Author: Nicolás Arnáez

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3000 words essay:

Throughout the 20th century, the concept of "openness" in diverse art expressions has evolved significantly. The practical application of this concept finds diverse formats in literature, visual art, and music. As will be demonstrated in this writing, openness is fully functional and tangible concept in the first two, yet in music there seems to be a lack of works which connect the pure conceptual idea with the practical implementation. I therefore propose a music composition model that truthfully illustrates a sonic work that is left uncompleted by the composer, and closed by the auditor. The central quandary remains on the three-party nature of performed music, the proposed model will include all three agents on the decision making of an open musical event: Composer, performer and audience will create an unbreakable network with no hierarchy amongst them, resulting in a collaborative relationship of individuals that rely on collective decision making to complete an unfinished musical piece.

Openness in the arts

Books that leaves the reader to decide what page to read next, sculptures that mutate its morphology according to the viewer's angle of vision, musical scores that looks like a painting, with a lack of precise rhythms or pitches to be played. These type of art pieces are found copiously during the twentieth century, although similar examples can be traced formally from 1500's and probably further before, a logarithmic tendency of elaboration of this incompleteness cannot be denied when we position ourselves closer to the beginning of the twenty-first century.

In literature, we can find examples of openness throughout history, from the multiplicity of meanings of the word "form" in Fracis Bacon's *Novum Organum* (1620)[1] to the freedom of readers' will on the series for kids *Choose Your Own Adventure* (1979 - 1998), by Edward Packard. Influential works like these ones inspired virtual scenarios, like those found on games using Interactive Fiction or multiplayer virtual worlds known as *MDU* (Multi-User Dungeon). A recurring technique within these works involves the reader to define the storyline. An example of this approach is *Rayuela* (Hopscotch) by the Argentinian writer Julio Cortázar (1963). In this work, the text is fragmented into 155 short chapters, and a set of instructions at the beginning invites the reader to re-organize these chapters. The set of instructions begin with: "In its own way, this book consists of many books, but two books above as well."[2]

According to Umberto Eco, the phenomenon of openness in the visual arts 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[3]. This informality is the last link of an extensive history of experimentation made by a variety of painters and sculptors. The earliest attempts can be traced back to the 1700s with the search of mobility and temporality on painting and continued until cubism.

Imagine any classical sculpture, it shape changes according to the spectator's position. However, no matter where the viewer is experiencing the piece, it always will have a similar sense of form, shape, colors and such. In informal art sculpture this perception will be altered according to the viewer's angle of view. Eco's for illustrates this idea, talks generally about the work by Naum Gabo, look as an precise example *Constructed Head No.2* (Fig. 1). As it can be imagined, the holes, shapes and morphological form of the piece will influence the final shape perceived according to the location from where the sculpture is being seen. Eco's own words

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[1] Thomas Fowlder, ed., *Bacon's Novum Organum*, 2nd ed, corr. & rev. (Oxford: Claredon Press, 1889), 54-55.

[2] Juio Cortázar, *Hopscotch* (New York: Pantheon Books, 1966).

[3] Umberto Eco, "The Open Work in the Visual Arts," in *The Open Work* (Cambridge: Harvard University Press, 1989), 84-104.

say: “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. 1 - *Constructed Head Nro 2*
by Naum Gabo.

A painting which supports this idea of multiple interpretations (but now based on eye focus) is Jean Dubuffet's work *Bon Marché, IV* (Fig. 2). In this example, "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 no to avoid casual connections and the temptations of univocally, and to commit himself to an exchange rich in unforeseeable discoveries" (Eco 1989, 91).

Fig. 2 - *Bon Marché, IV*
by Jean Dubuffet

Western art music follows the same concept of multiple readings, which becomes prominent in the 1950s. György Ligeti's, on the last paragraphs of his article *Metamorphosis of Musical Form* gives a quick overview of what he calls "free forms". According to Ligeti, free forms are musical pieces where the composer provides a set of instructions on how to assemble the work. Subsequently, the

interpreter assembles the work's final form on the spot. The goal of such a work is to give to the overall form a different character each time the piece is played. As a result, the unidirectional direction of flow is lost thus allowing the piece to reinterpretate itself in each iteration.[4]

This idea of open form in music fits mostly examples after 1950, an surprisingly early one is the work attributed to Wolfgang Mozart's *Musical Dice Game* (1787) aimed to "compose without the least knowledge of music so much German or Schleifer as one pleases, by throwing a certain number with two dice".[5] A modern example of variable structure is Earle Brown's *Twenty Five Pages* (1953), a work that requires 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." [6]

John Cage's "indeterminacy" approach to composition during the 50s and 60s is one of the clearest examples of openness in music. Cage provides a technical description of indeterminacy [7] in his book *Silence* (Cage, 1973):

- Indeterminacy happens when the composer does not explicitly specify some musical parameters.
- The function of the performer is to decide on those not-given parameters, to fulfill the indeterminacy that the composer left on the page.
- The execution of a composition which is indeterminate on the level of performance, is necessarily unique.
- If an indeterminate work is recorded, this recording behaves like a postcard: it remembers us about something that has happened, but the action itself was the conclusion of a unique moment, unique and unrepeatable.

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[4] 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.

[5] Wolgang A. Mozart, *Musikalisches Würfelspiel, K.516f* (Bonn: N. Simrock, 1793), 1.

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

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

Cage's definition of indeterminacy can be paralleled with Umberto Eco's idea of openness in musical forms. Eco examines is the role of the performer, who is not completely free to interpret the composer's instructions following his own discretion; open works are brought to their culmination while the player experiences them on an aesthetic plane. Thus, he must impose his judgment over the form of the piece on the go. The final form of the piece gains its aesthetic value based on the number of different perspectives from which it can be heard. Consequently, what becomes important is to avoid sensory in at the beginning of the receptive process. [8] These kinds of works consist of unplanned or physically incomplete structural units or "works in movement" (Eco 1989, 12), hence echoing John Cage's idea of indeterminacy.

The mediator between the open work and the audience. Interactive Sound Installations as fully applied openness in music.

Consider the following: In the act of reading, the one in charge of closing the work is the reader himself. In *Hopscotch* by Cortázar, it is the reader who determines his or her own course of action throughout the book. In the visual arts, is the viewer who gives different meaning to Gabo's *Constructed Head No. 2* according to the angle of view, or who focuses and find new signifiers on diverse areas of Dubuffet's *Bon Marché, IV*. In the case of music, there is a performer between audience and work. The performer is the one that finishes the indeterminacy on a Cage's score and Browns' piano piece, this performer is the one experiencing and closing the openness of the musical piece, the one that makes the decisions while experiencing the work on an aesthetic plane. The auditor is a mere witness of the process, a real-time viewer of John Cages' postcard metaphor.

The voice, subjectivity, and artistic capacity of listeners are not factored into the conception of the aforementioned pieces. In any musical piece, the audience always receives a closed work. This idea is emphasized by Eco: musical examples "propose an 'openness' based on the theoretical, mental collaboration of the

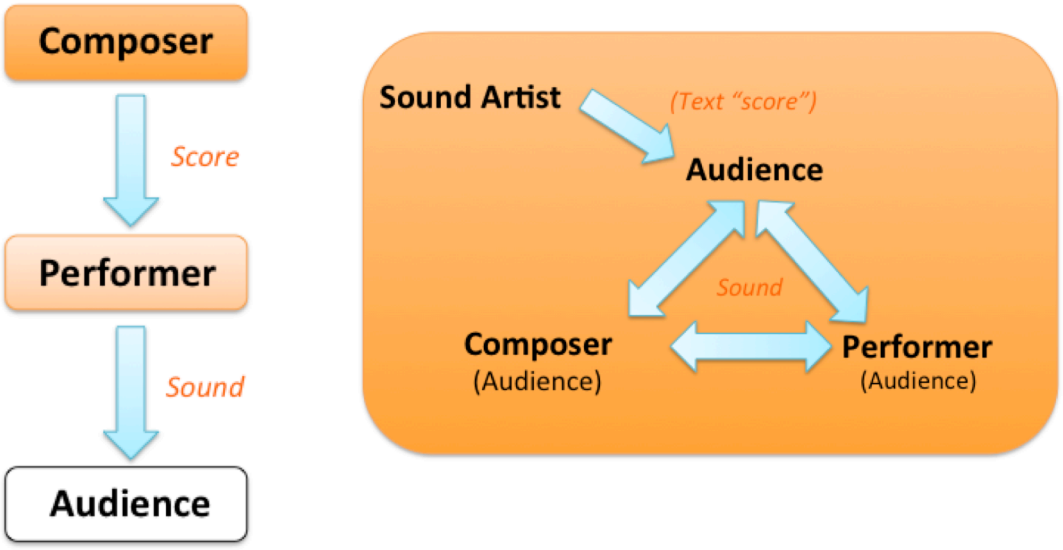
[8] Umberto Eco, "The Poetic of the Open Work," in *The Open Work* (Cambridge: Harvard University Press, 1989), 1-23.

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). Few years after Eco's *The Open Work* (during the '90s, and especially after 2000) the interactive sound installation practice becomes more and more common, and some concepts were challenged.

The interactive component of this subdivision of Sound Art requires the listener to move, touch, push, blow elements to produce or manipulate the sounding component of the piece. There is no performer required, and the piece mandates an engaged auditor in order to become an aesthetic musical product. The concept of "open work" can finally be fully applied to music. The piece is closed by the interaction with its reader, relying on his power to implement the diverse possibilities of conclusion thus, it will be different every time that a body comes into play.

Openness from Installations to Electroacoustic Music

Look at the graphics below, and analyze the directionality (and embedded hierarchy) of the musical discourse.



a **b**

Fig 3 – a) Most common compositional model, used on the Western World.
b) Compositional model used on Interactive Sound Installations.

Figure 3a represents the ubiquitous compositional model used in the Western World since around 1500s: The composer creates a piece which will be captured on a musical score, the score is then read by the performer who transports the music through the acoustic world to the audience. When there is indetermination in the score (as in Brown's example), the performer is the one experiencing its openness and closing the work in an ongoing aesthetic plane. We could trace then, a line with two arrows between composer and performer. The piece now is not unidirectional, the score allows the performer to occupy somehow the role of composer. However, the audience is not included in the decision-making procedure. The line corresponding to "sound" of Fig 3a is still unidirectional, from performer to audience. On the other hand, in figure 3b the audience experiences the openness and closes the work on the aesthetic plane, there is no third agent to make these decisions, himself is the mediator between listening, performing as well as

development overtime (composer). The sound artist communicates the functioning of the art piece by providing text, clues, or just trusting on audience's cleverness. The work is completed by the "reader". Take as an example the piece of my authorship *Composición Colectiva VI: Vos, El Viento, y el Sonido*, which was commissioned for the conference series that this book is based on (Exhibiting Sound), on the companion video of this essay, it can be perceived how the piece maintains an openness which is closed by the audience, either through pushing buttons that create air flows within the room or by physically shake the pendulum of them (both of these actions will cause the same effect: move the wind chimes and triggering the sound processing of them). The piece allows many layers of sound. Hence, when more than one audience member is interacting with it, the audience becomes recontextualized as an "ensemble of listeners".

This analysis reveals an interesting discover, hence many inquiries arises. The one I am interested on finding an answer is the one that questions if we can, somehow, have performers in the decision making of the unfolding of this musical pieces, but without loosing the freedom, ludic and artistic role of audience members.

A compositional model based on openness. Performers and audience interlocked by a network of influences.

The following compositional model represents a collectively functioning interactive situation, with a condition that allows bidirectional communication. Each one of the two parts must be able to receive and react to data (input) from the other, as well as sending data (output) and influence the other:

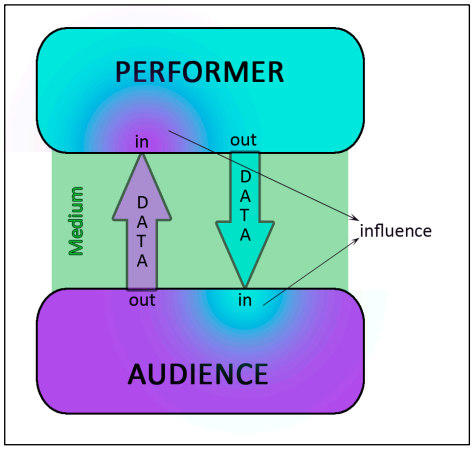


Fig 4. A bidirectional communication environment for audience and music performers.

The medium between performer and audience will be made out of a malleable audio-visual system of communication. The audience will use their sense of "touch" (applied to diverse devices like MIDI controllers, sliders, buttons, etc.) and "movement" (their position on the hall, measured by diverse electronic sensors) to produce data sent to the performer. Visually, the performer's input (touch and movement of the auditor) will be brought the their eyes in the form of a "live score" which will include animated, text based and traditional music notation. Performers read these indications and interpret the symbology by producing sounds on their instruments. This produced sound won't be fully determinate on the live score; the performer will be free to manipulate freely one (or more) musical parameters: for example the score can request specific pitch and rhythms but leave indeterminate dynamics, that free parameter/s (dynamics on this example) will generate certain visual data to be delivered to the audience's eyes and influence their behavior (for example, if the performer plays ***ff*** a text for the auditor will say "you are allowed to move just ONE fader", and if s/he plays ***pp*** the text will say instead "you are not allowed to move any fader, just buttons").

The visual data generated by performers will also be interpreted spatially. Lights on the room will be turned on and off, encouraging the audience to move to

certain areas or interact with one other device. Likewise, similar MIDI devices and controllers will be given to performers, hence expanding the overall data output.

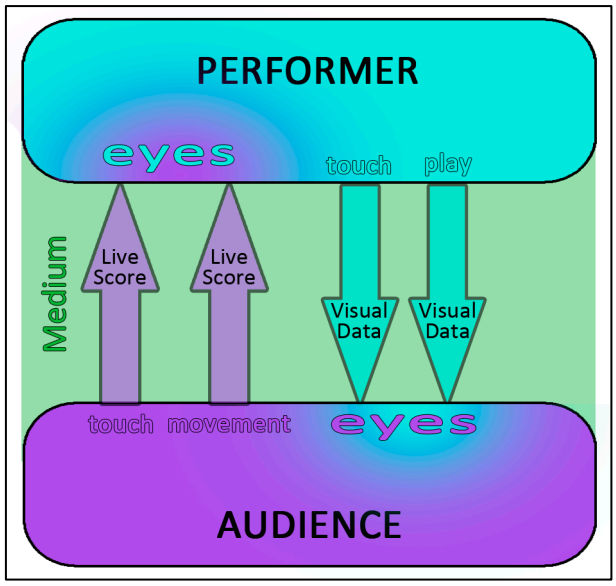


Fig 5. Inputs and outputs of a bidirectional network of influences between audience and performer members of an open musical work.

Finally, the audience's touch and movement along with the performer's activities will generate electronic sounds as well as live processing in the performers' live sounds, which is subsequently reproduced on a multichannel sound system present on the hall. Everything traveling throughout the medium (visual data, live scoring, multichannel electronic sound, and real-time sound processing) will be coordinated by a central computational brain.

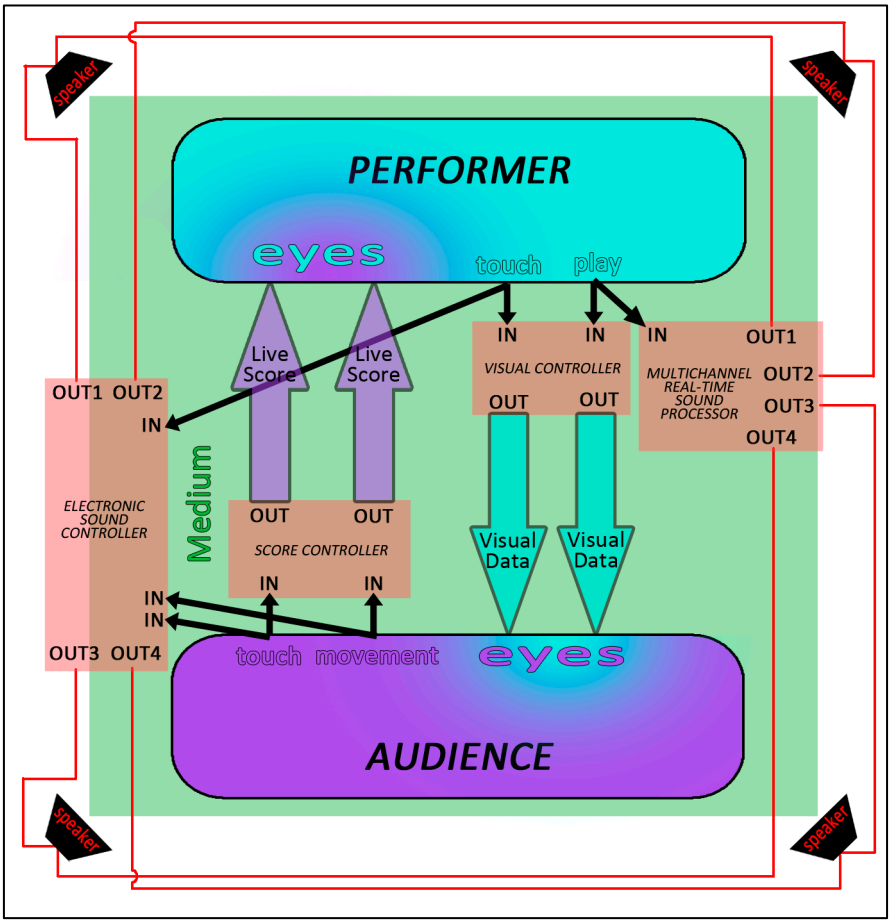


Fig. 6. Detailed diagram, including the diverse blocks of the software that will take care of visual communication and sound processing.

Based on Fig. 6, both agents of this musical event are present to close the open work. The result of this continuous interaction will generate continuously changing visual and sonic elements through the course of the work, perceivable and malleable by every person present on the room, the medium is what will reflect agents' decisions, the work will be closed in the medium by both agents, who are composer, performers and audience.

The technological challenge for this compositional model is substantial. A complex software system must be built to control many pieces of hardware, including diverse types of electric sensors, MIDI and OSC controllers for data input, and processing sound live and playing in a multichannel set up, as well as controlling video projectors and DMX lights. A technological system that already is under construction, that will reflect the decision making of the involved parts, a

piece of technology that will be the open musical piece to compose, an apparatus that can be seen, one more time, under Marshal Mcluhan's principle, "The medium is the message".

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