963), unfolded in Meyer (1973), and are based on the Gestalt laws of proximity and similarity.

The second factor used to establish the rhythmic grouping is the melodic structure: there is separation of groups where there is no proximity of pitches. In the melody of Ex. 3, there is grouping formation of pitches with an interval of one semitone between them. Such groups are separated from each other by intervals ranging from diminished thirds to perfect fourths. The melodic structure factor is not evident in the excerpts of Ex. 2.



Example 3: Example of grouping by melodic structure in Cooper and Meyer (1963, p. 14)

The third factor used to establish the rhythmic grouping is the positioning of the beat: the use of articulation influences the rhythmic grouping. Thus, slurs, as well as staccatos and caesuras, are ways of intensifying separation and proximity. *Crescendi* in groupings with accent at the end can also be considered an intensifying factor. The use of slurs is a resource present in the groups {a} and {d} of Ex. 2. In the passage {d} of Ex. 2, one of the two beats was split to form the third impulse necessary to establish the anapest grouping. An alternative analysis (line b) considers the two eighth notes as a split unaccented beat. In such a situation, the grouping is iambic.

The fourth factor influencing rhythmic grouping is instrumentation. Thus, differences in timbre can also shape or emphasize the rhythmic grouping, by alternating sound sources, spatialization, techniques in the same instrument and dynamics.

Finally, harmony is the last factor used in the rhythmic grouping, that is, the shaping forces of harmony and voice leading influence the rhythmic grouping, as in the excerpt of grouping {c} in Ex. 2. In this case, in a tonal harmonic context, the accented note and the note that follows it may be part of the same implicit harmony, with a tendency to group themselves together. Other factors reinforce the separation into groups: downward inflection is perceived as strong-weak; and the Gs of the second measure are not heard as moving to E of the next measure, but as connected to D. In the excerpt {e} of Ex. 2, there is an impulse from the Bs of the first measure to B of the second measure, and therefore they cannot, in principle, be separated. This B of the second measure can be

contextualized as a suspension (in the context of a dominant harmony, for example) and therefore cannot be separated from A that follows it. The grouping formed by the first three Bs plus A that follows them cannot be classified by Cooper and Meyer's taxonomy because it contains four units.[13] Therefore, the first and second B of the excerpt must be separated. The similarity between the beginnings of the two sub-phrases also corroborates the analysis of the passage.

3. Gestalt Modeling of *Ponteio No. 30*

The purpose of the analysis in this section is to identify and describe in Guarnieri's *Ponteio No. 30* the musical suggestions of the law of objective set, listed in Table 2, according to Tenney (1988). The following step consists of providing some definitions of the hypothetical system that generates this musical work and, finally, to plan the fifth movement (*Inércia*) of a new work titled *Suíte Gestaltina*.

Objective set
Specific referential norms: a) Tonal system b) Metrical dominance c) Intervals and sounds of any kind used as referential norms
Rhythmic inertia
Thematic recurrence

Table 2: Musical suggestions for the Gestalt law used in the GM of *Ponteio No. 30* by Guarnieri

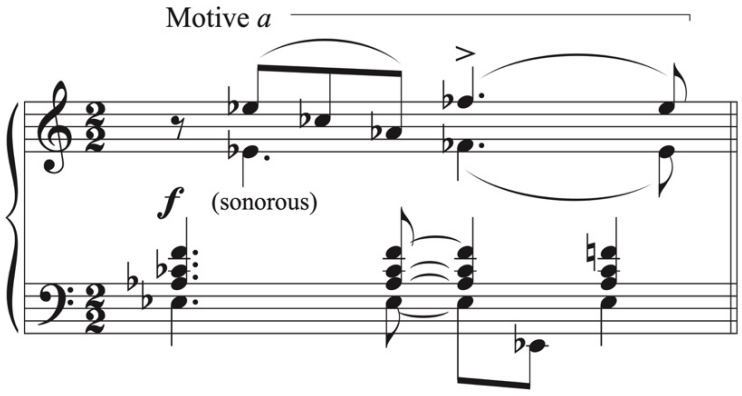
All musical suggestions for the law of objective set were found in *Ponteio No. 30* and will be detailed in the following order: 1) thematic recurrence, 2) referential norm through metrical dominance, 3) rhythmic inertia, 4) referential norm through sonority, and 5) referential norm through tonal system.

With regard to thematic recurrence, the musical work is divided into section A_1 (mm. 1–9), section A_2 (this is the development, and corresponds to mm. 10–25), section A_1' (mm. 26–38), and coda (mm. 38–41). The first nine measures of A_1' are equivalent to the first nine measures of A_1, that is, the melodic content

[13] In Mattoso's prosodic taxonomy (Table 1), this grouping can be classified as tertius paeon. The advantage of using Cooper and Meyer's taxonomy is that the entire excerpt remains amphibrach, thus providing a simpler and more direct analytical view.

is predominantly similar and is considered in this analysis as the theme. Thus, the thematic recurrence takes place from measure 26, in inverted counterpoint. Section A_2 contains, at the beginning, the motivic material of the theme in repetition and later in several fragmentations. Finally, the theme of section A_1' has an extension of four measures at its end, the last of which coinciding with the beginning of the coda.

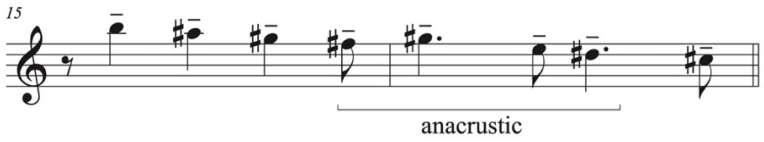
In relation to metrical dominance, the composition contains duple meter throughout. The following procedures occur in the first measure to cover up the perception of the meter: syncopation, acephalic (headless) rhythm, and accentuation. In the rhythmic pattern of the accompaniment, presented in the upper part of the bass clef (Ex. 4), there is a syncopation before the second beat of the measure, characterizing, therefore, the Afro-Brazilian rhythm pattern (3+3+2), which persists predominantly throughout the work. In addition to its function of metric covering, this rhythmic cell is evidence of Guarnieri's nationalism by using a rhythm of oral tradition. Only the last two measures of the theme and the first of the coda do not contain the rhythmic pattern. With regard to the other two procedures for metrical deviation, the melody presents a motive that generates practically all the gestures of the composition, called motive {a}, which has one measure of extension, is acephalic, and its second beat, which was supposed to be weak, is accentuated. Ex. 4 shows the first measure of Guarnieri's *Ponteio No. 30* with these characteristics of metrical dilution.



Example 4: Metrical dilution on the first measure of *Ponteio No. 30* by Guarnieri

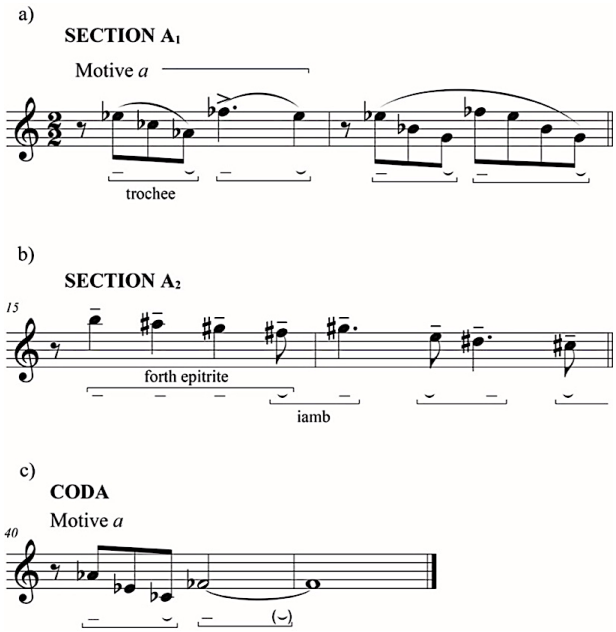
In the melody of section A_2, after six measures following the same acephalic pattern, a restructuring of the beats is noticed. This is the presence of anacrusis (Ex. 5). This deviation from the metrical characteristic of the work ends

at the end of section A_2, since the pattern of the generative motive returns in section A_1'. All these characteristics and their changes influence the perception of the rhythmic groupings of this *Ponteio*, which will be explained in the following musical suggestion.



Example 5: Restructuring of beats from acephalic to anacrustic in *Ponteio No. 30* by Guarnieri, mm. 15–6

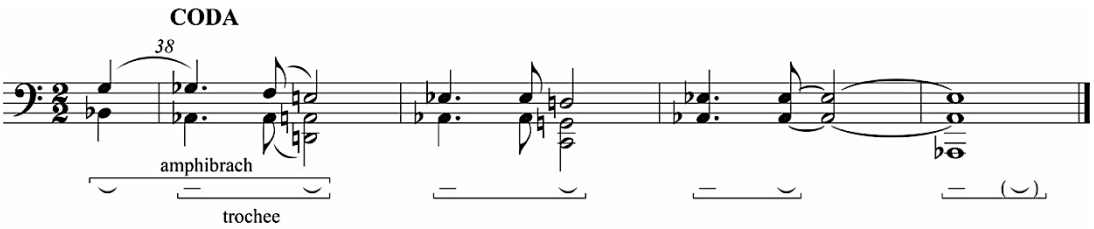
Regarding rhythmic inertia, until the beginning of section A_2, the type of rhythmic grouping used in the main melody is the trochee, with two occurrences per measure, as shown in Ex. 6a. In section A_2, with the exception of its first five measures and mm. 21–3, a new type of grouping remains, called iamb, shown in Ex. 6b. The trochaic grouping returns in section A_1', and in the last appearance of the motive {a} there is an omission in the rhythmic grouping (Ex. 6c) with virtual completion.



Example 6: Rhythmic groupings in the melody of *Ponteio No. 30* by Guarnieri

In relation to the accompaniment, there is maintenance of the amphibrach grouping, with the exception of the coda, which presents the trochaic grouping.

Ex. 7 shows the change in rhythmic grouping type in the accompaniment layer of *Ponteio No. 30*. In the coda, there is a pedal in the upper voice that was not considered in this rhythmic classification.

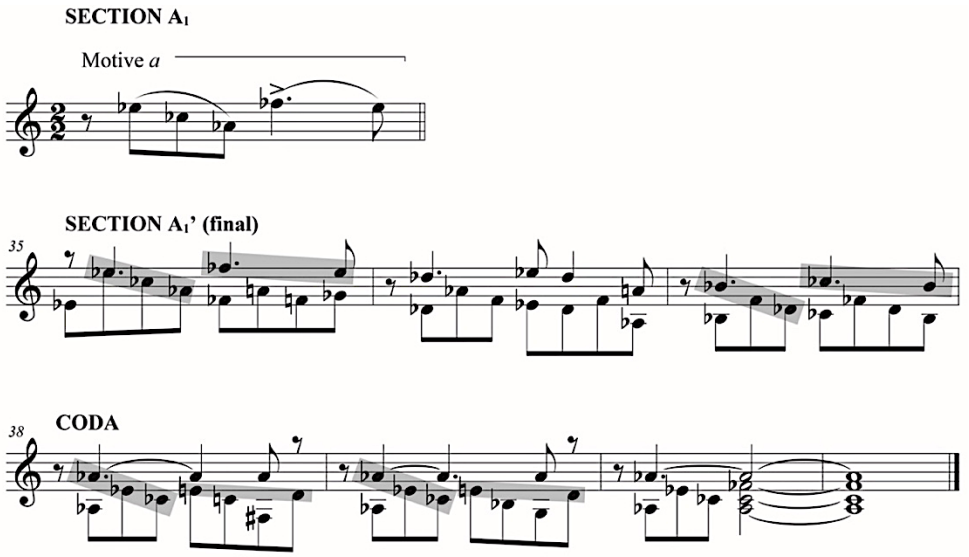


Example 7: Rhythmic groupings in the accompaniment of *Ponteio No. 30* by Guarnieri, mm. 38–41

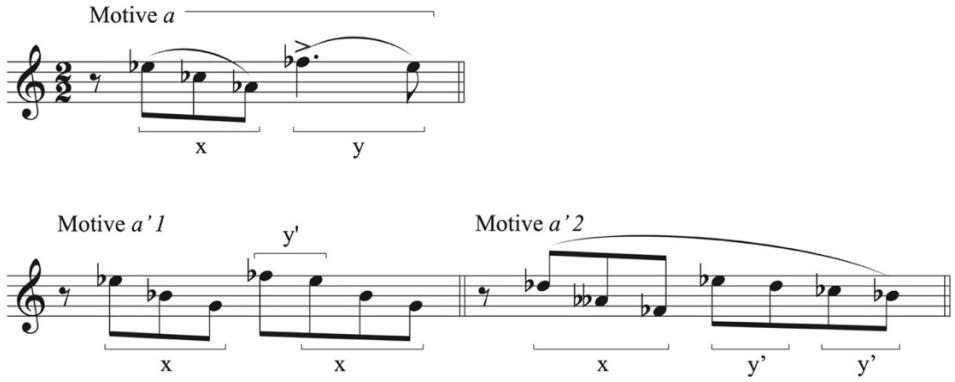
The specific referential norm through the sonority is observed in *Ponteio No. 30* in the following way: the motive {a} is seen as a reference throughout the work for the other musical gestures, which are seen as variations of it. The generative motive consists of a determined rhythmic pattern and the following contour: descending arpeggio of a trichord, ascending and descending movement, i.e., < - - + - > (see Ex. 8). In its complete form, this motive occurs 14 times during the *Ponteio No. 30*: three times in section A_1, four times in section A_2, five times in section A_1', and twice in the coda. From the final phrase of section A_1' (m. 35), the motive {a} is implied (encapsulated in Ex. 8 in gray rectangles) by the use of prolongations. In the coda—unlike what happens before—the fourth pitch of the motive is not higher than the first, but higher than the second, and the motive occurs in the second voice below the main melody.

The motive {a} is formed by figures *x* and *y*. Figure *x* is characterized by two descending leaps, while figure y is characterized by a downward step degree, as shown in Ex. 9. The variation of motive {a} with the same length (one measure), and which appears most frequently, occurs eight times: four times in section A_1 and four times in section A_1'. It will be called motive {a'} and is shown in Ex. 9. The variation {a'} appears in two versions: 1) {a'1}, formed by the figures *x*, *y'*, *x*; and 2) {a'2}, formed by the figures *x*, *y'*, *y'*. Of the four occurrences of {a'} in section A_1, one is in version {a'2}, and the other three are in version {a'1}. In section A_1', the fourth occurrence of {a'} has a substitution of {a'1} for version {a'2}. Ex. 10 contains the last two measures of section A_2, highlighting figure *y* which is worked extensively (occurring 14 times). Ex. 11, on the other hand, contains the occurrences of motives {a} and {a'} in sections A_1 and A_1'—both

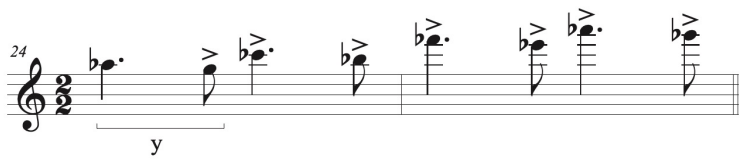
constructed practically with motives {a} and {a'}—, and in the coda, which contains only the motive {a}.



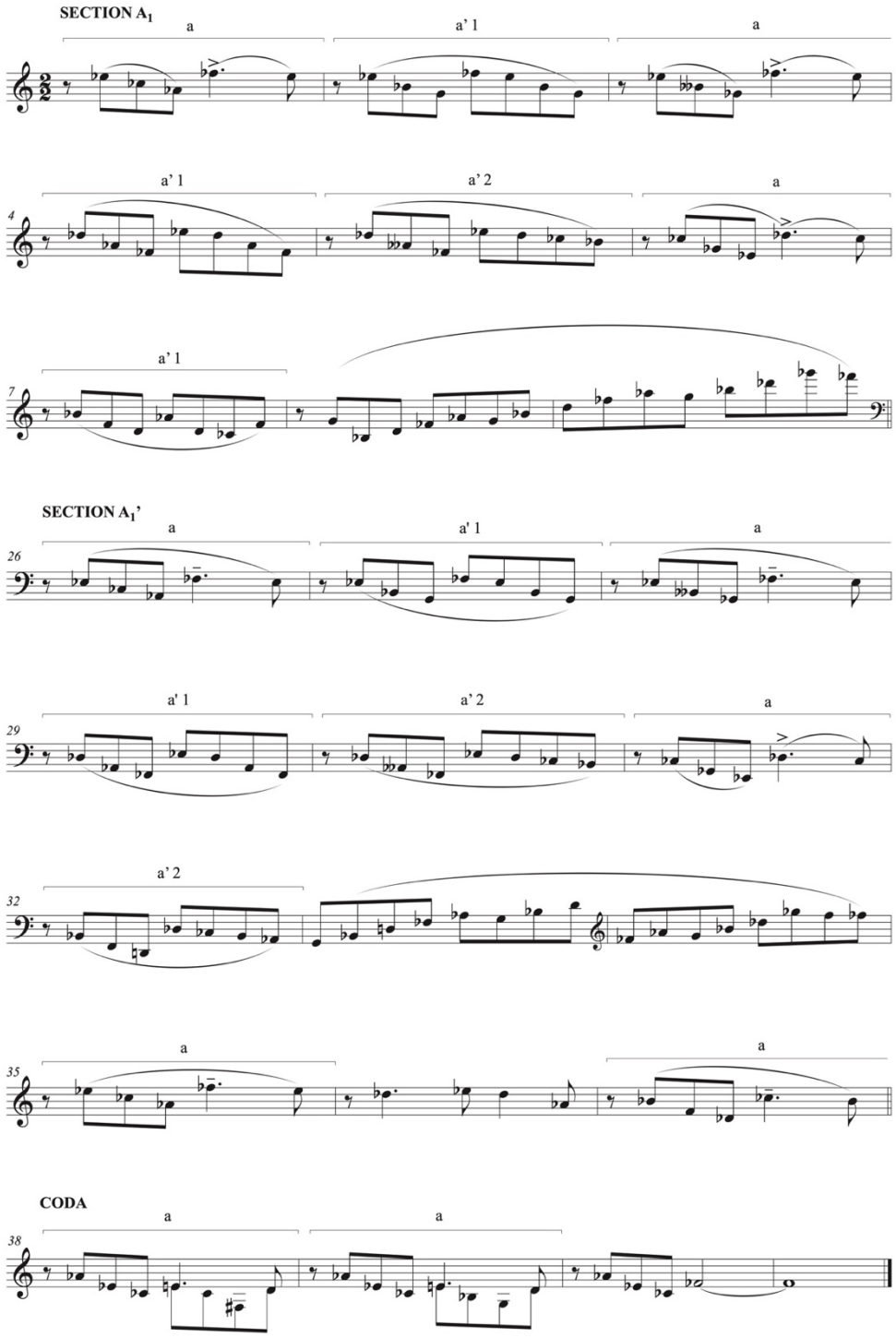
Example 8: Generative motive of musical gestures in Garnieri's *Ponteio No. 30* and their implicit versions



Example 9: Generative motive and two versions of its main variation in *Ponteio No. 30* by Guarnieri



Example 10: Example of extensive use of the motivic figure *y* in section A_2 of *Ponteio No. 30* by Guarnieri, mm. 24–5



Example 11: Complete motives {a} and {a'} in sections A_1, A_1' and the coda of *Ponteio No. 30* by Guarnieri

Finally, in relation to the specific referential norm through the tonal system, the referential pitch level will be seen in this analysis in its harmonic context. Based on the frequency of the typical movement by fifths of the fundamental bass of the chords towards the tonic (T), Table 3 was prepared, containing the classification of the chords according to Allen McHose (1947) and Kostka, Payne and Almén (2018).[14] The secondary dominants and secondary leading-tone chords can be considered in this classification as substitutes of some degrees.

Class	Degree		
	Major mode	Minor mode	
(T)	I	i	
1st	V, vii°	V, vii°	v, VII
2nd	ii, IV	ii°, iv	ii, IV
3rd	vi, I7 (V/IV)	VI, I7 (V/IV)	vi°
4th	iii	III	III (♯5)
5th	(V/iii)	VII	

Table 3: Chord classification based on Allen McHose (1947) and Kostka (2017)

McHose also classified harmonic progressions into the following types: a) *normal* (N): movement from a lower class to a higher class (e.g., V – I); b) *repetition* (Rep): chord reiteration or movement between chords of the same class (e.g., ii – IV, iii – iii); c) *elision* (E): jump of one or more classes towards the tonic (e.g., iiº – i); d) *retrogression* (Ret): movement from a higher class to a lower class, with the exception of the tonic class, which can go anywhere. Even if there is a jump between classes, only a retrogression movement will be considered (e.g., V – IV, V – vi).

In Guarnieri's *Ponteio No. 30*, chords were identified after removing non-harmonic notes and ornamental chords. We also considered an implicit pedal E♭ between mm. 1–6. The result is predominantly one chord per measure. The chord map and analysis of the types of progressions, according to McHose, are found in Tables 4–6.[15] The type of progression is placed in the finishing measure. For

[14] McHose classified the triads found in Bach's choirs according to the frequency of their progressions that normally approach the tonic. It features only four classes, and in minor mode, the major seventh degree is included in the first class. Kostka, however, considers the VII degree of minor mode to be the continuity of the cycle of fifths in an opposite direction to the tonic. The secondary dominant V/iii in major mode is a contribution of mine, as is the label T (tonic).

[15] The notation (5±), in mm. 18 and 38, means the alteration of the fifth of the chord a semitone lower and a semitone higher at the same time, often associated with the dominant or substitute

example, the chord in m. 3 is reached by the retrogression procedure. There is a common-chord modulation in m. 11 for the relative major key, so the type of progression from the common chord is based on the key of B major. Before the return of the theme, there is also a common-chord modulation (m. 22) for the return of the initial key. As a synthesis, despite the rich harmony—with ninth and thirteenth chords—, most harmonic progressions are of the normal type (according to McHose's principles), that is, they move towards the tonal center.

	Section A1									**Section A2**					
Measure	1	2	3	4	5	6	7	8	9	10	11		12	13	14
Chord	a♭: i$^{6/4\ (add\ 6)}$	V$^{9♭}$	vii$^{o6/5}$/iv	iv^{7}	V$^{9♭}$	i$^{4/3}$	V$^{4/3/2}$/V	V$^{9♭}$		V$^{9♭}$	i$^{6\ (add\ 6)}$	VI$^{4/3}$ B: IV$^{4/3}$	V^{9}/IV	IV^{13}	iv$^{(add\ 6)}$
Class	T	2nd	3rd	2nd	1.ª	T	2nd	1st		1.ª	T	3rd 2nd	3rd	2nd	2nd
Progression		–	Ret	N	N	N	–	N		Rep	N	–	Ret	N	Rep

Table 4: Chord map and analysis of progression types in *Ponteio No. 30* by Guarnieri (part 1)

	Section A2 (continuation)												**Section A1′**		
Mm.	15	16		17	18	19	20	21	22	23	24	25	26	27	28
Chord	vi$^{4/3}$	ii^{13}	V$^{9♭}$	I$^{4/3\ (5♯)}$	V$^{6/5/4\ (5♯)}$/IV	V$^{9♭}$/iii	vii$^{o6/5}$/V	V^{9}	I^{7M} a♭: III^{7M}	V$^{9♭}$/V	V$^{9♭}$	V$^{9♭}$	i$^{6/4\ (add\ 6)}$	V$^{9♭}$	vii^{o6}/VI
Class	3rd	2nd	1st	3rd	3rd	5th	2nd	1st	T 4th	2nd	1st	1st	T	1st	4th
Prog.	Ret	N	N	Ret	Rep	Ret	E	N	N	E	N	Rep	N	–	Ret

Table 5: Chord map and analysis of progression types in *Ponteio No. 30* by Guarnieri (part 2)

	Section A1′ (cont.)										**Coda**						
Mm.	29	30	31	32	33	34	35		36	37		38	39		40		41
Chord	iv	ii$^{o4/3}$	III	V/V	V$^{9♭}$		i$^{6/4}$	I$^{6/4}$	V$^{13♭}$(4)	V^{6}/V	ii^{o9}	V^{7}	i^{7}	V$^{9♭\ (5♯)}$/iv	i	V^{9}/♯vi	i	I$^{(add\ 6^{b})}$	I$^{(add\ 6^{b})}$
Class	2nd	2nd	4th	2nd	1st		T	T	1st	2nd	2nd	1st	T	2nd	T	4th	T	T	T
Prog.	N	Rep	Ret	E	N		N	–	–	Ret	Rep	N	N	–	E	–	E	–	–

Table 6: Chord map and analysis of progression types in *Ponteio No. 30* by Guarnieri (part 3)

Based on data from the Gestalt analysis of *Ponteio No. 30*, we propose a compositional system (P30 System) that would hypothetically have given rise to this work. This system (Table 7) consists of a series of definitions that are restricted to the musical applications of the Gestalt law of objective set. These definitions will be used as a guide for the creation of *Inércia*, a new work whose compositional planning is presented in the next section. In the formal structure of this new piece, we define the concept of *moment*: part of a work determined by a specific number of measures with similar characteristics. Therefore, the number

dominant chord (Piston 1987, pp. 441–2). The notation (4), in measure 36, means a suspension 4–3 without resolution. Major sixths added to the chord are indicated by (add 6), and minor sixths by (add ♭6).

of measures were generalized. Therefore, the specific characteristics of each measure in the *Ponteio No. 30* can be used, at the composer's discretion, in a bigger temporal span before changing to other characteristics. With regard to harmonic content, the harmonies in *Ponteio No. 30* were generalized so that atonal composition is also possible.

	P30 System
1	The work is divided into section A_1 (moments 1–9), section A_2 (moments 10–25), section A_1' (moments 26–38) and coda (moments 38–41). Section A_2 contains at the beginning a motivic material in repetition and later in several fragmentations. Section A_1' contains virtually the same melodic material as section A_1, but in inverted counterpoint, plus an extension at its end containing the melody back to the original register.
2	The meter is constant, but it contains the following features to cover its perception: a) predominant use of a rhythmic pattern of accompaniment with syncopations; b) the main melody of the work is based on a single generative motive {a} of a non-thetic entry, accentuation in weak beat(s), and with a length of one measure.
3	In the accompaniment, a type of rhythmic grouping of one occurrence per measure is maintained. In the coda, there is another type of rhythmic grouping.
4	There are two distinct ways (groups X and Y) of arbitrarily classifying harmonic sounds in a hierarchical manner. Each group contains six classes of A–F, which can contain more than one sonority each. Class D in Group X is equal to class C in Group Y, and class E in Group X is equal to class A in Group Y. **X** / **Y**: Ax Ay; Bx By; Cx Cy; Dx Dy; Ex Ey; Fx Fy Dx = Cy Ex = Ay
5	The sonorities of Definition 4 follow the sequence stipulated in the tables below, and for each class there is a specific harmonic sound chosen. In the progression called repetition (Rep), there may be reuse of sonority or change to sonority of the same class.

	Section A									**Section A_2**					
Moment	1	2	3	4	5	6	7	8	9	10	11		12	13	14
Class	A	C	D	C	B	A	C	B		B	A	D_x/C_y	D	C	C
Progression		–	Re	N	N	N	–	N		Rep	N	–	Ret	N	Rep
Group	X											X/Y	Y		

	Section A_2 (continuation)												**Section A_1'**		
Moment	15	16		17	18	19	20	21	22	23	24	25	26	27	28
Class	D	C	B	D	D	F	C	B	Ay/Ex	C	B	B	A	B	E
Progression	Ret	N	N	Ret	Rep	Ret	E	N	N	E	N	Rep	N	–	Ret
Group	Y								Y/X	X					

	Section A_1' (cont.)											**Coda**						
Moment	2	30	31	3	3	3	35	3	37			38		39		40		4
Class	C	C	E	C	B		A	A	B	C	C	B	A	C	A	E	A	A	A
Progressio	N	Re	Re	E	N		N	–	–	Re	Re	N	N	–	E	–	E	–	–
Group	X																	

6	The motive {a} of Definition 2 is formed by two figures *x* and *y*, characterized by disjoint or stepwise intervals, ascending or descending movements and determined rhythmic figures. In this motive, there is a pattern from the use of a specific type of rhythmic grouping occurring more than once within the measure.
7	The work contains a main variation {a'} of the generative motive, with the same extension as {a} and in two different versions ({a'1} and {a'2}, formed by the different uses of the figures *x* and *y* from the main motive.
8	In section A_1, two moments are intended for the free use of new melodic materials, and they are also included in section A_1'. New motives based on motive {a} are freely inserted at the moments in section A_2 that do not contain this generative motive (according to Definition 9). One of the figures of the motive {a} is also freely worked, occurring 14z times, in which z =1, 2, 3, ..., n.

9	The number of occurrences of motives {a}, {a'1} and {a'2} in the sections of the work is as follows (order defined in planning): section A_1 = 3z{a}, 3z{a'1}, 1z{a'2}; section A_2 = 4z{a} (must come at the beginning, not necessarily one after the other); section A_1' = 5z{a}, 2z{a'1}, 2z{a'2} (same order as determined for section A_1, with the last {a'1} replaced by a {a'2}, plus three extension measures); coda = 2z{a} (occur in the voice below the main melody, which contains long figures formed by a single pitch). In this definition z = 1, 2, ..., n.
10	At the beginning of section A_2, in the melody, there is maintenance of the structure of the beats (acephalic or anacrustic), as presented in the motives of the previous section, but then there is a change to another form of structuring, returning to its original characteristic only in section A_1'.
11	When the beats are restructured in the section A_2, the grouping type in the melody also changes and returns in section A_1'. In the coda, the last rhythmic grouping is incomplete.

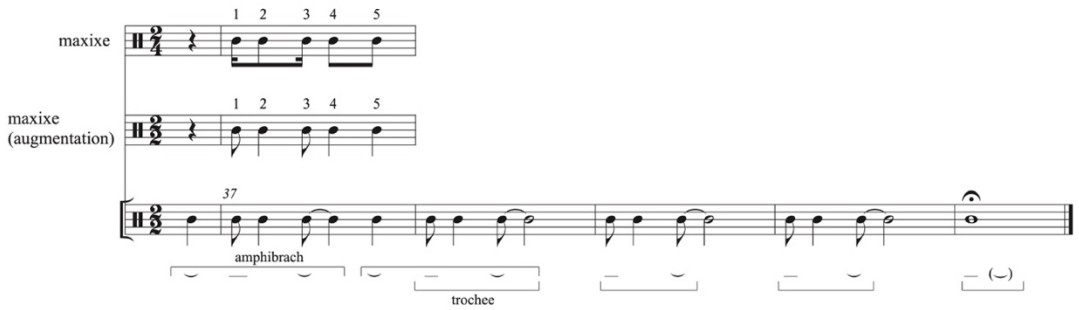
Table 7: Definitions of P30 system

3.1 Compositional Planning of *Inércia*

Next, we present the compositional planning of *Inércia*, fifth movement of *Suíte Gestaltina*.[16] The title of this movement refers to rhythmic inertia, a musical suggestion for the law of objective set law according to Tenney (1988). The following characteristics of *Inércia* were planned based on the definitions of the compositional system P30 (Table 7).

Regarding the accompaniment layer of the new work, there is a preponderance of the amphibrach grouping type, with the use of syncopations to dilute the meter (Definition 2a). The maintenance of this type of rhythmic grouping occurs until the coda, when the amphibrach grouping type is replaced by trochee, remaining until the end of the piece (Definition 3).

Ex. 12 presents this change of rhythmic grouping type and a rhythmic cell used as a basis for the *Inércia* accompaniment layer, the *maxixe* rhythm (one measure of duration, as explained in Definition 3). The maxixe cell underwent two modifications: augmentation and fusion of attack points 3 and 4 by the insertion of a tie. This fusion was guided by the syncopation suggested in Definition 2a.



Example 12: Rhythmic groupings in *Inércia* by Helder Oliveira

[16] The score of *Inércia* (last movement of *Suíte Gestaltina*), can be found in the Appendix.

To create the chords in the accompaniment, two groups of sonorities (X and Y) based on the trichordal set classes were formed (Table 8) from a hierarchical classification (Definition 4). The trichordal set classes were separated into two types: 1) those starting at 01, and 2) those starting at 02, 03 and 04 (Table 9). The trichords within each hierarchical class in group X, with the exception of the class F, contain two interval classes in common, considering the relationship of interval classes within each type of trichord. The set classes [036] and [048] were placed in the same hierarchical class (F) because of the harmonic uniformity that each of them can form (overlapping minor thirds and overlapping major thirds respectively). For the formation of the group Y, we considered the Definition 4, that is, $D_x = C_y$ and $E_x = A_y$. In addition, we looked for other combination possibilities, including relationships between trichords of different types (D_y and E_y are included in this consideration).

Class	Group X	Group Y
A	[012], [013]	[027]
B	[014], [015]	[015], [016]
C	[025], [037]	[024], [026]
D	[024], [026]	[013], [025]
E	[027]	[014], [037]
F	[036], [048]	[036], [048]

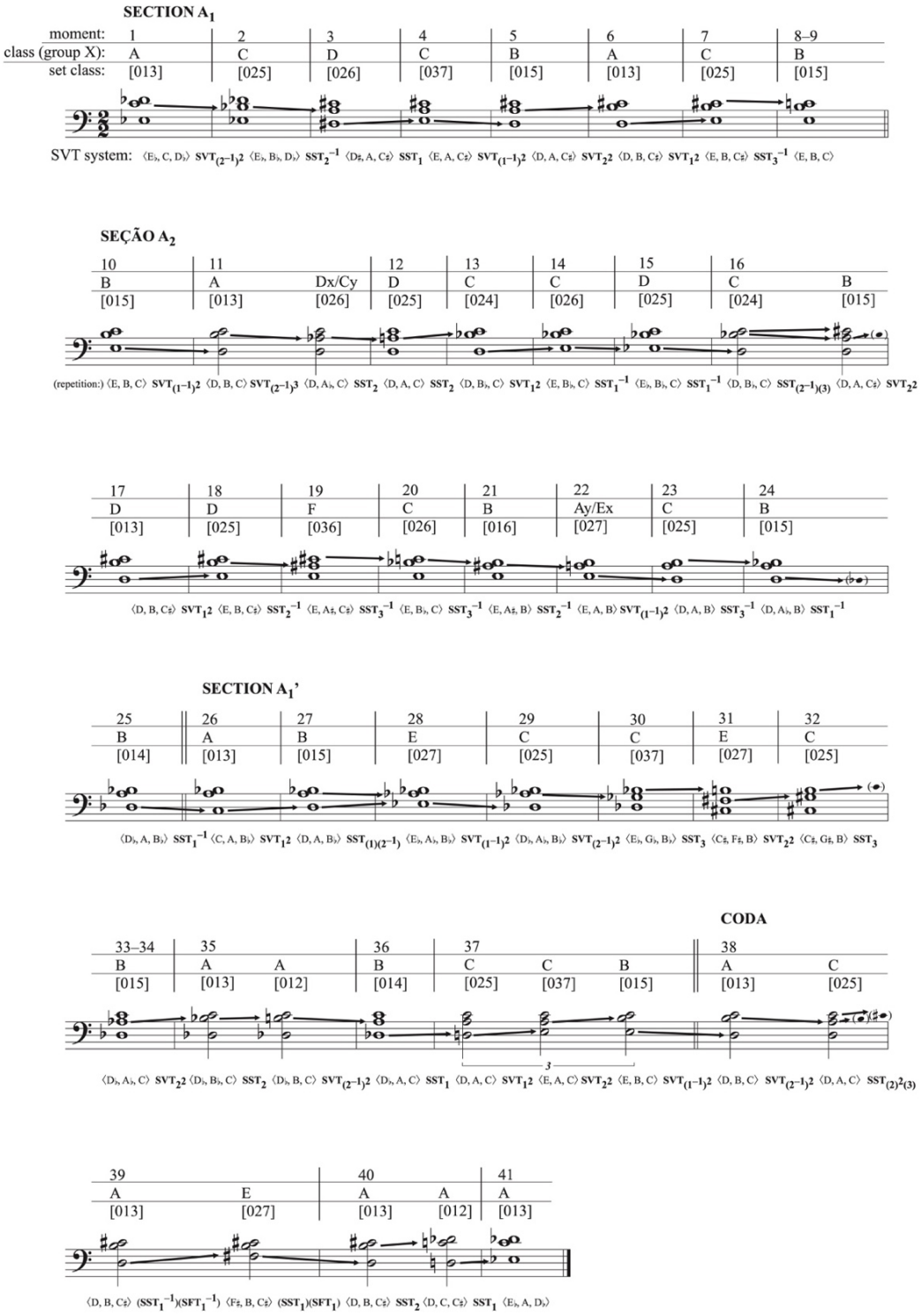
Table 8: Sonority groups and their chords in *Inércia* by Helder Oliveira

Type	Trichord	Interval vector
1	[012]	210000
	[013]	111000
	[014]	101000
	[015]	100110
	[016]	100011
2	[024]	020100
	[025]	011010
	[026]	010101
	[027]	010020
	[036]	002001
	[037]	001110
	[048]	000300

Table 9: Types of trichordal groups used in *Inércia* by Helder Oliveira

Having defined the classes of sonorities and their components, the set classes for the accompaniment were positioned in a general plan of the piece (Ex.

13) according to the tables of Definition 5. The pitches are arranged in this figure in a hypothetical register for better visualization.



Example 13: Chords in the accompaniment layer of *Inércia* and their parsimonious relationships

In the sonority classes that contain two set classes (Table 8), the choice of trichord was based on the idea of having, as far as possible, a strongly parsimonious transformation between the chords of the piece, in which only one voice is transposed by tone or semitone (Derfler 2010, p. 140). The exceptional transformations involving two voices occur three times: in m. 16, between mm. 27 and 28, and between mm. 38 and 39. In addition, there is a minor third interval between the chords in m. 11. Ex. 13 is divided into six layers of information. In the first layer, we have the section indication; in the second, we have the moments; in the third, the classes according to Definition 5; in the fourth, the trichords chosen according to Table 8; in the fifth, we have the trichords in musical notation with the arrows indicating the movement; and, finally, in the sixth, there is the Brandon Derfler's single-voice transformation (SVT) system, to formally arrange voice leadings.

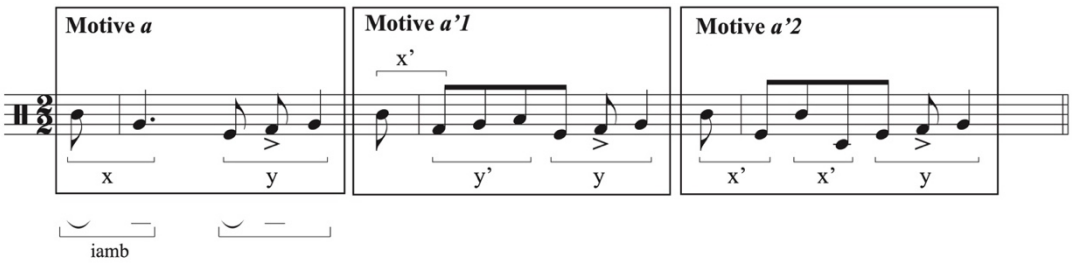
Derfler (2010) presents in his book a transformational theory of voice leading called single-voice transformation (SVT) that privileges parsimony[17] between voices and occasional fifth leap (single-fifth transformation—SFT). The process takes place through transpositions (T_n) and their reverses (T_n^{-1}) in the mapping between the voices. In Ex. 13, for instance, between the first moment ⟨E♭, C, D♭⟩ and the second moment ⟨E♭, B♭, D♭⟩, there was a movement of two descending semitones in the second element, that is, C was shifted downward to B♭. In the SVT system, this is represented by SVT $(_2^{-1})^2$, in which the first number 2 corresponds to the position of the element in the trichord (distributed vertically from bottom to top in Ex. 13), -1 indicates that it is a T_{11} transposition, and the last number 2 indicates that this transposition was applied twice. When there is a T_1

[17] Richard Cohn (1998, p. 174) limits the concept of parsimonious (economic) movement to the situation in which two triads, in the context of a *Tonnetz*, are connected by the movement of only one of the voices, by tone or semitone. Dmitri Tymoczko (2011, p. 412) considers, however, that the distances in the *Tonnetz* space do not correspond to the distances in the voice leading, citing, for example, the distance between C major and E♭ minor chords. It is also worth mentioning the movement between C major and A♭ minor chords, which is processed by the parsimonious movement of all voices. In this paper, we consider the generalized concept of parsimony, which is related to the connection between two sonorities by one or two semitones, between one or more voices, as proposed by Derfler (2010, p. 3). According to this author, a parsimonious transformation involves a voice-leading mapping that consists of no more than two consecutive applications of the semitone transformation (SST) affecting the same voice. In this way, each member of a chord can shift by up to one tone. In conclusion, two consecutive pitch classes are in parsimony if the unordered pitch class interval between them is equal to 0, 1, or 2 (Derfler 2010, p. 40).

transposition transformation, the label will be SST_x, where *x* is the position of the pitch-class that moves. If the transformation is by T_{11}, the label will be SST_x^{-1}. If the transformation is by T_{11}, the legend will be SST_x^{-1}. When transforming by two semitones, the legend will be SVT_x^2, or $SVT(x^{-1})^2$ if it is a descending transposition. In a composite transformation, two or more pitch-classes move. Even if there is a pitch shift, the composite transform will be called SST (see Ex. 13, m. 16 for an example). Finally, if there is a perfect fifth transformation, the legend will be SFT.

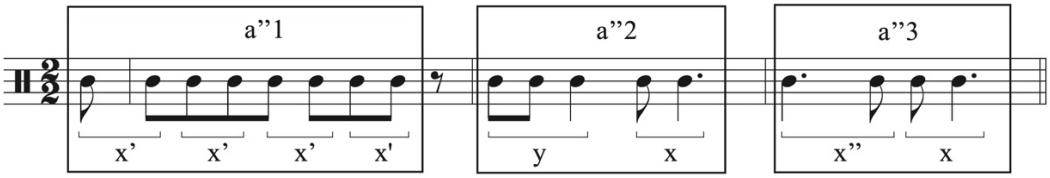
Definitions 2b, 6, and 7 provide information for the creation of the generative motive {a} of the new work and its main variation {a'}. The motive {a} was thought to be anacrustic, lasting a duple meter measure and having an accent on the second beat (Definition 2b), as shown in Ex. 14 (the pitches of each note are not determined, only their contour points).

Following the guidelines of Definition 6, the motive {a} contains two figures: *x* (formed by two notes with a descending skip interval) and y (formed by three notes in upward movement by conjoint degree). Also, there are two occurrences of iambic grouping within a measure. Ex. 14 also presents the two versions of variation {a'} (Definition 7).



Example 14: Generative motive for *Inércia* by Helder Oliveira, and the two versions of its main variation

In section A_2, there are 14 occurrences of one of the figures that make up the motive {a} (Definition 8). Figure *y* was chosen. In this section, in addition to the motive {a} and the figure *y*, there are other motives based on the generative motive {a} that are used in free moments (Definition 8). These motives are shown in Ex. 15 without contour indication. The order of occurrences of motives {a}, {a'1}, and {a'2} throughout the work is based on the quantities presented in Definition 9 for each section. The order of all motives and figures *y* in the new work is shown in Tables 10–12. Motives 5, 9, 30, and 34 were intended for free application of motivic material (Definition 8).



Example 15: New motives in section A_2 of *Inércia* by Helder Oliveira

	Section A_1									Section A_2									
Moments	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Motives	a	a'1	a	a'2	–	a	a′1	a′1	–	a	a	a″1	a	a	2y	2y	2y	a″2	a‴3

Table 10: Map of motives and figures in *Inércia* by Helder Oliveira (part 1)

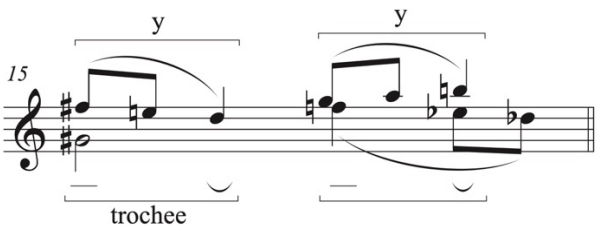
	Section A_2 (continuation)						Section A_1'											
Moments	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Motives	a″2	a″3	2y	2y	2y	2y	a	a′1	a	a′2	–	a	a′1	a′2	–	a	a	a″1

Table 11: Map of motives and figures in *Inércia* by Helder Oliveira (part 2)

	Coda			
Moments	38	39	40	41
Motives	a	a	a (incomplete)	–

Table 12: Map of motives and figures in *Inércia* by Helder Oliveira (part 3)

As required in Definitions 10 and 11, a new beat structure must appear in the melody of section A_2, concomitantly with a new type of rhythmic grouping, and remain until the end of the section. We decided on the thetic structuring and trochaic grouping, as exemplified in Ex. 16, which presents the first measure of the work that has this structuring (m. 15), five measures after the beginning of the section A_2. The pitches of the second voice below the main melody, added only in section A_2, are not part of the chord accompaniment.



Example 16: Thetic structuring in section A_2 of *Inércia* by Helder Oliveira, m. 15

4. Aesthetic comparisons

There is an abstract similarity between *Inércia* and *Ponteio No. 30* that involves certain aspects such as form, meter, use of rhythmic groupings, progressions of harmonic sonorities, and motivic treatment. The difference between these two pieces lies in the elements that were used to fill the structural archetypes of these aspects and in their temporal extensions during the musical flow. Among the elements, we have the time signature, choice of rhythmic cell with syncopations for the accompaniment layer, characteristics of the generative motive to cover the beats, use of new melodic materials in the moments destined for this purpose, and the types of harmonic sounds used to perform the modeled progressions.

Another difference lies in other decisions regarding parameters not included in the systemic model, such as the choice of a theory of pitch organization, which in the case of the new work was the Theory of Pitch-Class Sets. These decisions correspond to the last phase of the compositional planning of the work.[18]

Finally, many traditional aspects were included in the compositional planning of *Inércia* due to the definitions of P30 system, such as formal structures, well-defined textural layers, predominantly constant metric, motivic variation, and use of rhythmic pattern in the accompaniment. Certain contemporary features are part of the new work, such as the use of atonalism through specific set classes, and predominant exogenous sonorities.

5. Conclusion

Through this work, we presented a glimpse of the potential of Systemic Modeling applied to musical composition from a Gestalt analysis perspective. Since certain analytical tools have already been used to carry out the Systemic Modeling of given musical works, we proposed to model Camargo Guarnieri's *Ponteio No. 30* according to the musical analysis based on Gestalt Theory. Until now, works on Systemic Modeling did not consider Gestalt analysis as a tool to

[18] During the compositional planning of a work there are three phases: 1) particularization of the parametric values based on the compositional system; 2) object application (in which objects are applied to surface parameters such as pitches, rhythms and dynamics); and 3) complementation (inclusion of additional and undeclared parametric values in the system) (Pitombeira 2017a, p. 8; 2017b, p. 71).

model musical works. Therefore, this paper expanded the scope of this methodology, contributing significantly and in an innovative way to the modeling of musical works.

From the fusion of Gestalt Theory and Systemic Modeling, we proposed a new analytical-compositional methodology called Gestalt Modeling (GM). The Gestalt Theory allow us to investigate the practical application of musical structures based on several laws of perceptual organization, while Systemic Modeling provide a systematic and generalized means for the description of these structures, from the perspective of certain parameters, through the proposition of hypothetical compositional systems (or systemic models).

The intention of the GM of *Ponteio No. 30* by Guarnieri was to define a compositional system that can serve as a basis for the planning of new works. Thus, a piece for solo piano entitled *Inércia* was planned and composed based on a systemic model that contains guidelines on the behavior of certain musical structures in *Ponteio No. 30* according to the Gestalt law of objective set. The idea in this paper, as in all musical modeling writings, was not to make an exhaustive analysis of the *Ponteio* in question, that is, it was not intended to include several parameters or Gestalt laws in the modeling of the same work. The focus was not on revealing Guarnieri's creative poetics, nor on recreating the analyzed piece itself. The main purpose was to generate compositional materials from the observation of musical structures of *Ponteio No. 30* according to some musical suggestions for the Gestalt law of the objective set. In this way, the similarity between the two musical works resides at a deep level, that is, only the coherence of the functioning of certain parameters of the original works is maintained in the new composition. *Inércia* has some characteristics that relate it to the *Ponteio No. 30*, but it also has unique ones, both already presented. The parametric generalization considerably reduces the aesthetic similarities between *Ponteio No. 30* and *Inércia*. In the compositional planning of this new original composition, the elements inserted in the structures described in P30 system promote a new aesthetic profile, like the other decisions on aspects not described in the compositional systems, giving originality to the new work.

The quantity and nature of the definitions of each compositional system directly impact the creative freedom and complexity. P30 system had eleven definitions on harmony, form, meter, rhythm, and motivic treatment. It was challenging to compose from the generalized complex features of harmony and

the development of just one motive in the melody. Many details had to be considered in the elaboration of the compositional planning of *Inércia*. Although it was a bit arduous, this characteristic enriched the creative process. The positive aspects were to include the motivic treatment in the compositional planning, to reflect on the composition based on only one motive, and to have an original piece with a high level of structural complexity.

We conclude that the production of original works from GM is viable because it provides consistent starting points for the compositional planning of new works and also freedom in the insertion of parametric elements in the structures of the models and also outside them. The use of Gestalt analysis as a tool for the Systemic Modeling of *Ponteio No. 30* revealed great potential for coherently presenting new ways of organizing musical elements, that is, new analytical perspectives from the point of view of the listener's perception that could go unnoticed without its use. Although the structures are the same, such as shape and texture, their behaviors based on the musical suggestions of the Gestalt laws of perceptual organization result from predetermined characteristics, providing a greater focus on analytical research.

Finally, like Systemic Modeling, GM reveals itself as a possible methodology from the pedagogical point of view of musical composition, because from the contact with the language of other composers this methodology provides subsidies for the conscious compositional practice and the development of the academic composer's own language, that is, some rules of the game (compositional system definitions) are followed and allow a prepared and open field for decisions to fill in the musical structures, which depend on the composer's musical taste and repertoire. Thus, like Systemic Modeling, GM can prove to be effective for understanding the compositional language of the analyzed works and for creating consistent compositional repositories, expanding the repertoire of compositional techniques. One of the next steps for the development of this research, then, will be the future use of GM in the teaching of musical composition in an academic context and in courses outside universities to verify the potential of this methodology in the pedagogical field.

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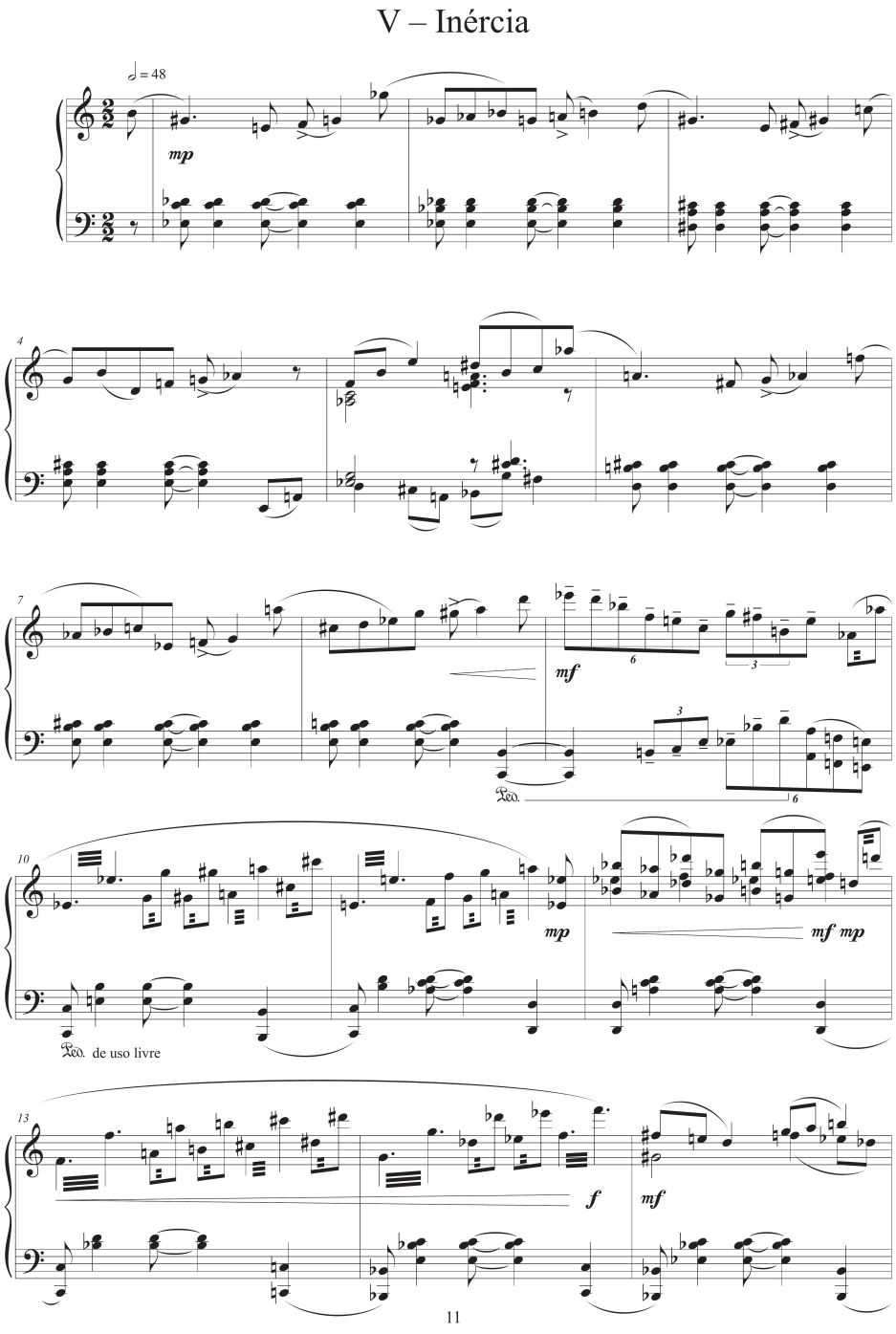
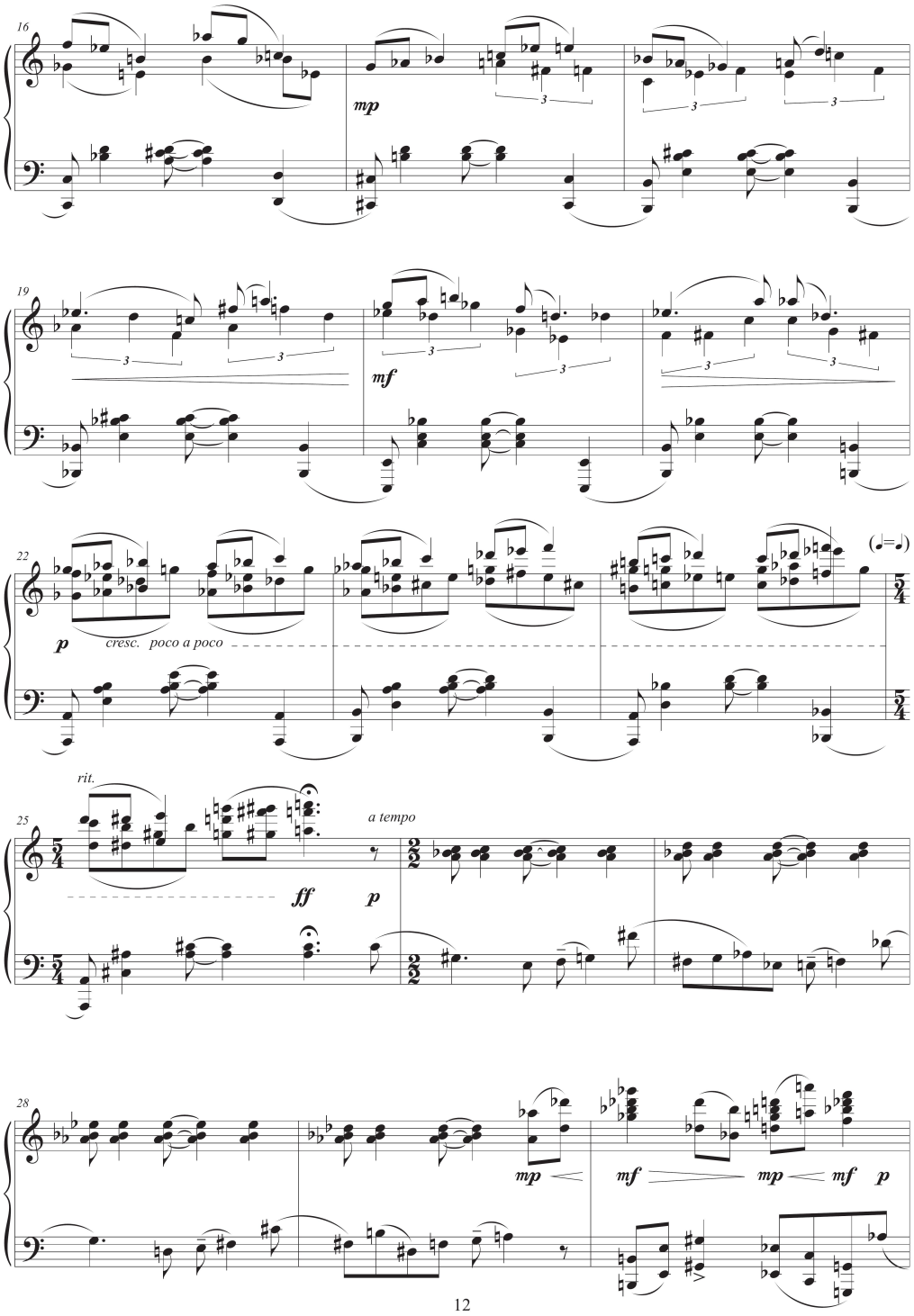
Appendix: *Inércia*, 5th movement of *Suíte Gestaltina*



Suíte Gestaltina (V – Inércia)



Suíte Gestaltina (V – Inércia)