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Tarantos by Leo Brouwer as an Example of Aleatoric Composition in Guitar Music

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Abstract The 20th century marked a period of profound transformations in European classical music, leading to the emergence of various musical movements. Aleatoric music, characterized by the incorporation of chance elements into the composition or performance, stands out as one of the most significant of these movements. Leo Brouwer is a prominent representative of aleatoric music in the guitar repertoire. This article explores the concept of aleatoric music through examination and analysis of Brouwer's *Tarantos* within the context of classical guitar. The research methodology employed is a case study, a qualitative research method. The data collection method involves document analysis. The concept of aleatoric music and Leo Brouwer's life are elucidated, followed by a descriptive analysis of the notation and unique aspects of *Tarantos*. *Tarantos* was chosen due to its suitability as an example of aleatoric music for the guitar. The research concludes by examining the formal structure of *Tarantos*, its notation, and the ways in which it aligns with the characteristics of aleatoric forms. The findings of this article are expected to guide both performers and listeners in understanding the notation and performance possibilities of *Tarantos* as an example of aleatoric music for the guitar.

Keywords Aleatoric Music · Tarantos · Classical Guitar · Leo Brouwer.

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Tarantos by Leo Brouwer as an Example of Aleatoric Composition in Guitar Music

By the advent of the 20th century, European classical music began to undergo substantial transformations. The emergence of serialism, compositions that pushed the boundaries of tonality, the integration of chance-based elements into the compositional process, the rise of electronic music, and the incorporation of previously non-musical sounds profoundly influenced the evolution of European art music. The development of unconventional performance and composition techniques reshaped both music history and the perceived meaning of music. Musical approaches such as twelve-tone music, musique concrète, aleatoric music, serialism, and electronic music arose as integral parts of significant shifts in the European music scene. During this period, composers embarked on quests for diverse forms of expression and novel aesthetic understandings that transcended the confines of the traditional tonal system.

Austin (1953, p. 29) characterizes these innovative approaches in 20th-century music as a rupture from tradition, both technically and aesthetically. He illustrates this by juxtaposing Schoenberg's complete rejection of tradition with figures like Stravinsky, Bartok, Milhaud, and Hindemith, who embraced the modification of all elements. This highlights a broad spectrum ranging from the outright rejection of tradition to varying degrees of alteration. Whether expressed through a subversive style adopted by the composer or a departure from tradition, the evolution of music in the early 20th century manifested itself in varying scales across numerous composers.

Aleatory, the central theme of this research, derives its etymological roots from the Latin word for "dice" (Grant, 2005, p. 94) and signifies the influence of random elements in musical composition or performance. Hoogerwelf (1976, p. 236) posits that the foundations of randomness in music originated in improvisational performance, suggesting that aleatoric improvisation is enabled by abandoning metric or tonal markers. In selecting elements of chance, the performer's discretion may be exercised, random tools may be employed, or visual stimulation might be necessary through representational forms other than traditional musical notation. This can sometimes be achieved through graphs, symbolic groupings, or abstract designs.

Throughout virtually every epoch of classical Western music history, compositions have existed that feature ambiguities, improvisation, and elements of chance. The Baroque and Renaissance periods witnessed passages that were entrusted to the performer's interpretation, lacking definitive certainty and reliant on chance (Kutluk, 1997, p. 265). Notably, during the Baroque era, harpsichord players often embellished ornaments and harmonic details through improvisation. These improvisations differed from those in aleatoric music, as they adhered to strict harmonic and rhythmic rules (Hoogerwerf, 1976, p. 236). Similarly, compositions written using the figured bass technique during the Baroque period offered performers flexibility. In this method, where harmonic functions were denoted by numbered bass notes, the development of the melodic structure was left entirely to the performer. During the Classical and Romantic periods, performers were granted the liberty to compose the cadenza sections of concertos according to their own skills. This freedom is noteworthy in the context of chance and uncertainty in music (Savaş, 2017, p. 4).

Mozart's *Musikalisches Würfelspiel* [Musical Dice Game], composed in 1787, stands as one of the most renowned early examples of chance-based music. This work comprises 176 musical fragments, each constituting a measure. Grounded in the principle of chance, the composition involves randomly combining these fragments by rolling dice according to specific instructions (Kocher, 2016, p. 3).

With the dawning of the twentieth century, composers began to prominently feature random elements in their works, incorporating elements of chance into the compositional and performance processes. This era

witnessed the emergence of a musical form in which the musical parameters or the order of sections within a notated work were either indeterminate or left to the performer's discretion. This form, termed "open form" and encompassing chance-driven elements, challenged the notion of a definitive and finalized form through the use of random processes, offering a fresh perspective on traditional compositional practices (p. 4).

While the literature review revealed studies on Leo Brouwer's music at the national level, no analysis of *Tarantos* was encountered. The existing studies seem to concentrate on Brouwer's position in the musical landscape, his compositional styles, and his musical methodologies. However, no research was found that specifically examines or analyzes *Tarantos*, a fitting representation of his second compositional phase and aleatoric music in guitar works.

Brouwer's use of aleatoric techniques becomes especially prominent during his second compositional period. Following his participation in a music festival in Warsaw, Poland, he composed *Sonograma I* for piano in 1961. This work is widely regarded as the first aleatoric composition in Cuba and is considered to represent the entry of contemporary music into Cuba (Kronenberg, 1998, pp. 35-36). In a similar style, he later composed *Sonograma II* (1964) for orchestra and *Sonograma III* (1968) for two pianos. During this avant-garde period, Brouwer explored aleatoric composition techniques through works such as *La Espiral Eterna* (1971), *Parabola* (1973), and *Tarantos* (1974), in which he incorporated indeterminacy and improvisation. In his work *Elogio de la Danza* (1964), he also employed extended melodic and harmonic chromaticism, as well as complex rhythmic groupings and phrase structures he utilized in *Canticum* (1968) (Flood, 2020, p. 221).

Although the aleatoric elements are evident in these pieces, by offering the performer the greatest interpretive freedom, *Tarantos* appears to be the most distinctive example of aleatoric composition in Brouwer's guitar music. It is anticipated that examining the work's notation, encompassing diverse expressive methods and elements of chance, will prove valuable in comprehending the evolving meaning of music and in performing works of that period. Moreover, the research, with its initial focus on Brouwer's life and aleatoric music, also establishes its identity as a historical study and literature review.

Methodology

This qualitative research adopts the case study approach as its research design. Case studies (Subaşı & Okumuş, 2017, p. 420) are scientific studies that enable an in-depth examination of a single case, either to gain insights into the operation and functioning of a limited system or to elucidate a broader range of situations. While case studies may be categorized under different names based on their examination of the subject matter, this research specifically employs the explanatory case study method. Explanatory case studies (Aytaçlı, 2012, p. 3) serve the purpose of providing descriptive information about an event.

The scarcity of information on aleatoric music and *Tarantos* in the preliminary research shaped the focus of this study. The preliminary research showed a gap in studies focusing on aleatoric music in solo guitar works, particularly on the music of Leo Brouwer. As a result, this research aims to examine the aleatoric techniques in Leo Brouwer's *Tarantos* as a noteworthy example of aleatoric music, specifically within the context of the guitar.

The scope of this research encompasses the definition of aleatoric music, Leo Brouwer's compositional approach, and a descriptive analysis of his work *Tarantos*. As the research adopts a case study methodology, Leo Brouwer's *Tarantos* has been designated as the case study. Additionally, a purposive sampling method was utilized to define aleatoric music and to examine Leo Brouwer's compositional career. The purposive sampling method (Baltacı, 2018, p. 245) facilitates the identification of information-rich sources and enables an in-depth exploration of the research topic.

Sources obtained through a literature search were scrutinized, and relevant ones were included in the research using the purposive sampling method. In analyzing *Tarantos*, descriptions were supplemented with explanations used in Brouwer's similar works to aid in the analysis. The analysis encompassed the formal structure, innovative notation, playing techniques, and aspects that align with aleatoric music.

This research utilized document analysis as its data collection tool. The document analysis method (Sak et al., 2021, p. 230), or documentary scanning, involves locating, reading, note-taking, and evaluating sources for a specific purpose. It encompasses the examination and assessment of both printed and electronic materials.

To establish the theoretical background, this research examined sources on aleatoric music and Leo Brouwer's compositional style, selected through purposive sampling. The analysis of *Tarantos*, which constitutes the research section, involved segmenting the notation into units exhibiting originality and describing these units. This process also included examining the formal structure of the composition and identifying its structural features that align with aleatoric music.

It's important to recognize that this research limits itself to a single composition; thus, comparative analysis with any other aleatoric works or composers is not included. Moreover, the findings of this research are based on the articles and materials that were available to the authors at the time of writing. Likewise, the analysis does not take variations in individual performances of the piece into account.

Aleatoric music

Aleatoric music, also referred to as "open form" or chance music, is an experimentally composed musical movement that is not bound by specific techniques and incorporates improvisation (Yöre, 2011, p. 9). Kutluk (1997, p. 265) defines aleatoric music as an approach that relinquishes the structuring of music to chance.

The concepts of chance and uncertainty, which garnered considerable attention in philosophy, science, and various art forms during the 20th century, also manifested themselves in the art of music. According to Einstein's theory of relativity, the possibility of chance events at the level of subatomic particles began to be debated within quantum physics. On the other hand, many art forms utilize the aesthetics of uncertainty, allowing the resulting work to be determined by chance. Works in "open form" created in this manner challenge the traditional notion of a closed structure solely determined by the author or composer (Jeongwon & Song Hoo, 2002, p. 264).

In aleatoric music, also known as indeterminacy music, elements of chance are deliberately employed by the composer. During performance, the composer may grant flexibility to the performer at certain points, leaving some elements to their discretion (Hoogerwerf, 1976, p. 235).

In his work titled as The Open Work, published in 1960, Umberto Eco states:

> Among contemporary musical works of recent decades, certain compositions stand out for a shared characteristic: They grant the performer significant autonomy in the work's performance. Thus, the performer not only (as in traditional music) interprets the composer's directives with their own understanding, but also determines the form of the composition themselves by choosing the length of the notes or the order of the sounds through creative improvisation. (Eco, 2023, p. 63)[1]

Chance-based systems, by virtue of their unpredictability, are captivating and can lay the groundwork for a more comprehensive form of creativity. However, even though the composer partially cedes control of the work to the performer, they may not grant unlimited freedom. The composer employs restrictive

[1] Translation by the author.

guidelines within the composition, thus preventing the listener or performer from entirely deviating from the composer's intentions (Kocher, 2016, p. 5).

Aleatoric music can be composed in three distinct ways. In the first of these forms, the composer introduces elements of chance during the compositional process, ensuring that all parameters of the work are predetermined by the time it reaches the performer (Jeongwon & Song Hoo, 2002, p. 268). During the compositional process, the composer may utilize chance elements such as coin tosses or dice rolls, employ mathematical rules, or transform abstract visual patterns to generate random structures (Hoogerwerf, 1976, p. 235). John Cage's *Music of Changes*[2] (1951) serves as an exemplary illustration of this form. In the second form of aleatoric composition, elements of chance are introduced during the performance. The composer notates the work in sections, but the order and arrangement of these sections are determined by the performer. Karlheinz Stockhausen's *Klavierstück XI*[3] (1956) exemplifies this form. The third form, where indeterminacy is most prominent, employs graphic notation instead of traditional notation, consisting of visual and verbal descriptions. Based on these graphics, the performer themselves decides how to translate the symbols into sound, Earle Brown's *December 1952*[4] (1952) is an example of this form (Jeongwon & Song Hoo, 2002, p. 269).

Particularly after 1950, composers' explorations of new timbres and their use of diverse musical structures and textures led to the emergence of a novel notation style (Tuncer, 2021, p. 142). This new form of notation, known as graphic notation, offers flexibility and variety, aligning with the structure of chance- and randomness-based aleatoric music. Graphic notation, which transcends the limitations of traditional notation and incorporates images, detailed symbols, and instructions to represent sound, complements the indeterminate and fragmented nature of new music. The versatility offered by graphic notation allows for diverse and unique interpretations of the work rather than adhering to a fixed order, providing freedom to the performer (Ganioğlu Yalçın, 2024, p. 56).

The life and music of Leo Brouwer

Leo Brouwer stands as a pivotal figure among composers in the realm of guitar music. Born in Cuba, Brouwer is not only a composer but also a musician, conductor, teacher, and writer. Additionally, he has served as an advisor to the Cuban Ministry of Culture and as a UNESCO representative for Cuba in 1980. In 1987, he received the UNESCO "Honorary Member" title, an honor shared with luminaries such as Herbert von Karajan, Isaac Stern, Joan Sutherland, Yehudi Menuhin, and Ravi Shankar (Kronenberg, 2008, p. 30).

He began playing the guitar and painting at the age of 13 but abandoned painting after a few years. At 15, he composed his first piece. He speaks of this initial composition as a magical moment, an event that profoundly altered his outlook on life (Century, 1987, p. 152).

His desire to further his initial guitar education, which he received from his father, led him to cross paths with Isaac Nicola. He started learning to play instruments with gut strings from Isaac Nicola, who had been a student of Pujol, a student of Francisco Tárrega. Later, through his education under Fleta and Gilbert, he transitioned to the modern guitar. In an interview (McKenna, n.d. [1988]), Brouwer mentions adapting the right-hand technique he acquired from Renaissance instruments to the guitar, along with incorporating cello articulations and certain flamenco techniques into his left-hand playing.

[2] For this method, Cage uses the *I Ching*, an ancient Chinese text that outlines techniques for generating random numbers, to determine the tempo and dynamics of this composition.

[3] Despite the fact that the nineteen events in this piece are traditionally composed and notated, the arrangement of these events depends on the performer.

[4] For this piece, traditional musical notes are replaced with lines and rectangles of different lengths and thicknesses. The composer uses these shapes to indicate anything from dynamics to pitch, giving the performer freedom of interpretation.

It seems plausible to consider that this diversity, which commenced during Brouwer's formative years as a student, laid the foundation for his creativity. His approach of preserving traditions, his guitar education initiated by his father and subsequently honed by expert instructors, influenced his musical foundation and paved the way for his multifaceted music. He then completed his formal education at the Juilliard School (for 6 months only) and the Hartt School in Hartford, where he studied composition (Akıncı, 2008, p. 5; Dumond & Dennis, 1988, p. 13).

It seems feasible to analyze Brouwer's compositional career under three distinct periods up until the 2000s. Despite the available literature limiting his compositional periods to three, it should be considered that the sources on this matter date back several decades. Consequently, they may not fully account for more recent developments in his compositional style.

His initial compositional period spans from 1955 to 1962. This period is characterized by Afro-Cuban rhythms, melodies, and rearranged Cuban songs. Brouwer states that this phase of his composing laid the groundwork for the thematic material in his music. He adds that his first phase stemmed from Cuban popular culture, rooted in 500 years of African culture (Betancourt, n.d. [1998]). However, according to Kronenberg (2008, p. 36), Brouwer's first compositional period incorporates thematic and rhythmic elements from traditional African ritual music but blends the melodies with diverse harmonic structures. His contemporary compositional style features the use of tritone formations and chromaticism.

Brouwer recounts that the most influential musical awakening for him came in 1961 when he attended the Warsaw Autumn Music Festival. Hearing works such as Lutosławski's Jeux *Vénitiens* (1961), Stockhausen's *Zyklus* (1959), and Penderecki's *Threnody to the Victims of Hiroshima* (1960) would influence his own music. In 1961, he assumed a teaching position in harmony, counterpoint, and composition at the university. Even during the 1964 American embargo, he continued to compose and perform new music in Cuba (Century, 1987, p. 157).

The composer's second compositional period, commencing in 1962, incorporates experimental elements. However, Brouwer refrains from labeling it as experimental (Betancourt, n.d.), preferring the term avant-garde. Although he employed the aleatoric compositional style during this phase, he did not abandon his earlier practices nor did he entirely sever ties with tradition. While Betancourt accepts that this period began in 1962, he notes that Brouwer himself describes this transformation as an evolutionary fusion. This phase marked the beginning of his avant-garde or experimental music period. He considers his *Sonogramas* (1961, 1964, 1968) and percussion variations as the starting point of this period, suggesting a possible influence from the musical vanguard of the Cuban revolution. Nonetheless, he acknowledges that avant-garde music, even today, presents itself as a tensional language. He conveys the difficulty in achieving balance within compositions using this tensional language, implying that the tension does not resolve into relaxation.

Brouwer utilizes the avant-garde approach to merge modern art and music. In his 1966 composition *Conmutaciones*, he employs graphic notation, aiming not only for the performer to interpret the musical notation but also to foster a visual connection (Century, 1987, pp. 157-158).

Following this period, his third compositional phase, the "new simplicity," commences. He adds that the new simplicity carries elements from the triad of popular music, classical music, and avant-garde (Betancourt, n.d.). According to Century (1987, p. 159), Brouwer's third phase once again demonstrates his connection to tonality. However, the label "neo-romanticism" embraced by his contemporaries discomfits him, and he prefers to characterize his music as "hyper-romanticism."

McKenna (n.d.) states that Brouwer sometimes seeks ways to sustain his creativity by referencing structures or models of structures found in Europe. Brouwer, who characterizes his guitar works as prototypes of change, explains that two consecutive pieces differ due to other works and studies undertaken in between.

He also points out that theories of harmony can influence the historical context of a piece and conveys that he adds new meanings to his compositions from other aspects of his life and even from other facets of music.

This interpretation by Brouwer underscores the idea that his approach to music and how he examines it are crucial to understanding his compositions. He has discovered a way to construct his music even from fields that might initially seem unrelated to music.

Furthermore, his use of symbolism in music stems from his conception of the guitar as a guitar-harp, in contrast to the centuries-old practice of homophonic texture (Betancourt, n.d.). He explains that when envisioning the guitar as an orchestra, he strives to bring together all the compositional elements found in an orchestra onto the guitar, unlike typical guitar pieces. Additionally, he mentions his preference for composing with an approach he terms as the law of opposing forces. If there's chaos, it should be followed by silence, or if there are rapid motifs, they should be followed by rests. While using music as a language, he also utilizes language in place of notation for composing music.

He states that his musical language has remained consistent over the years and that the universal elements of culture and national origins are inseparable from art (McKenna, n.d.). He adds that when composing music, he notes down the progression of the next movement using sentences or words instead of chords or notation. He explains that he expresses these using metaphors, always starting with a motif or a chromatic group, and builds his compositions by developing these ideas.

Century (1987, pp. 162-163) mentions that Brouwer's views on music can be found in his article titled "La musica, lo cubano y la innovacion[5]". In this article, Brouwer discusses how music is divided between art music and popular music, stating that these two genres are in perpetual conflict. People perceive popular music as easy to listen to, while art music is seen as complex in structure. In his article, Brouwer laments that music is constantly evaluated based on its technical elements, while aspects related to compositions such as the composer's background, the social and philosophical context, and the political environment are often overlooked.

Understanding Leo Brouwer's approach to music and how he analyzes it is also crucial for comprehending his own compositions. It's evident that a multifaceted approach is required to interpret the music he creates by assembling fragments from diverse fields, periods, and cultural building blocks. It's important to consider that a superficial examination would be insufficient when studying his music, and the same multi-layered complexity might also make it challenging to interpret his music.

Analysis of Leo Brouwer's Tarantos

Numerous forms can be employed in composing a musical work. As previously explained, Leo Brouwer adopted various compositional approaches from three distinct compositional periods and utilized different forms. *Tarantos* (1974), written during his second compositional period, is an aleatoric work. When examining aleatoric works, particular attention can be paid to aspects such as the use of chance elements, novel notation methods, compositional form, and points of convergence and divergence with tradition. The focal point of this study is to examine the aspects of the work's form that align with the aleatoric musical form and its notation. This study analyzes *Tarantos* by separating its novel notation methods, formal characteristics, and areas where it adheres to and departs from tradition, not only in terms of its compositional form, but also with respect to the composer's specified playing instructions, and the graphic features of the notation.

Leo Brouwer's *Tarantos*, falls within the composer's second compositional period. As the composer was interested in aleatoric composition techniques during this period, their use is evident in *Tarantos*. The work,

[5]Music, Cuban Culture, and Innovation

created by combining diverse sound clusters with ethnic elements of flamenco music, consists of sections with distinct melodic structures.

During the performance, the performer decides on the order of these sections. Consequently, each performance will be unique. This characteristic aligns the work with the aleatoric compositional style. Two distinct flamenco forms stand out in *Tarantos*: *tarantas* and *taranto*.

- *Tarantas*: This form, possessing a highly free rhythmic structure, can be played solo and sung but is not danced to. Due to its irregularly developing rhythmic structure, its measures and beats cannot be precisely determined. Therefore, in notation, measures and beats may be indicated approximately to provide an idea of the theme. *Tarantas*, a Phrygian-based style, can be played in the keys of F#, G, A, B, or C# (Yeprem, 1998, p. 50).
- *Taranto*: This is a flamenco song that can be written in 2/4- or 4/4-time signatures. Due to its powerful and rhythmic nature, it is suitable for dancing. Taranto is essentially a dance linked to *Tarantas*. As it is in F# Phrygian mode, it can be characterized as having a tragic and poignant mood (Yeprem, 1998, pp. 28-29).

Leo Brouwer's *Tarantos* comprises 14 distinct sections. These sections are grouped under three main categories: "Enunciados", "Falsetas", and "Para finale". The first group, termed "Enunciados-Statements", consists of seven different sound clusters contained within boxes marked with Roman numerals. In this group, the short sections, whose name translates to statements or explanations, are written in a highly free rhythm and centered around the note F#.

The second group, named "Falsetas-Redobles", contains six distinct sections indicated by capital letters. These sections include *tranquilamente*, *scherzo*, *lento* (*un poco*), *lentissimo*, *vivo*, and *sarabanda*. In traditional flamenco music, a *falseta* is a musical segment typically played on the guitar. Played between the verses of songs, *falsetas* consist of melodic variations that provide transitions between verses. *Falseta* melodies are constructed using material from the melody sung by the singer (Foggo, 2021, p. 57). The sections belonging to the first group, termed "Enunciados" and divided into specific clusters, are quite short and contain a single musical idea. The sections in the group termed "Falsetas", on the other hand, have a longer musical structure that develops within itself.

It is possible to compare the compositional forms of the sections in the first and second groups to the traditional flamenco forms *tarantas* and *taranto*. The short sections in the first group, when considered as song sections performed freely without a strict rhythm, are reminiscent of the *tarantas* form, while the variations in the second group, termed "Falsetas", resemble a *taranto*. The frequent use of the note F# throughout the work shares commonalities with the *taranto* form, which is written in F# Phrygian mode. Moreover, it can be argued that the sections in the second group are composed based on those in the first group. The intervals used, particularly in creating sound clusters, exhibit similarities. The use of primarily diatonic and triadic intervals is prominent throughout the work. These intervals are sometimes used simply and sometimes compounded (above the octave). It is evident that these intervals are frequently employed in both groups. As the name suggests, the third group, termed "Para final", constitutes the final section of the work.

All the aforementioned groups and sections are clearly visible in the score. The four-point written statement at the end of the score contains verbal explanations regarding how the piece should be played. These explanations state that the performer can play the sections in the first and second groups in any order they wish, with each number followed by a letter. The composer specifies that the sections within different groups and the created order should not be repeated, and finally, an example order template is provided. The score requests that the order in the work begins with a number, followed by a letter and a number, and that the Para final section be used as the final section. Apart from these elements, the performer can create

their own order as they desire. This freedom granted to the performer aligns with the nature of aleatoric music. Using new orders each time prevents repetition of the work, which constitutes an example of the open form compositional approach.

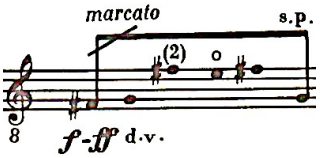
The sections expressing different styles in the first and second groups allow the performer to create unique orders to achieve the desired atmosphere, and this supports the use of the aleatoric music form. In this work, Leo Brouwer has produced an innovative and original piece by synthesizing elements of traditional flamenco music with modern composition techniques (Adrians, 2017, p. 214).

Figure 1
Quarter note notation.



Source: Brouwer, 1977

Figure 2
Eighth note notation.



Source: Brouwer, 1977

The graphic indicators used in aleatoric notation stand out in *Tarantos'* score. The sections enclosed in boxes in the "Enunciados" section can be cited as an example of cluster technique. Although the pitches are clearly indicated, the durations of the notes are expressed with specific symbols instead of traditional notation. In this case, which exemplifies spatial notation, the duration of the notes is arranged by the performer for durations deemed appropriate based on the symbols on the paper. However, this does not grant complete freedom to the performer. The composer provides restrictive guidelines to determine the durations of notes, rests, and fermatas.

Figure 3
Sixteenth note notation.



Source: Brouwer, 1977

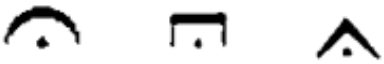
Figure 4
Thirty-second note notation.



Source: Brouwer, 1977

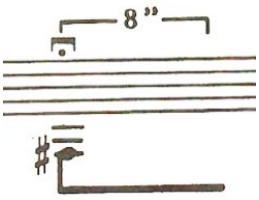
In the notation, the composer has generally used four different note values. The longest note value encountered is expressed as a single-tailed note (Figure 1). Shorter note values are indicated by adding lines to the tail. Based on this, if we consider the note shown as (Figure 1) to be a quarter note (one beat), then we can say that (Figure 2) with a single line corresponds to an eighth note, (Figure 3) with two lines corresponds to a sixteenth note, and (Figure 4) with three lines corresponds to a thirty-second note. Three different fermata symbols appear in the work. According to the explanation Leo Brouwer provides in the notation of his piece *Rito de Los Orishas* (1994), these are defined as normal fermata, long fermata, and short fermata (Figure 5). In addition, *Tarantos*, the composer uses numbers to indicate how many seconds the performer should wait over some fermatas and rests (Figure 6).

Figure 5
Normal, long, and short fermatas, respectively.



Source: Brouwer, 1994

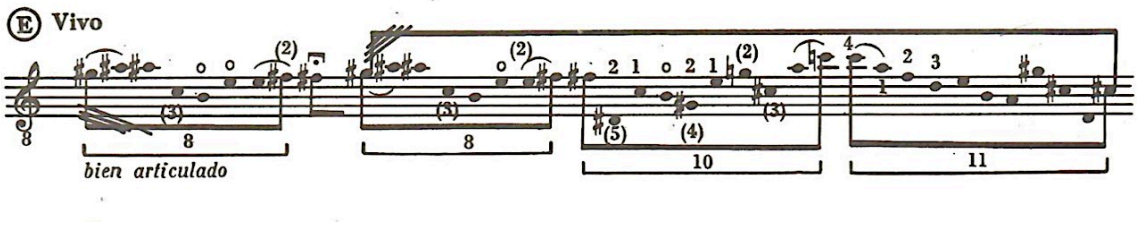
Figure 6
Fermata length indicated in seconds.



Source: Brouwer, 1977

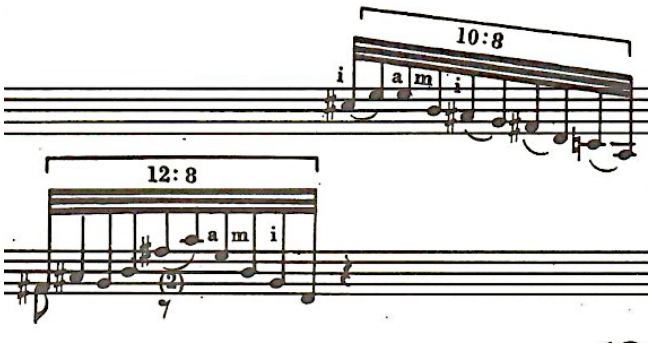
Another graphical guideline for interpreting note durations in the notation appears in the "Falsetas" and "Sarabanda" sections. Especially in the "Falseta" marked with the letter E, although there are no bar lines, it indicates that certain note groups should be played consecutively, fluently, and well-articulated (Figure 7), and the number of notes to be played in the clusters is specified. In the "Sarabanda", the only section with bar lines in the work, these clusters are shown as follows (Figure 8): Here, the composer indicates that although there are normally eight thirty-second notes within a quarter note, in this duration, the number of thirty-second notes to be played should correspond to the number written instead of eight.

Figure 7
Tarantos Section E.



Source: Brouwer, 1977

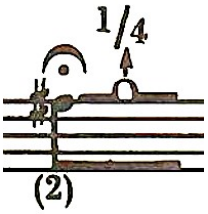
Figure 8
Notation of note groups.



Source: Brouwer, 1977

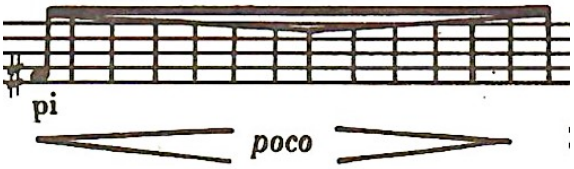
On the other hand, in the notation, the composer guides the performer on the use of different playing techniques. In the first part of the "Falsetas", indicated by the letter A, an expression shown in Figure 9 is placed above the F# note to be played on the 2nd string. The composer requests that the 2nd string, where the F# note is pressed, be pushed upwards by 1/4 (slightly), thus slightly sharpening the pitch. Again, in the same section, the section shown in Figure 10 visually indicates that the repeated F# note in this notation should be played with accelerando [speeding up] and then ritardando [slowing down] to create a percussive effect. Another graphical use of the accelerando nuance can be seen in the "Enunciados", in the section indicated by the Roman numeral V (Figure 11).

Figure 9
Notation of playing technique.



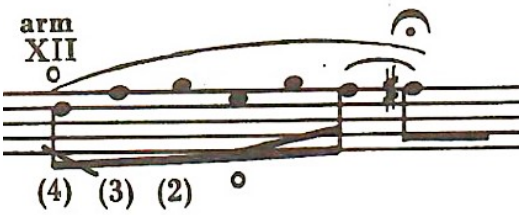
Source: Brouwer, 1977

Figure 10
Notation of percussive effect.



Source: Brouwer, 1977

Figure 11
Notation of accelerando.



Source: Brouwer, 1977

The only metric section of the work marked with bar lines is the "Sarabanda", denoted by the letter F under the heading "Falsetas". The sarabande, one of the suite dances, is a slow-tempo dance in 3/2-time signature, emphasizing harmonic structure, and usually with an accent on the second beat (Feridunoğlu, 2004, p. 101). Accordingly, the ostinato [repeating bass] in the lower staff of the Sarabanda section, written on two different staves, can be considered one of the characteristic features of the sarabande form. Fülöp (2021, p. 24) used the following expressions for the "Tarantos Sarabanda", who incorporated the *sarabande* form in all his compositional periods:

> With its use of triple meter and its ostinato section with dotted rhythms and emphasis on the second beat, the "Tarantos Sarabanda", possessing a characteristic sarabande structure, has a unique form among Brouwer's sarabandes with its flamenco-style texture. (Fülöp, 2021, p. 24)

It can be said that the detailed nuances specified in each unit that makes up the work create a distinct contrast and guide the character of the work. It is observed that percussive effects and rapid arpeggios, which bear the characteristic features of flamenco music, are frequently used as playing techniques.

Playing techniques such as tambura, pizzicato, and *Bartók pizzicato*[6], which are requested to be used in the work, play a significant role in creating percussive effects. It can be stated that rapid arpeggios appear frequently in the work as an element supporting the dramatic structure of flamenco music.

It has been observed that the contrasting nuances and different playing techniques used in the work create a timbral richness and also align with the avant-garde approaches the composer employed during his second compositional period.

Conclusion

A review of the literature reveals that the use of chance elements in music has existed since the earliest periods of music. The elements of chance and randomness present in music from the Middle Ages to

[6]Also known as snap pizzicato, is a technique used on string instruments where the performer plucks the string with force, causing it to snap back against the fingerboard.

the present day manifested themselves much more prominently in 20th-century music. As a result of the pursuit of new aesthetic approaches and novel forms of expression in 20th-century music, many different musical movements emerged. In this research, the aleatoric music movement, which foregrounds elements of chance, and its use in guitar music have been examined, using Cuban composer Leo Brouwer's *Tarantos* as an example. This study, prepared through a descriptive analysis method by reviewing the relevant literature, encompasses the fundamental characteristics of aleatoric music, the historical process related to Leo Brouwer's music, and an analysis examining the connection between *Tarantos* and aleatoric music structures.

Studies in literature have shown that aleatoric music can generally be composed in three different forms. In the first of these forms, the composer utilizes elements of chance during the process of composition, while in the second form, the performer arranges and decides on the performance of a work written in sections by the composer. The third form is the one where indeterminacy is most prominent, where graphic notation consisting of symbols and signs is used instead of traditional notation, and the performer translates these symbols into sound.

Tarantos, the work examined, aligns with the second form among the aleatoric forms discussed before. Aleatoric music, where the element of chance plays a rich and diverse role in contemporary music practices, offers the performer the opportunity for improvisation and freedom through indeterminate notation. Although the composer relinquishes control of the work to the performer to a certain extent, they do not grant complete freedom. The composer guides the control of chance elements, whose order or arrangement is left to the performer, through instructions indicated in the notation.

Tarantos, consisting of 14 separate sections grouped under three main categories, has the most important feature of allowing the ordering of these sections by the performer. With its interchangeable and differently playable nature each time, this work aligns with the aleatoric compositional form, where elements of chance and indeterminacy are prominent. Another feature that conforms is that the performer is not entirely free but must adhere to the composer's predetermined instructions when creating the order. These instructions are explicitly stated in the notation. The symbols used, differing from traditional notation, have a boundary-pushing understanding resulting from the new quests and diverse forms of expression prevalent in 20th-century music. Although the pitches in the work are quite clearly defined, the note values are approximately indicated, and certain symbols are used in all sections except the "Sarabanda" section of the work. Additionally, the fact that the work is written with the F# as the center and with the characteristic of free rhythm brings it closer to a flamenco music style. An adherence to the score is important in performance, however, comprehending the historical and cultural context of the piece is equally crucial.

This paper explored Brouwer's approach to composition from both musical and historical perspectives. Despite the limited in-depth analysis of *Tarantos* encountered in the literature, ample resources on Brouwer and his other works are available. However, locating pertinent literature, particularly studies employing analytical techniques or providing semantic interpretations of aleatoric music, proved challenging. This limitation was, to some extent, anticipated, given the intricate nature of aleatoric music, especially in the context of guitar music. Therefore, future research may benefit from extending the analytical framework by conducting comparative studies of other aleatoric guitar works, including additional compositions by Brouwer or other 20th-century composers. Employing diverse methodologies from pedagogical studies or cross-instrumental comparisons to achieve a more comprehensive understanding of aleatoric music could enrich both practical and theoretical knowledge. Such endeavors could also facilitate academic understanding of the structure and semantic form of aleatoric music, while also enabling musicians to gain

novel perspectives and insights. Consequently, the complex nature of aleatoric music may be elucidated, and ambiguous varieties within music clarified.

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