Don't give up! Media art as an endless conversational process

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Abstract

Purpose – The purpose of this paper is to argue that the potential for contemporary media art production is based on the productive action itself, and that this activity supports the negotiating of understandings. This discussion is based on second-order cybernetics principles, in which the researcher's role is considered in the observation process. It emphasizes the idea that media art is a social and aesthetic system based on conversation and autopoietic processes.

Design/methodology/approach – This argument is based upon a master's research dissertation on contemporary media art production, conducted at the Center for Interactive Living Studies (Nomads.usp). The methodology is based on an immersion in an action-centered research process: the authors conducted a literature review, interviewed 26 people, including artists, curators and theoreticians, visited several exhibitions, media art centers, and produced an interactive installation.

Findings – Aesthetic propositions may trigger conversational processes within different perspectives. The authors see this as related to Luhmann's writings about art as both an aesthetic and social system. Despite the utopian nature of the proposition the authors identify a second-order cybernetic relevance in their investigation.

Research limitations/implications – Limitations are related to the intrinsic specificity of the adopted methodology. It may be possible to derive general theoretical abstractions or methods from the described investigation, but this was never the authors' intention.

Social implications – The authors suggest recognition of media art as a collective practice, discussing this complex activity at micro (individual goals) and macro (overall goals) levels.

Originality/value – This application of self-reference to our reflective art and design research practice will enhance the design of future projects.

Keywords Media art, Second order cybernetics, Autopoiesis, Conversation, Aesthetic system, Social system, Social processes

Paper type Research paper

Introduction

The research presented here started with our desire to approach contemporary media art production from a second-order cybernetic perspective. The challenge of approaching this field in a way that accounts for produced media art as well as participating observers, including the artist, intrigued us.

From this desire sprang action. A deep immersion in related literature, as well as conversations with artists, curators and theoreticians in the field, inspired and enlightened us, providing the groundwork to develop a context for practical experiences. As artists, designers, and researchers, we understand ourselves as curious people who are engaged in our purpose through both individual and general goals (Alexiou and Zamenopoulos, 2007).

This view echoes statements Pask made about learning and the knowledge-production process. According to him, "is prone to seek novelty in his environment and, having found a novel situation, to learn how to control it" (Pask, 1971, p. 76).

Acknowledging Flusser's view of design activity (and of cultural development) as the creation and overcoming of obstacles, we approached this investigation mindful of our own liability to it. Respect for otherness prompts us to focus on relationships and on the human ability to build things capable of triggering other processes, thus negotiating understandings.

This paper reflects our desire for, and is an attempt at, doing so. It is structured in three parts. The first part draws connections between media art and cybernetics. The second part narrates our experience in media art production. In the third part, we analyze our cybernetic approach regarding two notions, namely autopoiesis and conversation.

1. Media art and cybernetics

We are particularly interested in second-order cybernetic principles, which take into account the observer's actions in the process of observing systems, and we examine the circularity, interdependence and autonomy of the relationship between the observer and the observed. Trans-disciplinary practice of media art production requires one to assume artistic and scientific viewpoints, thus alternating between outside-in and inside-out perspectives. This second-order cybernetic observation has also been noted in the field of endophysics, possibly pointing towards an endoesthetics: in a simulated world, "we become both internal and external observers" (Giannetti, 2006, p. 191).

Second-order cybernetic terms like "self-reference", "recursion" and "autopoiesis" highlight the paradigm shift introduced by cybernetic observation and the study of complex systems. Such concepts become inevitable in cybernetic reflections which consider circularity and the presence of the subject in the observing system.

The term "autopoiesis", describing the ability of self-creation, was coined by Humberto Maturana on living systems that "a network of internal and circularly enmeshed processes of production that make them bounded unities by constantly producing and thus maintaining themselves", and "may happen inside them, whatever may penetrate and stimulate, perturb or destroy them, is essentially determined by their own circular organisation" (Maturana and Poerksen, 2004, pp. 47-8).

Maturana (1975, p. 313) notes that "basic consequence of the autopoietic organization is that everything that takes place in an autopoietic system is subordinated to the realization of its autopoiesis, otherwise it disintegrates". Glanville (2001, p. 15) explains that "An autopoietic system is stable through its (dynamic) ability to keep on making

itself anew". Taking this notion as a point of departure, we view media art production as a self-reproductive process, which includes and depends on artistic action. Thus, discussing propositions of interactive media art as potentially autopoietic hinges on the depiction of their boundaries, recursive aspects, autonomy and adaptability.

While technologies deployed in media art production may come and go, the field can be regarded as continuously self-recreating through every instance of art production. The experimental qualities of art produce an aesthetic continuum between analog and digital, which in turn results in the discussion of media art in both contemporary Art as well as Science fields (Broeckmann, 2007, p. 194). The boundaries of the media art field thus appear blurred and complex.

Structurally, interactive artworks are only complete when circular relations between technical systems and contributions by interacting observers are taken into account. Between the exchanges of both a given piece's technical system and a given interactor's mental and sensitive system, circular relationships of conversation may be established, and autonomy may thus be achieved.

Our critical approach to media art production and its ability in mediating conversation and the negotiation of meanings reflects Siegfried Zielinski's view, who poses the question:

> Don't we need more scientists with eyes as sharp as lynxes and hearing as acute as *locus*ts, and more artists who are prepared to run risks instead of merely moderating social progress by using aesthetic devices? (Zielinski, 2006, p. 11).

We assume that the cybernetic way of seeing can guide our art production towards more propositions along the above lines. Significant examples of artistic embodiments of cybernetic ideas may be found in Pask's and Ascott's works. According to Pask (1971), the production of aesthetically powerful environments requires the following qualities:

- the environment needs to offer enough variety to promote the "potentially controllable novelty" by the subject;
- it must contain forms that the subject may interpret, or learn to play at various abstraction levels;
- it needs to provide clues or instructions implicitly declared to guide the learning and abstractive processes; and
- it can additionally respond to the subject, involving it in a conversation and adapting its characteristics to the dominant mode of discourse (Pask, 1971, p. 76).

Such placements pertain to Pask's Conversation Theory. Ascott argues that although we play with objects, we are guided by processes. Composing a kind of cybernetic art matrix (CAM), Ascott (1968, p. 105) mentions the artist's liability in creating propositions which, at both the social scale and the intimate scale of the artifact, would themselves constitute triggering processes.

2. Experiencing media art production

During our investigation we immersed ourselves in practical media art production, while we were visiting researchers at the Interface Culture Department in Kunstuniversität Linz, Austria. After our first proposition ended up too vague, we hoped that simplicity might lead to sophistication, and from there we pruned our ideas. As a result, we arrived at a challenging activity dealing with interface and interaction design. We encountered

implementation difficulties, including the challenge of components sourcing and adapting components to our intentions.

We also observed our engagement with collaborators including the prompt support by friends all over the world who contributed to various tasks, such as coloring animation frames and composing soundtracks.

Interviews conducted during the creative process leading up to the eventual installation enriched our experience and led us to examine our own development and production process.

The resulting installation was set up and discussed on several occasions, each of which brought us a more mature understanding of its potential as an aesthetic and social system for negotiating understandings. The following section describes the project.

2.1 Don't give up! About a history that doesn't want to be told
"Don't give up! About a history that doesn't want to be told" is an interactive installation that mediates a conflict between its interactors and the interaction system itself. Images of four narrative situations are projected onto a physical model that was inspired by Escher's painting *Relativity*. The narratives' contents are interrelated and allow the interactor different layers of interpretation. Interaction with the narratives proceeds through four string pulleys each with different color. Upon manipulating them, the interactor is expected to make the narrative elements available understandable, even though the system was built and programmed to lead them into chaos (Figure 1).

Note: Photo: Mário Ladeira
Source: Lautenschlaeger (2010)

Figure 1.
Participants at FILE 2009
(Festival Internacional de
Linguagem Eletrônica)

The concept was inspired by the book *If on a Winter's Night a Traveler* (Calvino, 1983), in which the reader is interrupted during the story's climax. Along similar lines, the installation[1] is a game between the model-author (the narrative itself) and the model-reader (interactor), as a metaphor for a story that does not want to be told. In this game, the technical system was programmed to lead the narrative to chaos, while challenging the interactor to organize the available images and sounds into a coherent narrative.

"Don't give up!" premiered at Ars Electronica 2008 and was reassembled at FILE – Electronic Language International Festival on three occasions: São Paulo (2009), Rio de Janeiro (2010) and Porto Alegre (2011).

3. The media art production process through our lens

To illustrate the complexity of relations emerging from the cybernetic perspective on media art production, the analysis of conversation and autopoietic aspects within the interactive installation is pivotal.

3.1 Autopoiesis

Based on our readings and on our practical experience, we hypothesized that both the technical system and the underlying creative process of "Don't give up!" could be analyzed in terms of autopoiesis, i.e. range of its boundaries, recursion, autonomy and adaptability.

Recursive aspects, for instance, could be experienced at various levels. On a thematic layer, the inquisitive tension between interactor and the narratives embodied in the technical system juxtaposes the researcher's role with its object of research. The investigative research process is metaphorically reflected in the project title and in the dynamic operation of the installation.

At the level of interaction and aesthetic enjoyment, recursion is present in other forms. The pulley strings present the stories as endless loops, and the development of the narratives only happens through the interactor's contribution. The interactor, handling the endless timelines of the stories projected onto the physical model, enters into a circular relationship with the technical system. Moreover, one of the strings is colored in blue which refers to character in the story of the same color as a special point of recursion. Like the interactor, this character has a rope in hand and roams the landscape looking for something.

It is possible to liken our research and aesthetic experience to the recursive black box model proposed by Glanville (2001, p. 2 ff.). To illustrate, let us exemplify our identification with the report of members from Laboratorio de Luz, a media lab from the Polytechnic University of Valencia, Spain. Both the interviewed researchers, as well as artists Dolo Piqueras and Maria Jose Martinez de Pison, described their work processes as fully invisible. According to them, creating and implementing processes in the media arts is based on openness and consistent and numerous tests. It is a slow and invisible learning process. Piqueras said that during the creative process:

> [...] we learn without being aware that we are learning. We can easily despair because the days go by, many tests are repeated, and there is nothing physical functioning. Only after a certain distance from the experience do we realize that we have learned during all stages of the process[2] (Pison and Piqueras, 2008).

From a critical distance, while manipulating our black box (media art production) (Figure 2), we also observed ourselves interacting, simultaneously analyzing contents

The [new (new)] whole
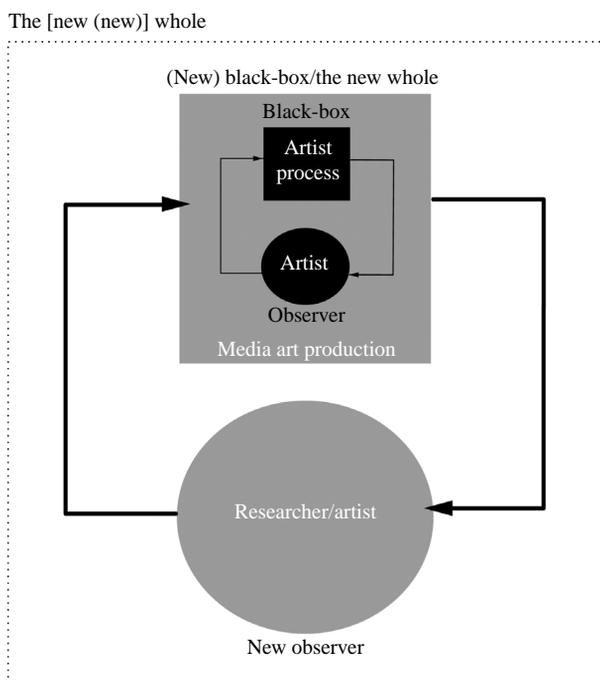
Note: The picture shows a schema where the artist Dolo Piqueras depicts her creation process, and us observing our own process, in which she also takes part
Source: Lautenschlaeger (2010)

we picked up indirectly, and realized an aesthetic experiment. Citing Glanville's model of a recursive black box, we organized our thinking in the following way.

We understand such a description as very convenient and necessary in many instances, academic or otherwise, but essential for making sense of it. Further autopoietic aspects of our project besides recursion are explored below.

3.2 Conversation

Also based on Pask's (1976) Conversational Theory, we argue that collaborative practices of media art may be described as circular processes, in which people who are involved naturally emerge from their experiences having learned something.

Our emphasis on discussing the conversation within the media art field relates to a "terminological inflation" (Glynn, 2008) of "interactivity". According to Glanville (1998), the term interactivity has been turned into multimedia jargon used to refer to technologies that are merely active and reactive. Nevertheless, these manifestations perform tricks, and do not give us anything that is remote and truly interactive, nor is there any meaningful participation, as they are merely responses to certain stimuli (Glynn, 2008). According to Glanville (2001, p. 3), "interaction" refers to "responsiveness that may lead to novelty, in which no participant has formal control over the proceedings. Interaction occurs between

participants, not because of any of them". In contrast, "conversation" is the "interaction in progress" and is described by the author as:

A circular form of communication in which each participant constructs his own understanding. Checks on understandings between participants occur through re-presentation of individual understandings in a feedback loop. Conversation occurs between participants and is essentially interactive (q.v.) (Glanville, 2001, p. 2).

Returning to our example, and considering the constitutive aspect of communication, the technical system was programmed to respond with very strict possibilities to interactors' stimuli. After the first contact with the interface, interactors appeared to immediately understand that their control over the story lines was limited and their engagement depended on their interest, as well as their emotional and mental ambition to unravel the relationships among the characters that were performing a mystery plot in that setting. This statement was made in the analysis of a survey of some interactors, who described their experience in different ways, helping us perceive the low adaptability of the system we created, which was totally dependent on the interactors' engagement.

In the creative process adaptability occurred in a completely different way. During the design and production of the project, while fine-tuning the interaction design concepts, we also participated in circular conversation processes with people from different fields. Their views contributed extensively to the installation we built. Openly influenced by fruitful conversational processes, the initial project changed substantially, evolving into what was displayed in the first exhibition. The references and suggestions that people brought into the conversation about the concepts and techniques to be utilized in the installation created possibilities that were previously unimagined. This could not have been accomplished by just one person; collaborators such as the animation designer Andreea Jebelean were necessary. Until today, in every reassembly, the technical system is subject to change and remains an autonomous, endless work in progress.

During the coordination process, as collaborators' roles and responsibilities were defined, decisions were made according to individual targets, with no centralized source of control. The collective creation of the storylines, for example, under the aesthetic direction of Jebelean, was influenced by what Jebelean wanted to compose for her portfolio.

From a cybernetic perspective, the coordination of the collaborative media art production does not necessarily require the centralization of creative activities. Working with professionals from different fields, as well as negotiating roles, responsibilities, and decisions are made at a local level based on individual goals, with no centralized source of control, forming a distributed control system, from which design outcomes emerge.

It is possible to identify some key challenges that we faced during the coordination of the design processes. For Zamenopoulos and Alexiou (from the field of design and complexity), these challenges included: the need to establish translation procedures between different forms of representation; to synchronize information exchange, to establish roles as well as to delegate structures in organizations. Coordination cannot be regarded as mere management, but also as an activity related to generation of alternative, new and creative solutions (Alexiou and Zamenopoulos, 2007, p. 588).

Collaborative design tasks require distributed participation among local collaborators and coordination that involves knowledge synthesis and construction necessary for the collective project. In this sense, learning is seen as an important means not only to enhance the agent's individual ability and thus derive design

solutions, but also to create shared knowledge of design tasks and their limitations (Alexiou and Zamenopoulos, 2007, p. 589).

In the process of reassembling the installation in FILE – Electronic Language International Festival in July 2009 in São Paulo, other contexts of dialogue emerged. The contributions of technicians and conversations with other artists exhibiting at the festival led to the improvement of our technical system. Like preparing ourselves for Flusser's disciplined creativity, this was a moment when we continued the process of recognition of our peers, building dialogues with people of similar interests.

Other layers of dialogue occurred amongst the exhibition's monitors and visitors, who answered a questionnaire. Other visitors also contacted us via e-mail for information about the conceptual and technical details of the installation, or even just to express the joy they had experienced in engaging in our installation.

On certain occasions, when we had the opportunity to contextualize our research in academic settings, other dialogue possibilities opened up. During the FILE Symposium, a gentleman who introduced himself as an inventor said that our installation's interface inspired him to develop a project in which people would expend energy on daily tasks and at the same time could be entertained. Later, presenting our research at the C:ADM2010 International Conference, organized by the American Society for Cybernetics in Troy, NY, we received further feedback from renowned thinkers from different fields.

3.3 Media art as social and aesthetic system

Despite its technical and mechanistic aspects, media art is primarily produced both by people and for people. It may be considered as a practice to enrich both individual and collective experiences. If we understand machines as "cultural dispositions that articulate and disarticulate human agency, constructing relationships and cutting ties with multiple natures and multiple cultures" (Broeckmann, 2007; Grau, 2007, p. 194), are we able to envision the transforming and liberating power of the "mechanistic aesthetics" of media art?

We consider Luhmann's perspective on art as an aesthetic and social system as support of the view we present here. Based on the systemic theory's paradigm shift and on second-order cybernetic principles, Luhmann (1995) reviews the ideas of subject, action, communication and interaction, beyond the nostalgia of traditional sociologist schools. According to him, communication is understood as a recursive and self-regulatory autopoietic system among other systems, whose operation depends on each part's behavior. Maturana criticised Luhmann's application of the term autopoiesis to communication for excluding human beings from actually communicating (Maturana, 2004, p. 79). We acknowledge this criticism in our work by explicitly accounting for our own action within the media art production process. Based on Luhmann's theory, Gsöllpointner (2008) summarized in the diagram shown in Figure 3 the relationships between artists, their work, and the public. Assuming the elements as dynamic systems, it is noted that communication is the structuring element that links the different systems in interaction.

4. Reflection

Concerning the autopoietic aspects of "Don't give up!", we determined that the interactive recursion could be intensified if two conditions were implemented in the installation. First, if the animations were not constrained within pre-rendered video, but if the interactors could freely move the characters as they pleased. Second, if the

spatial relativity was not static in its three-dimensionality, but rather the space could also be dynamically manipulated.

Despite our intent to achieve recursion in interaction and communication between work and audience, we realized this cannot be achieved via positive feedback that amplifies noises and forces within the system to adapt to the context. In this case, recursion is not the same as that of a "live organism", which has the ability to modify its basic structure in order to adapt to situations caused by the random medium (Laurentiz, 2006). The circularity in the experience of producing *Don' t give up!* thus corresponds to that of the first-order cybernetics and not the second order, whose concept of autopoiesis deals with the incorporation and adaptation of disorders inserted randomly by an external system.

This observation at media art production from the viewpoint of second-order cybernetics contributes to our comprehension of media art as an aesthetic and social system, potentially based on the paradigm shift that digital technologies may be initiating. Creating, producing and discussing media art is a stimulating experimental activity which attempts to produce and maintain an endless conversational process at three levels: structural, relational and critical. Based on the case study discussed here, we feel that even on a small scale, we are beginning a triggering process according to what Ascott (2003a, b) calls a "CAM".

Despite the utopian character in the cybernetic approach, in the context of a radical overhaul, cybernetics has created a new order to things, envisioning various modes of reconciliation, resulting in an "experimental epistemology" (Pias, 2005, p. 544). The experiment lies in the reorganization of knowledge in a way that psychological and sociological, political and economic, aesthetic and biological phenomena as well as agents can be seen as rooted in communication and recursion.

Assuming art to be a social system that anticipates processes of historical unfolding, we ask ourselves whether media art practice can offer a trajectory for the implementation of innovative forms of communication, developing horizontal structures for non-hierarchical production and exchange of knowledge. It would appear to be the case if it were not our natural tendency toward entropy, massification and uniformity. Luhmann and Flusser lead us to conceive communication as an anti-natural, negatively entropic and inter-subjective process. To think of creative
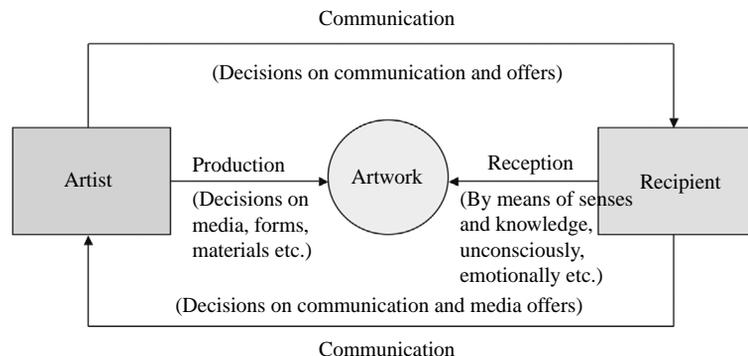

2. Art as an Aesthetic system

Communication

Figure 3.
This diagram was presented by the Austrian researcher Katharina Gsöllpointner (www.katharinagsoellpointner.at/) during her lecture at the Interface Culture Department at the Kunstuniversität Linz on May 27, 2008

Source: Gsöllpointner (2008)

processes in media art as social and communication processes is a way of viewing media art as an anti-redundancy and misinformation agent.

Media art is an experimental field of excellence and may serve social experimental purposes in various ways. Under the collective and trans-disciplinary nature of media art production, connections between the micro (agent) and macro (structure) levels imply on the one hand the need to explain the (un)stability of social structures despite the actions of the individual; and on the other, the drive for variability, creativity and innovation.

Notes

1. For more details regarding this installation, please consult the following link: www.nomads. usp.br/pesquisas/cultura_digital/arte_programmata/dontgiveup.html (accessed February 9, 2011).

2. Interview conducted by us at the Interface Culture Department at Kunstuniversität Linz, Áustria, in 10 September 2008. Available at: www.nomads.usp.br/pesquisas/cultura_digital/ arte_programmata/entrevistas.html (accessed 9 February 2011).

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