

Nicolás Arnáez. 2016.

Applied Indeterminacy.

Goals

On this term paper I will explore the theory written, the practical usage, and the diverse approaches to those art pieces that purposely are not fully completed by the author. The term adopted on this article to refer to those works will be Umberto Eco's one: Open Work¹. Then, to guide my writing I will try to achieve the following goals:

- To understand and compare different theories and art pieces created by using an artistic formal system where the author leaves the order (and sometimes the content) for others to complete and organize.
- To analyze and compare the use of the non-finished forms structure in literature, visual art, but mostly focusing on music.
- To provide examples and a brief analysis of pieces on these three art forms that make use of unclosed forms.
- To apply these theories to sound installation art and the importance of an interactive and engaged auditor to complete the process of moving art from the imaginary conception to the physical world.

Research Questions

For acquiring such a goals, inspirational inquires will provide an organizational path on this brief research, as well as the election of the pieces of art to be discussed. There are general questions dedicated to the concept itself, those like: What are the differences in the concept of open work in the different arts? What is the definition of indeterminacy in the arts? Is there any difference between indeterminacy and open work? How many different concepts of open work exist? What are their characteristics? How aleatoric music is related with it? Without a doubt, these questions open other queries in the more technical aspect of the idea: What are the boundaries that a reader has when facing a work like these ones? Where the noting ends and the work begins? Where open work ends and chaos begins? Also, these intrigues can awake a psychological and semiotic set of questions: How is the perception for the reader of a piece in the style? What is the

¹ Umberto Eco, *The Open Work* (Cambridge: Harvard University Press, 1989).

message then? What communicates? Can be nothing? Can be all? Finally, focusing on the musical act the more specific interrogations to use as motivation are: Are the musics that use indeterminacy and aleatoric processes for being composed/performed open work by definition? If in literature and visual arts the one that concludes the work is the reader, the presence of the performer in music as a decision maker agent blocks the basic concept of open work? Is any music form where the concept of open work can be applied as in literature and visual arts?

To answer all of them a more depth research must be done, on this paper in particular, I will use them as an incentive to discover the tip of what it can be a large and challenging investigation.

Introduction

There is no need to quote other authors to describe the principal characteristics of art created during the 20th century. Since some concepts of artists during 1900s are now public domain, we can affirm that during this period of time new conceptions were disseminated in all arts: literature, visual arts and music.

At the beginning, new ways of structuring art allowed the inclusion of philosophic thought into the development of pieces, this helped arising a wider range of possibilities into the creative act as never seen before. Of course, challenging concepts were positively received by some but highly criticized by others. Despite the fact of the rejection of many, a necessity of change was implicit and the different ways taken were most of the time based on the attraction to novelty as well as denegation of the past, to go against what was before known as correct, or adequate.

One particular case that many artists used to create their pieces, was to intentionally leave parts of the work incomplete, this incompleteness could be applied to different parameters, a common phenomena was to find it on how the diverse sections of a piece were ordered (having the author giving to the reader the power of choosing where to go thus a multiplicity of malleable meanings), other times the content itself where left open to others to be completed. Classifying these approaches to aesthetic creation is something that has to be analyzed on each art form itself, since their history, approaches and technics are different. I will examine how this concept has been theorized and applied

on the three: literature, visual arts and music, the last one will be the main focus of this writing.

Open structure in the Arts - Literature

The case of openness in literature is part of a long history. In respect to leave to the reader the labor of closing some aspect of the writing, Oscar Kenshur claims that some literary works created during the seventeenth and eighteenth century would be permeable to be analyzed by a modern approach. These works are suitable to this investigation because of their fragmentation and ambiguity.²

The concept of openness in literature can take many forms and the different usages since the seventeenth century to our days would require a larger research than this modest article can cover. Simply, we will understand open work in literature as a writing with a non-continuous structure, and then it is not possible to be seen as a whole³. This structure is not necessarily the physical one, the theoretic content can be the one that allows open and mobile order. This takes us to the first of four works analyzed by Kenshur: Francis Bacon's "Novum Organum" (1620). On this philosophical work "the skeptical aphorism of Bacon asks the reader to organize the knowledge himself, the enlightened aphorism of Diderot recognizes the basic flux of empiricist consciousness" (Erwin 1987, 89). The meaning of the word "form" in Bacon applied to Novum Organum is flexible and hold multiple meanings, one needs to trace on the writing the diverse attempts to clarify the concept, which is malleable and it reshapes itself according to the needs of the sections⁴.

A remarkable second approach to open work in literature is when the storyline is the one that can be re-arranged by the reader. On this trace, one particular case I would like to bring is "Rayuela" (Hopscotch) by Julio Cortázar (1963). On this work, the story is

² Oscar Kenshur, *Open Form and the Shape of Ideas: Literary Structures as Representations of Philosophical Concepts in the Seventeenth and Eighteenth Centuries* (London: Associates University Presses, 1986), 13-14.

³ Timothy Erwin, "Open Form and the Shape of Ideas (Book Review)," *Journal of Aesthetics & Art Criticism* 46, no. 1 (September 1987): 88.

⁴ Thomas Fowler, ed., *Bacon's Novum Organum*, 2nd ed, corr. & rev. (Oxford: Clarendon Press, 1889), 54-55.

fragmented on 155 short chapters, a set of instructions at the beginning invites the reader to re-organize them following different possibilities in a close-to-infinite amount of outcomes. The set of instructions begin with: “In its own way, this book consists of many books, but two books above as well.”⁵

Open structure in the Arts - Visual Arts

On the visual arts the phenomena of openness is cataloged under the term “Informal Painting”. The term is a subcategory of “Informal Art”, the informality rests on the capability of the piece to allow an extensive variety of interpretative potentials.⁶ There is also an equivalent on sculpture.

According to Eco, this informality is the last link of an extensive history of experimentation made by painters and sculptors throughout the history related to the intention of the introduction of movement on two and three-dimensional works. The earliest attempts (outside sculpture) can be traced back to the 1700s with the search of mobility and temporality on painting and continued until cubism. A first early example is the *Tapiserie de Bayeux* by Queen Matilda (ca1070) where the story is developed in a timeline vignette looking tapestry with a length of 70 meters (fig 1).



Fig. 1 - a fragment of the
“Tapiserie de Bayeux”
by Queen Matilda (ca1070)

⁵ Juio Cortázar, *Hopscotch* (New York: Pantheon Books, 1966).

⁶ Umberto Eco, “The Open Work in the Visual Arts,” in *The Open Work* (Cambridge: Harvard University Press, 1989), 84-104.

Secondly, the shocking sensation of movement of the *Nike of Samothrace* (c190 BC) is without a doubt a one of the first successes on this path on the sculpture world (Eco 1989, 84-85).

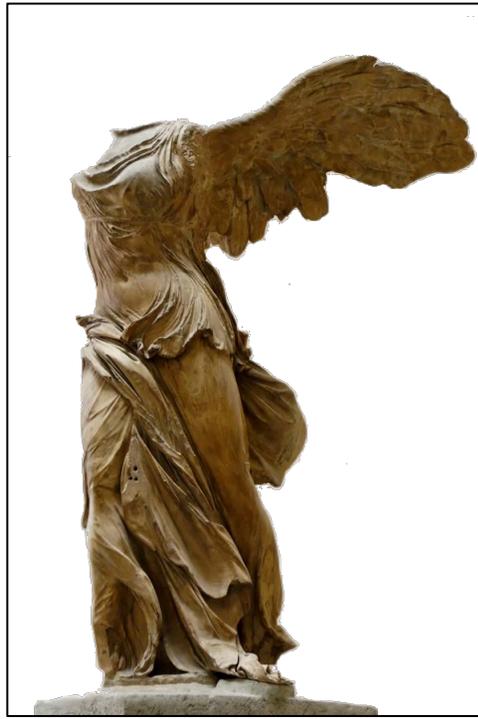


Fig. 2 - “Nike of Samothrace “
Unknown artist (c190 BC)

Part of the modern link of this practice involves an augmented understanding of the three-dimensional visual work, the piece changes meanings according to the viewer’s position, this is accomplished because the piece’s perspective obligates the spectator to find new shapes by changing his visual angle, a traditional sculpture (like Fig. 2) also changes according to the watcher position, but at the end the piece is the same, differently to informal art sculpture. Eco’s example for this is the work by Naum Gabo, I have chosen the piece *Constructed Head Nro 2* (Fig. 3) to exemplify this thought. As it can be imagined, the holes, shapes and morphological form of the piece will influence the final viewed shape according to from where the sculpture is being watch, “the viewer can (indeed, must) choose his point of view, his own connections, his own directions, and can detect behind each individual configuration, other possible forms that coexist while excluding one another in an ongoing relationship of mutual exclusion and implication” (Eco 1989, 86).



Fig. 3 - "Constructed Head Nro 2"
by Naum Gabo.

The painting equivalent to this multiple capability of readings can be seen on Jean Dubuffet's work, like *Bon Marché, IV* (Fig 4) where "the 'reader' is excited by the new freedom of the work, by its infinite potential for proliferation, by its inner wealth and the unconscious projections that it inspires. The canvas invites him not to avoid casual connections and the temptations of univocally, and to commit himself to an exchange rich in unforeseeable discoveries" (Eco 1989, 91).

Open structure in the Arts - Music

Music, as normally happens in comparison with other arts, arrives later to the same concept, in this case openness on its structure. Although few examples can be traced early in history, the concept is fully applied on the 50's and beyond. In 1958, György Ligeti closes an article where he criticizes the phenomenon of serial music with an overview of what he calls "free forms". According to Ligeti, free forms are those musical pieces where the composer provides a set of instructions on how to assemble the work. Then, the



Fig 4 - "Bon Marché, IV"
by Jean Dubuffet

interpreter is the one that has to assemble the final form on the spot. The goal of such a work, is to give to the overall form the possibility to be different each time the piece is played, thus the unidirectional direction of flow is lost allowing the piece to reinterpretate itself in each iteration.⁷

This description of open form fits many examples, surprisingly enough an early one is the case of the work attributed to Wolfgang Mozart that in 1787 created his famous Musical Dice Game "to compose without the least knowledge of music so much German or Schleifer as one pleases, by throwing a certain number with two dice"⁸. Basically, the composition is a set of 176 measures to be reorganized by the performer according to the

⁷ György Ligeti, "Metamorphosis of Musical Form," *Die Reihe: A Periodical Devoted to Developments in Contemporary Music* 7, edited by Herbert Eimert and Karlheinz Stockhausen (1960): 19.

⁸ Wolfgang A. Mozart, *Musikalisches Würfelspiel, K.516f* (Bonn: N. Simrock, 1793), 1.

number obtained by throwing two dice, the total number of different possible musical outcomes out of the combinations of these measures is 45,949,729,863,572,161 diverse musical works (although very similar sounding like).

A modern example of this kind of variable structure to be defined by the performer is Earle Brown's *Twenty Five Pages* (1953), a work that invites 1 to 25 pianos players to read the music out of twenty-five loose pages that "may be played in any sequence. Each page may be performed either side up. Events within each two-line system may be read as either treble or bass clef."⁹

Music Indeterminacy - Technical description

As mentioned earlier, the analysis of open form in music will be developed more in depth than the other arts on this document. To talk about openness and incompleteness I need to generate a theoretical framework where to fit descriptions and analysis. In my opinion, the necessity of mentioning John Cage's approach to composition during the 50s and 60s is mandatory. The phenomenon of indeterminacy is closely related with open form. At this point, will be important also to clarify the different conceptions surrounding the concept, like aleatoric music and indeterminacy itself.

On the influential book *Silence*, John Cage dedicates an article to indeterminacy and aleatoric music, where he describes technically the difference between both terms, among other conceptions.¹⁰ The more remarkable points are (everything extracted from Cage 1973):

- Indeterminacy happens when some parameters that the composer does not explicitly specify. In traditional western classical music, timbre and amplitude characteristics of the material, by not being given, are indeterminate (for example, *The Art of the Fugue* by Bach).
- The function of the performer is to decide on those not-given parameters, to fulfill the indeterminacy that the composer left on the page, in both traditional and new music.

⁹ Earle Brown, "Twenty-Five pages: Program notes," Edition Peters, 1953, accessed April 22, 2016, <http://www.earle-brown.org/works/view/40>.

¹⁰ John Cage, *Silence* (Middletown, Conn.: Wesleyan University Press, 1973), 35-40.

- Aleatoric music is the one that the composer decides the values of those parameters by chance methods. The final piece is fully written, no indeterminacy allows the performer to decide, more than common (interpretation, acoustic level of dynamics, tempo variations, etc.).
- To ensure indeterminacy with respect to its performance, a composition must be determinate of itself. If this indeterminacy is to have a non-dualistic nature, each element of the notation must have a single interpretation rather than a plurality of interpretations which, coming from a single source, fall into relation.
- A performance of a composition which is indeterminate of its performance is necessarily unique. It cannot be repeated. When performed for a second time, the outcome is other than it was.
- A recording of such a work has no more value than a postcard; it provides a knowledge of something that happened, whereas the action was a non-knowledge of something that had not yet happened.

After reading these statements, we can conclude then that a musical piece composed by using indeterminacy will produce by default an open work, the non-specification of certain aspects obligates the performer to complete the work according to his decisions, and that will generate a different work in each performance. The level of openness also has to be thought, there are openness that allows infinites musical results (i.e. the piece analyzed later Fontana Mix, by John Cage), and others that just allows thousands (i.e. another piece analyzed later called Intermissions 6, by Morton Feldman). On the other hand, aleatoric music is not by default indeterminate, thus not open work by definition. The aleatoric procedure was used during the composition of the piece, but once the chance operation was completed, the work is fixed and not open to too different interpretations, unless a type of notation allows indeterminacy.

Open Work - Theoretical Description

Umberto Eco offers a clear theoretical description of the idea of open work in music, we can notice similitudes with Cage's view. On Eco's work, the analysis looks the

conceptual and philosophical issues that these kinds of works generate. The first noticeable fact that he discusses is the role of the performer, whom is not completely free to interpret the composer's instructions following his own discretion, since open works are brought to their culmination while the player experiences them on an aesthetic plane, he must impose his judgment over the form of the piece on the go. Then, the final form of the piece gains its aesthetic value according to the number of diverse perspectives from which it can be heard and consumed. Consequently, what become important is to avoid the singularity of sense from imposing itself at the beginning of the receptive process.¹¹

In Eco's view there exists also the category called as "work in movement". The works composed using this conception consist on unplanned or physically incomplete structural units (Eco 1989, 12), which bring us back to John Cages' concept of indeterminacy.

Concluding, we can say then that open work refers to the musical pieces that offer to the performer a closed set of sections to be organized on the spot by the performer, these sections are somehow determined or fully written. On the other hand, indeterminacy or "work in movement" refers to musics where some parameters are not fully written by the composer, it can be pitch, rhythm, dynamics, etcetera or any combination of all.

Applied Indeterminacy

I have decided then, to briefly analyze three musical works of the twentieth century under the descriptions of both, Cage and Eco. The idea of this practice will be to determinate how open a work can be, what are the possible outcomes of the pieces and how valuable are they in the open work scene. Pay attention to the vertical axis of the following table, you will notice that left to right, the level of indeterminacy and openness (hence the higher aesthetic values) increases. NOTE: it will be important to have the scores while reading.

¹¹ Umberto Eco, "The Poetic of the Open Work," in *The Open Work* (Cambridge: Harvard University Press, 1989), 1-23.

	Morton Feldman <i>Intermissions 6</i> - 1953 -	Earle Brown <i>Small pieces for large chorus III</i> - 1969 -	John Cage <i>Fontana Mix</i> - 1958 -
MUSICAL ANALYSIS (applying Cage's description)			
Instrumentation	Determinate	Determinate	Partially determinate
Duration	Indeterminate	Indeterminate	Indeterminate
Rhythm	Partially determinate	Partially determinate	Indeterminate
Dynamics	Indeterminate	Indeterminate	Indeterminate
Harmony	Determinate	Partially determinate	Indeterminate
Texture	Determinate	Determinate	Partially determinate
Form	Partially determinate (fixed blocks)	Partially determinate (somehow fixed block)	Partially determinate (not fixed blocks)
AESTHETIC ANALYSIS (applying Eco's description)			
Performer's freedom	Low/Moderated	Moderated	High
Openness	Low	Moderated/High	Very High
Possible formal outcomes	Large	Very large	Extremely large
Range of control	High/Moderated	Moderated	Low
Poetic Idea	<ul style="list-style-type: none"> - The piece ends sounding similar from performance to performance. - It could be identified just by listening. - Restricted to the timbre of the instrument. - On the open work concept, the aesthetic value is low. 	<ul style="list-style-type: none"> - The sounding result does not vary much amongst presentations. - The structural blocks somehow are permeable to aural identification between presentations. - High aesthetic validity as open work. 	<ul style="list-style-type: none"> - Many differences from performance to performance. - Performer highly responsible of the sounding result. - According to Eco: Very high aesthetic validity on the open work approach.

The problem of not completing a musical piece

Despite the fact that indeterminacy and openness was a growing practice by composers on the 50s and 60s and it will survive until our days, not all of them agreed with the procedures, and some of them even stood against it. One of the most noticeable cases was Pierre Boulez, who on the article “Alea”¹² accused the composers using these practices to run away from their own responsibility of creating music (Boulez 1964, 51). There are many others strong statements against this practice on this article: “The most elementary form of the transmutation of chance would lie in the adoption of a philosophy tinged with Orientalism that masks a basic weakness in compositional technique; it would be a protection against the asphyxia of invention, the resort to a more subtle poison that destroys every last embryo of craftsmanship”. (Boulez 1964, 42). Basically, what most irritates Boulez is how the composer evades his input by forcing the audience to be in a subjective position as well as the responsibility laying and pushing the performer to give life to the bad intentioned mind of the composer (Boulez 1964, 43-44).

The more technical complaint by Boulez rests on the imprecision of the notation that obligates the interpreter to decide for the composer. Another one, is how the form of the piece is violated by the refusal of a pre-established structure, the legitimate desire to construct a sort of labyrinth with several circuits (Boulez 1964, 44-45).

There are no names written on the article, Boulez does not refer to any composer or practitioner in particular. Since the same Boulez years before, used indeterminacy and open form on his own work (for example on “Improvisation sur Mallarmé” for soprano and percussion ensemble written in 1957, or the first section of his “Third Sonata for Piano” composed on 1958), we can conclude that his critic was made towards those pieces where the indeterminacy was extreme and probably non-sense for his eyes, and the notation become a set of drawings or scrawls. On this style of scoring we find as examples Cathy Berberian’s “Stripsody” written on 1966 (fig 5), and Tom Phillips’ “Ornamentik” composed for trombone in 1968 (fig 6).

¹² Pierre Boulez, “Alea,” *Perspectives of New Music* 3, no. 1 (Autumn - Winter, 1964): 42-53

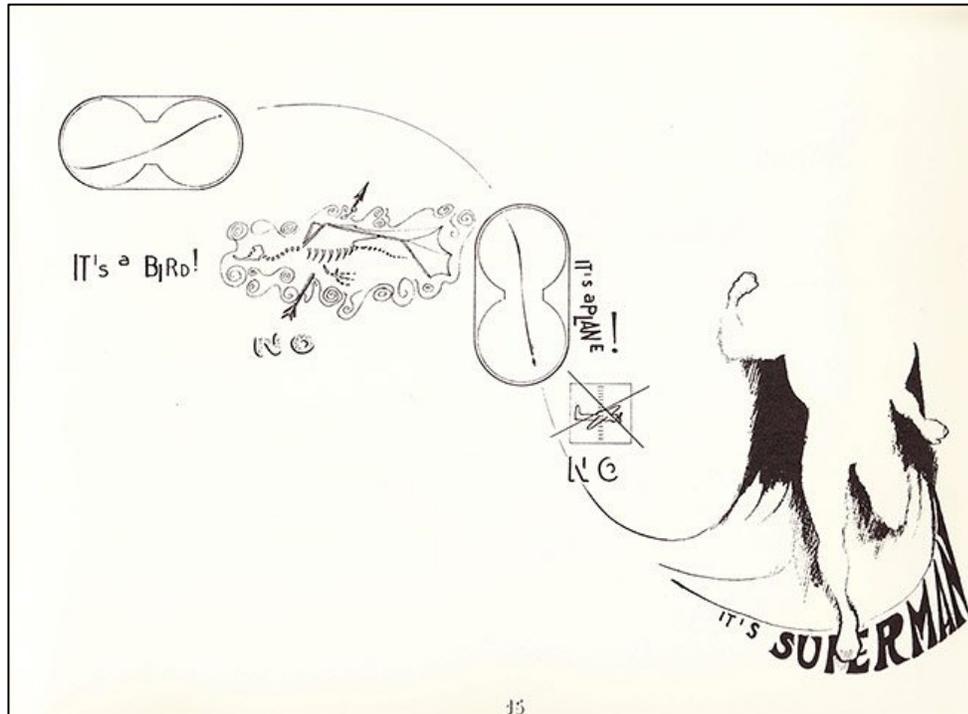


Fig 5 - "Stripsody" (fragment)
by Cathy Berberian

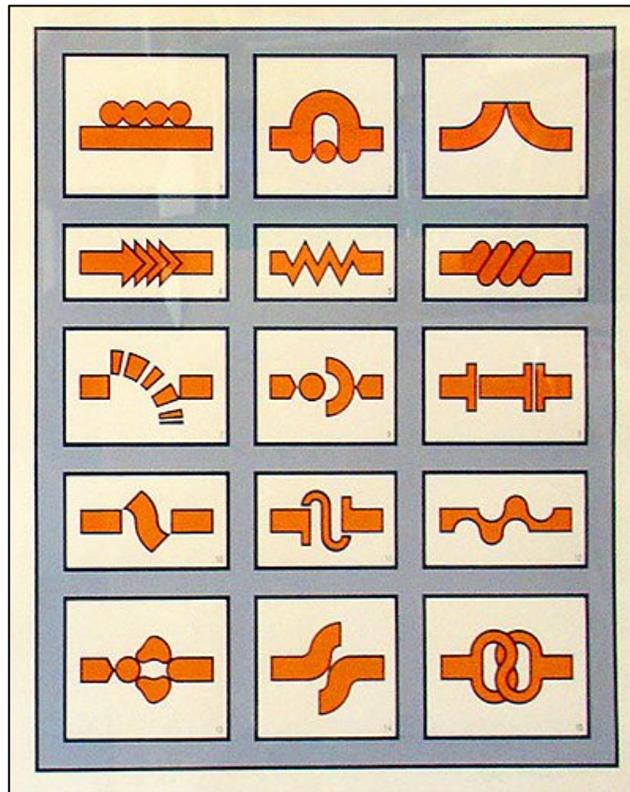


Fig 6 "Ornamentik"
by Tom Phillips

Open work on interactive sound installations

After analyzing how the concept of open work is used on literature, visual arts and music one important difference that the mentioned authors do not talk about is the presence of a music performer that does the job of mediation between the open work and the auditor.

This is the case: for example, in literature the one in charge of closing the work is the reader himself, the reader is who decides how to organize the theory on Bacon's *Novum Organum* and what chapter to read after finishing one on *Hopscotch* by Cortázar. In visual arts, is the viewer who gives different meaning to Gabo's *Constructed Head No2* according to his angle of view, and who focuses and find new signifiers on diverse areas of Dubuffet's *Bon Marché, IV*. In the case of music, there is a performer in between audience and work, this performer is the one experiencing and closing the openness of the musical piece, the auditor is a mere witness of the process, a real-time viewer of a postcard (to use Cage's metaphor).

Listener's voice, subjectivity, and artistic capacity are not included on the mentioned pieces, they are always receiving a closed work by the players, closed on the moment of performance, but closed. This is affirmed by Eco when he discusses music examples and say about them that they "propose an 'openness' based on the theoretical, mental collaboration of the consumer, who must freely interpret an artistic datum, a product which has already been organized in its structural entirety (even if this structure allows for an indefinite plurality of interpretations)." (Eco 1989, 11-12).

The truth on this statement can be hold just for few years after *The Open Work* was written. On the 90's and especially after 2000 the interactive sound installation practice becomes more and more common. The interactive component of this subdivision of sound art, requires the listener to move, touch, push, blow, etcetera to produce or manipulate the sounding component of the piece. There is no performer required, the piece mandates an engaged auditor to become real. Now, the concept of "open work" can be finally fully applied to music, by using the same structure as it is on literature and painting, the piece is closed by the interaction with its reader, it is on his power the diverse possibilities of conclusion, and it will be different every time that some (or the same) body comes into

play, controlled by the boundaries of the work given by the author but with a malleable openness.

Conclusion

After naming, reading and discussing the theories on open work, few conclusions can be summarized:

In comparison with literature and visual art, music is the only one where other individual than the reader, with the exception of the interactive sound installations, completes the work.

On literature, visual arts and music the concept of open work varies from artist to artist, and they are also different depending on the era; but they share most of their technical characteristics, the differences are mostly aesthetic and changes from piece to piece, but leaving something unconcluded requires an engaged and interactive auditor to become real.

Regarding to music, the concept of “open work” is normally applied to the form of the piece. On the other hand, indeterminacy on the musical content fits on the category of “work in movement”.

Music composed by using indeterminacy always creates an open work, on the other hand, aleatoric music can or cannot hold an open structure.

The aesthetic value of an open work in music changes dramatically according to how much indeterminacy its parameters are constructed with.

Nicolás Arnáez, April 2016

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