



NARRATIVES OF ENGAGEMENT
at the intersection of documentary and media art

Vanessa Vozzo

Universität für künstlerische und industrielle Gestaltung
Kunstuniversität Linz

Institut für Medien - Interface Cultures

Masterarbeit zur Erlangung des akademischen Grades Master of Arts

NARRATIVES OF ENGAGEMENT

at the intersection of documentary and media art

Vanessa Vozzo

Betreut von: Univ. Prof. Dr. Manuela Naveau

Datum der Approbation:.....

Unterschrift der Betreuerin/des Betreuers:.....

Linz, October 2023

Table of Contents

Acknowledgements.....	9
Preface.....	11
Abstract.....	13
1. Introduction.....	15
1.1. Structure.....	15
1.2. Why?.....	18
1.3. A terminology challenge.....	19
<i>The constitution of reality (I).....</i>	21
2. Documentary and media art (a complex relationship).....	23
2.1. From interactive to open documentary: some definitions.....	25
2.1.1. Reality, truth and facts.....	25
2.1.2. A definition of interactive documentary.....	27
2.1.3. Immersive journalism.....	29
2.1.4. The MIT Open Documentary Lab.....	31
2.1.5. The IDFA world.....	33
2.2. Interactivity and immersiveness in documentary and media art.....	34
2.2.1. Interactivity.....	34
2.2.2. Immersiveness.....	36
2.3. From expanded cinema to the floating work of art in media art.....	38
2.3.1. Expanded cinema.....	38
2.3.2. Reality vs. the representation of reality.....	40
2.3.3. The floating work of art.....	42
2.4. Final Remarks.....	43

3. Narrative ecosystems (in a real digital world)	45
3.1. Narrative <i>nodes</i> in a digital world.....	47
3.1.1. Node I. The <i>constraint</i>	50
3.1.2. Node II. Associative thinking and the hypertext.....	51
3.1.3. Node III. Interactive and transmedia storytelling.....	53
3.1.4. Node IV. The two axes.....	55
3.1.5. Node V. Rhizomatic multiplicities.....	56
3.1.6. Node VI. The <i>articulation</i> of the <i>real</i>	58
3.1.7. Node VII. Participation.....	61
3.2. Final remarks.....	63
<i>For a better world (II)</i>	65
4. My narrative ecosystem	67
4.1. <i>Apnea</i> . Action-research about migrants and the sea.....	69
4.1.1. Forward.....	69
4.1.2. Origins and description.....	69
4.1.3. Luck and pain.....	70
4.1.4. <i>Apnea</i> narrative design.....	72
4.1.5. Final remarks.....	77
4.2. Presence. Transformative XR Live Experiences.....	78
4.2.1. Forward.....	78
4.2.2. Origins and description.....	78
4.2.3. <i>Missing Out</i>	81
4.2.4. <i>Tiny Uppercase. Our Hidden Sense</i>	85
4.2.5. <i>Are You There?</i>	89
4.2.6. Final remarks.....	93
4.3. Who can decide our <i>next nature</i> ? Photosynthetic humans.....	94
4.3.1. Forward.....	94
4.3.2. <i>Photosynthetic Me</i> . Origins and description.....	94
4.3.3. <i>Photosynthetic Me</i> narrative design.....	97
4.3.4. From <i>Photosynthetic Me</i> to <i>Photosynthetic You</i>	100
4.3.5. <i>Photosynthetic You</i> . Description.....	101
4.3.6. The workshop as a narrative ecosystem.....	102
4.3.7. Final remarks.....	104

5. Roots and vibes.....	105
5.1. Marcel·lí Antúnez Roca. <i>Sistematurgy</i>	107
5.2. Make your choice. Blast Theory: <i>Karen</i>	109
5.2.1. Foreword.....	109
5.2.2. About Blast Theory.....	109
5.2.3. About <i>Karen</i>	110
5.2.4. <i>Karen</i> narrative design.....	111
5.2.5. Final remarks.....	112
5.3. Deterritorialization. Teri Rueb: <i>Of Lands and dreams</i>	113
5.3.1. Foreword.....	113
5.3.2. About Teri Rueb.....	113
5.3.3. About <i>Of Land and Dreams</i>	115
5.3.4. <i>Of Land and Dreams</i> narrative design.....	115
5.3.5. Final remarks.....	116
5.4. Breaking the magic circle. The National Film Board of Canada..	117
5.4.1. Foreword.....	117
5.4.2. About the National Film Board of Canada.....	117
5.4.3. About <i>The Enemy</i>	118
5.4.4. <i>The Enemy</i> narrative design.....	119
5.4.5. Final remarks.....	120
6. Conclusion.....	121
References.....	123

Acknowledgements

First and foremost, my heartfelt thanks go to Christa Sommerer and Manuela Naveau. They both, at different points in my thesis research, encouraged me to remain passionate about my artistic work, even when I felt distant from it and gave me the courage to forge ahead when the path seemed uncertain. In different ways, their approaches/perspectives have profoundly impacted me as an artist and a person. Alongside them, I also extend my thanks to Victoria Vesna and Laurent Mignonneau and to all the professors and researchers on the Interface Culture Master program, in particular Davide Bevilacqua and Fabricio Lamoncha. Having the privilege to meet and learn from them has offered me a new, fresher perspective on art.

I also express my heartfelt thanks to my husband, Andrea, for his enduring patience during these recent months of intense writing, for his valuable advice and for his unwavering support to me as I pursue my dreams. And to my daughter Petra for her unconditional love, for the relentless curiosity that drives her, like me, to constantly seek out the new and for the respect she has for my work.

Lastly, my thanks go out to the members of the Cohousing Montesole community, who share my daily life. I am grateful for their understanding of my periods of silence, their tolerance of my rambling speeches and, above all, their acceptance of my occasional absences when it was my turn to care for our common space.

This thesis is dedicated to my mom, Maria Rosa, my sister, Marisa and my dad, Vincenzo. It is your memory that gives me the strength to weave beautiful stories.

Preface



As I examine these images, I question if the one labeled 'original' truly represents me and whether the other depictions, crafted by artificial intelligence, are equally authentic representations of me. The 'original' image might not necessarily be a truthful representation of me: after all, I could have added this label myself. Upon closer inspection, it becomes clear who the real 'me' actually is. These pictures could simply be various portrayals of me in different narratives that artificial intelligence has helped bring to the surface. The fourth depiction of me (starting from the left), for instance, seems more peaceful, more amiable than the 'original' me. Perhaps I could use this perspective as a starting point for recounting unpredictable, random narratives of myself generated by external agents like artificial intelligence. There I am, languid and motionless, reclining on the sofa waiting for artificial intelligence to take over my life and impose a narrative, something that might indeed be already happening. In short: *chaos*.

Very well then, let us regroup and proceed on a more serious note! So...

I find this preface key to shedding light on the core theme of my thesis: namely, the idea that narratives structure life, directing us towards certain actions rather than others.

This insight accompanied me for many years, during which the sequence of tragic events then marking my life were amplified, altered and shaped by my own dramatic self-narrative and by my awareness that "drama only fully comes to life when it is performed on stage", as Hanna Arendt would say (2017/1958, 206).

In this self-narration, death and sorrow long defined the fabula and the plot, in an interweaving of art and life, until the birth of my daughter Petra completely transformed that narrative. This event propelled me towards a new approach, in which art, life and community are united by the narrative of a multispecies-oriented and relational me, in harmony with my actions in the world.

The motif of this thesis stems from the joy of this shift in my story – in which I

am no longer the sole character – to a potent, living narrative whose structure suggests to me that my actions in the world are a product of my self- and collective narration and vice versa. This situates me within an expanded ecosystem composed of many ecosystems, which I am gradually striving to perceive and recognize.

Abstract

In this thesis, I investigate emerging genres and artworks at the intersection of documentary and media art, where narratives play a pivotal role in the constitution of reality and in the reconstruction of social ties. From this perspective, I identify and delineate a new ecology of 'narratives of engagement' that harness technological advances to stimulate critical thinking and foster action and activism. I then situate within this framework the narrative ecosystems present in some of my own creations as well as in other works that resonate with my artistic practice.

1. Introduction

1.1. Structure

The thesis is divided into two parts: *The Constitution of Reality (I)* and *For a Better World (II)*. In the first section, I establish the conceptual framework, while in the second I present a set of artistic case studies. The titles of the two parts form the provocative phrase: The Constitution of Reality for a Better World.

The constitution of reality is an allusion to a subchapter in Katja Kwastek's essay, *Aesthetics of Interaction in Digital Art*. It is an intriguing phrase that points to the fascinating, yet philosophical concept that reality does not exist but can be constituted. But constituted by what? According to Kwastek, under normal circumstances, reality is produced by actions (Kwastek 2013, 85). She suggests that some artists intentionally leverage this basic premise to break free from the 'magic circle' of representation and to begin acting within the reality of the world. This idea is further developed by Claire Bishop in her influential book, *Artificial Hells*, where she stresses the need for an "art of action that interfaces with reality and moves – even if in small steps – towards the reconstruction of social ties" (Bishop 2012, 23)¹.

Now, in my opinion, in this 'art of action' aimed at the 'constitution of reality' and at the 'reconstruction of social ties', narrative plays a fundamental role. According to Rancière, enunciations, whether political or literary, can affect reality. They shape patterns of speech and action. They take possession of bodies, open derivations, transform the ways, speeds and trajectories with which humans adapt to a condition, react to a situation, or recognize their own images. "Man is a political animal because he is a literary animal that allows himself to be diverted from his 'natural' course by the power of words" (Rancière 2022, 59-60)².

This underlying principle, independently of any historical political dynamics related to the power of governments and rulers, lays the foundation for this first part of my thesis, where I investigate emerging genres in which narrative (in the context of *the art of action*) plays a crucial part in the constitution of reality and in the reconstruction of social ties.

¹ Text in references (in Italian): "Un'arte dell'azione che si interfaccia con la realtà e si muove – anche se a piccoli passi – per ricostruire il legame sociale".

² Text in references (in Italian): "L'uomo è un animale politico, perché è un animale letterario che si lascia sviare dalla sua destinazione 'naturale' dal potere delle parole".

From this perspective, in the chapter *Documentary and media art (a complex relationship)*, I outline some of the historical, artistic, academic and institutional tendencies underpinning practices at the intersection of documentary and media art. The focus here is on the transitioning of the audience – whether individually or collectively – from mere observers to the stance of *doer*³.

During my exploratory journey, I touch upon key concepts such as interactivity, immersiveness, representation and interpretation, outlining the salience of each to this thesis. My objective is to map an inductive area where diverse practices from documentary and media art can come together, engage with one another and coexist.

In the chapter *Narrative ecosystems. In a real digital world*, I explore the role and the potential of narrative in the floating process of the constitution of reality. Within this framework, 'narrative' is defined as a structure that shapes how events are unveiled and that expresses the intention to engage with reality within the boundaries of an artistic work.

Given my purposes here, I do not consider conventional classifications of narratives, but rather aim to untangle the intricate ways in which narrative weaves itself into an active and propulsive role, engaging both the individual and the collective.

This chapter is designed as a map of nodal convergences, inspired by Gilles Deleuze and Félix Guattari's metaphor of the *Rhizome*. Narratives here draw on an array of diverse practices and theories that have evolved over time within the artistic, literary, philosophical and scientific domains.

My ultimate aim is to identify and delineate a new ecology of 'narratives of engagement' with the power to harness technological advances in order to stimulate critical thinking and foster action. Deliberately, I have not charted a specific path, line or network among the nodes because I believe that today,

³ The term *doer* is used, in her doctoral thesis, by Sandra Gaudenzi, whom I discuss later, to emphasize the active role of the user. More specifically, in a passage of her thesis, Gaudenzi writes: "This research argues that interactive documentaries should be looked at as *relational* entities, rather than static ones. The term 'relational' implies that these are dynamic systems formed by heterogeneous entities (humans, machines, protocols, technology, society, culture) where all the components are interdependent. For example, their interactive nature demands an active participation of the user who, de facto, becomes a *doer*, rather than a *viewer*. The user needs to act on, interact with, the interactive documentary for it to materialize itself into a new screen. The user is therefore not *external* but rather *internal*, "part of" the system" (Gaudenzi 2013a, 15). And later: "By placing the *viewer* in a position of *doer* they [interactive documentaries] afford specific roles that are both symptomatic and formative of social and political power relations. What type of *doer* the user becomes depends on the interactivity afforded by the artefact" (Gaudenzi 2013a, 37).

individual artists have the opportunity to construct their own constellations by connecting these nodes as a function of their personal outlooks. Having outlined this framework, I then situate my own work and that of other artists within it in the second part of the thesis.

Hence, in *For a Better World (II)*, I explore the narrative ecosystems that are present in my own creations and in other works that resonate with my artistic practice.

In *My narrative ecosystem* chapter, I focus on my own narrative approach.

Specifically, I present the narrative approaches that I used in three artistic projects:

- ◆ *Apnea*, an immersive and interactive installation about migrants and the sea, 2016.
- ◆ *Missing Out*, *Tiny Uppercase* and *Are You There?*, part of the long-term project, *Presence*, which has been ongoing since 2019 based on performance, eXtended Reality (XR), Virtual Reality (VR) and 360° cinema.
- ◆ *Photosynthetic Me* and *Photosynthetic You*, two projects combining media art, documentary and bioart, presented in 2020 and 2022, respectively.

Finally, in the *Roots and vibes* chapter, I explore other artistic universes that have contributed to shaping my critical thinking around the concept of narrative ecosystem.

To this end, I briefly introduce my collaboration with Marcel·Lí Antúnez Roca, which has significantly shaped my thinking about the relationship between narrative and media art.

Then I move on to artists at the intersection of open documentary and media art, with whom I have had key exchanges of opinion, discussions and collaboration. Specifically, I examine the narrative approach of Blast Theory, Teri Rueb and the National Film Board of Canada by examining one representative work of each.

1.2. Why?

As an artist, curator and professor, I have been working for many years at the crossroads of media art, cinema and the performing arts, while maintaining a constant focus on socio-political issues. I have created art pieces and participated in numerous activities in prisons, disadvantaged neighborhoods, with disabled persons, on the streets and in residential care facilities.

For 14 years, prior to 2008, I directed performing and multimedia art festivals that tackled these themes and in 2007, I co-founded a media art platform, *Officine Sintetiche*⁴, where great importance was attributed to the socio-political aspects of the projects that were produced.

As an individual, I am an incurable (and obstinate) utopian with the ambition of enhancing the world we live in, primarily through collective work. This drive led me to contribute to setting up the community Cohousing Montesole – where I currently live, in the countryside near Turin in Italy – which has greatly influenced my work and, unquestionably, this thesis.

Given my background in the performing arts, my interest in narrative has not only offered a core focus for my artistic endeavors but has also provided fertile ground for the development of my overall worldview and approach to life.

Then in 2015, I had the opportunity to produce *Apnea*, an immersive and interactive installation focused on migrants crossing the Mediterranean Sea to find a new life in Italy – a project that I explore in detail later in this thesis.

The enriching experiences in my past, my transformative journey through *Apnea* and my inspiring interactions with other artists, as well as the artistic and technological insights I have gained from the Interface Culture Master program in Linz, have brought about a significant metamorphosis in my artistic approach in recent years. Today, my approach is more open and systemic and, at the same time, more mindful of the power of narrative to engage others both deeply and directly.

⁴ *Officine Sintetiche*, which I frequently reference in this thesis, has often offered a framework and a source of support for my projects. *Officine Sintetiche* is a platform that develops and promotes new media art and digital creativity with a special focus on interactive media art. *Officine Sintetiche* fosters interdisciplinarity and cross-disciplinarity, encouraging new skills in various fields of arts and sciences. Within the platform, there is active collaboration between professionals, artists, scholars, researchers and students. *Officine Sintetiche* was founded based on a concept developed by Tatiana Mazali, Antonio Pizzo and Vanessa Vozzo.

1.3. A terminology challenge

As I round off this introduction, I wish to address a challenge that I faced when selecting an appropriate term to denote what is typically referred to as the 'spectator', 'visitor' or 'user/interactor'. To avoid overcomplicating this thesis with term-switching or a tedious list of terms, I have chosen to use the term 'recipient' throughout. I endorse this term due to its overtones of welcome and the way that it is used in Katja Kwastek's *Aesthetics of Interaction in Digital Art*. In the context of more performative events or workshops, I occasionally replace 'recipient' with 'participant' and in the context of more gaming-oriented experiences with 'player'. I hesitated to use 'doer', although if anything I find it more fitting, because it might seem overly abstract or lend itself to misinterpretation. Naturally, my struggle with this question is not arbitrary. The issue of the audience and its position in the artwork, particularly in the blurred forms of art that I investigate here, is an objectively complex matter that I revisit in the conclusions to this thesis.

The constitution of reality (I)

2. Documentary and media art (a complex relationship)

What is meant by open or *interactive documentary*? What experiences emerge from the combination of documentary and active participatory practices within a certain segment of media art that bears labels such as *expanded cinema*? What is *immersive journalism* and how does it fit within these practices?

In this chapter, I outline some of the historical and influential artistic, academic and institutional tendencies underpinning recent practices at the intersection of documentary and media art that invite the direct and active involvement of recipients – who find themselves, whether individually or collectively, in the position of doers rather than of mere observers.

During my exploratory journey, I touch upon key concepts such as interactivity, immersiveness, representation and interpretation, outlining the salience of each to this thesis. My objective is to map an inductive area where diverse practices from documentary and media art can come together, engage with one another and coexist.

2.1. From interactive to open documentary: some definitions

2.1.1. Reality, truth and facts

As an indispensable introduction to explaining what an interactive documentary is, I deem it appropriate to begin with debates surrounding the relationship between documentary and reality, without dwelling too much on the origin of documentary or its different genres or classifications, topics that fall outside the scope of this thesis.

I have been interested in documentary filmmaking as a form of storytelling about current socio-political issues since I was a teenager, but, over time, I have learned that documentary can also be a form of representation that is extremely distant from the reality it attempts to represent. As a scholar and as an artist, this concept is now so ingrained in me that I have long preferred documentaries such as those of well-known directors like Werner Herzog or Wim Wenders, in which reality lurks in the research of the maker, in the plot turns of a well-written screenplay, in the power of the images or in the editing, rather than in the claim to an impossible objectivity in the form of a poorly done interview. In this regard, Herzog, who has encouraged unstable boundaries between reality and fiction in documentary, himself distinguishes between truth and fact: as recalled on the Walker Art Center website, while presenting his *Minnesota Declaration*, he stated that: "there's something ultimately and deeply wrong about the concept of what constitutes fact and what constitutes truth in documentaries" (Herzog 1999).

Indeed, in the fourth point of the Declaration, he asserts that "Fact creates norms and truth illumination" (Herzog 1999). In the fifth point, he goes on to explain what he means by the term 'truth': "there are deeper strata of truth in cinema and there is such a thing as poetic, ecstatic truth. It is mysterious and elusive and can be reached only through fabrication and imagination and stylization" (Herzog 1999).

The concept of truth in documentary filmmaking has been widely debated and Herzog expresses this well in his brief and provocative statement that: "Cinéma-vérité confounds fact and truth and thus plows only stones. And yet, facts sometimes have a strange and bizarre power that makes their inherent truth seem unbelievable" (Herzog 1999).

Yet, cinéma-vérité is merely part of a discussion that had begun a few years earlier (and is still ongoing) about the relationship between reality, truth and fact and their interpretation via documentary. Nichols, a well-known American

film critic and theoretician, offers further interesting considerations about truth in cinéma-vérité. In his view, the truth is the truth of an encounter rather than the absolute truth. Specifically, the audience can see how the filmmaker and the subject negotiate a relationship, a form of interaction that is revealed by the camera.

What we see is what we can see only when a camera, or filmmaker, is there instead of ourselves (Nichols 2001, 118).

Regarding the relationship between reality and interpretation, Grierson, who is considered to be one of the fathers of documentary film, claims that the task of the reality presented in a documentary is not to reproduce but rather to interpret. However, it "is only good if its interpretation is a real interpretation, that is to say one which lights up the fact, which brings it alive, which indicates precisely and deeply our human relation to it" (Galloway 2013, 13). Grierson further explores this concept in his manifesto, where he lists and elaborates on documentary's fundamental principles, stating that:

The arbitrary rectangle of the screen reveals and enhances movements, giving them maximum effectiveness in space and time. It should be added that the documentary can achieve a deeper understanding of reality (Grierson 1960/1946, 44).

In addition, Grierson argues that:

One photographs 'real' life but also gives an interpretation, carefully juxtaposing the details contained within it (Grierson 1960/1946, 46).

Galloway⁵ takes up and amplifies this concept of interpretation when, in reference to *Nanook of the North* (1922) by Robert Flaherty, he claims that: "Even the earliest examples of documentary are based around semi-fictional treatments or anthropomorphization of their subject matter" (Galloway 2013, 8).

This never-ending debate on the relationship between reality, truth, fact and how these are interpreted through documentary, together with a strong focus on developments within the digital media, has catalyzed new energies and visions around so-called interactive documentary. This genre arose about 2007, thanks to a group of researchers, scholars and professors, as a new form that distanced itself from linear documentary and also from previous approaches to interactive documentary. As Sandra Gaudenzi, one of the

⁵ Dayna Galloway is Head of Division of Games and Arts within the School of Design and Informatics at Abertay University in Scotland. Dayna's research focuses on the structures, dynamics and aesthetics of video games and, in particular, on the emergence of new interactive forms and experimental game design practices.

protagonists of the following pages, comments: "The interaction afforded by digital media has blurred the distinction between author and user/viewer/reader/player" (Gaudenzi 2013b, 22). This development took the old debate a step forward and forced a radical change in documentary.

2.1.2. A definition of interactive documentary

The definition of interactive documentary was discussed within the framework of a Symposium entitled i-Docs held on 25 March 2011 and organized by the Digital Cultures Research Centre (DCRC) at the University of the West of England⁶. At this Symposium, the interactive documentary genre was re-examined in light of new artistic practices and forms of inquiry.

Sandra Gaudenzi, one of the curators of the Symposium (together with Judith Aston and Mandy Rose)⁷ and a researcher in the field of interactive documentary, presented the origins of this new genre, emphasizing the fact that in 2007 very little had been written or formalized about it in the academic field. According to Gaudenzi, this might be partly because most new media artists do not view themselves as documentary filmmakers and so do not have the perception that they are making interactive documentaries (Gaudenzi 2013a, 26).

Hence, the new genre was mainly taken into consideration by documentary or cinema filmmakers and writers, who attempted to define it as an evolution of linear documentary into the digital realm, assuming that an interactive documentary had to be mainly video based and that "interactivity was just a way to navigate through its visual content" (Gaudenzi 2013a, 27).

The 'writers' whose definitions were cited by Gaudenzi as too narrow, included Carolyn Handler Miller, author of *Digital Storytelling* (2004) and Katherine Goodnow of the University of Bergen (Gaudenzi 2013a, 2013a, 27). In contrast, Gaudenzi's own take, as she declared at the opening of i-Docs, was that interactive documentary is not an evolution of the linear documentary, but rather an independent genre that emerged circa 2008.

⁶ The Symposium is hosted by Bristol's Watershed Media Center (www.watershed.co.uk/) with a follow up stage at Pervasive Media Studio (www.pmstudio.co.uk. i-docs.org/about-interactive-documentary-idocs/i-docs-symposium/).

⁷ Sandra Gaudenzi teaches at the University of Westminster and at UCL (University College London). She is one of the conveners and creative director of the i-Docs symposium in Bristol (one of the leading centers in Europe for research into evolving documentary practices). She has a background in television production, but now she mostly works in the field of interactive narrative and digital stories in documentary. Judith Aston is Associate Professor and Wallscourt Fellow in Film & Digital Arts at UWE Bristol. She is a Founding Director and curator of i-Docs Mandy Rose is Professor in Documentary & Digital Cultures at UWE Bristol. She is one of the curators of i-Docs.

Judith Aston made a similar claim, predicting that interactive documentary would be very inclusive. Indeed, the genre also encompasses games, participatory experiences, web and installations (DRCR 2011).

In addition to the above definitions, what lends the appearance of openness, independence and a broad vision to the new interactive documentary genre in the context of the i-Doc Symposia is the range of the speakers from different fields, from media art, to cinema, to documentary. A speaker who stands out is Matt Adams, one of the founders of Blast Theory, a pioneering group whose work spans media art, cinema and gaming and whom we shall meet again in Chapter 5.

Following the inaugural i-Doc, Judith and Sandra wrote an article 2012, in which they further elaborated on some of the concepts explored at the Symposium; their definition of the interactive documentary emphasized the strong openness of this genre:

In order to begin the discussion, a definition of i-Docs is needed. The position taken in this article is that any project that starts with an intention to document the 'real' and that uses digital interactive technology to realize this intention can be considered an interactive documentary. This is a deliberately broad definition of i-Docs, which is platform agnostic (Aston and Gaudenzi 2012, 125-126).

This definition goes hand in hand with that developed by Galloway:

...we may define it [the interactive documentary] as any documentary that uses interactivity as a core part of its delivery mechanism (Galloway 2013, 21).

In the same article, the two authors also specify, to avoid misunderstandings, that interactivity in this context is “a means through which the viewer is positioned within the artefact itself, demanding him, or her, to play an active role in the negotiation of the ‘reality’ being conveyed through the i-doc” (Aston and Gaudenzi 2012, 126).

Gaudenzi, in a further clarification of what she means by interactivity, has also drawn on the theorizing of Humberto R. Maturana and Francisco J. Varela and the particular emphasis placed on the concept of interaction in their seminal book *Autopoiesis and Cognition*, from which she draws the following citation: “It is the circularity of its organization that makes a living system a unit of interactions and it is this circularity that it must maintain in order to remain a living system and to retain its identity through different interactions” (Gaudenzi 2013a, 80).

Thus, Gaudenzi situates the concept of interactivity within the complex notion of living systems (and humans as living systems), which – thanks to their self-making, self-organizing and adaptive capacities – are in constant interactive and circular relations with other living systems and with the environment. Following this line of reasoning, Gaudenzi sees interactivity as inter-activity, that is to say, as “our fundamental way of being, our way of relating and existing through doing”. Moving on from Varela and Maturana to return to the interactive documentary, she concludes: “If we extend this logic to interactive artefacts, such as interactive documentaries, then our interacting with them is a way to relate and construct, our world” (2013b, 21).

Thus, the interactive documentary is variable, modular (Manovich 2001) and in a constant state of transformation. Gaudenzi says that it is a 'living documentary' in the pure and biological sense, where the word 'living' is chosen because “it relates to the idea of 'being alive'” (Gaudenzi 2013b, 25).

What living documentaries allow us to do is to look at interactive documentaries as dynamic entities that co-emerge while they live through the interactions with the Internet, their users, subject, producers, or any acting entity. They put the emphasis on becoming, rather than explaining. They liberate the user from the responsibility of control and put him in a position of inter-actor (Gaudenzi 2013b, 26).

We will circle back to this key concept later in this chapter and in Chapter 3, but our discussion of it up to this point has served to pin down a precise definition of the genre.

2.1.3. Immersive journalism

The term *immersive journalism* is defined by Nonny de la Peña⁸, a pioneer in this field, as an innovative form of documentary that involves the use of immersive technologies and that is part of the larger genre of interactive documentary. According to de la Peña et al., immersive journalism has nothing to do with interactive journalism⁹ and is distinct from "lowlevel

⁸ Nonny de la Peña is a journalist and a pioneer/founder of immersive journalism. She is the director of Arizona State University's Narrative and Emerging Media program, a best-in-class research and graduate program with a focus on new narratives developed using emerging media technologies in the areas of arts, culture and nonfiction. She is the founder and CEO of Emblematic Group and has won many prizes in the field of immersive journalism.

⁹ In this context, 'interactive' refers to the deployment of various web-based tools designed to amplify and encourage citizen engagement in news consumption and dissemination. It is related to the *public journalism* movement, which began in the early 1990s. The aim of this movement was to revitalize public life and civic engagement by encouraging the press to promote and improve opportunities for public debate and discussion (Spyridou and Milioni 2019, 1).

immersive journalism, which supplies information in novel forms such as computer games, online communities" (de la Peña et al. 2010, 299); rather it is:

the production of news in a form in which people can gain first-person experiences of the events or situation described in news stories (de la Peña et al. 2010, 291).

By "combining virtual reality technologies" says de la Peña "with strong storytelling techniques, profound and visceral experiences can be offered to the audience" (de la Peña 2017, 209). This form of journalism uses immersive environments and embodied narratives to effectively engage the user in socio-political issues of current importance, as demonstrated in de la Peña's *Project Syria*¹⁰.

According to de la Peña et al., to offer a truly effective experience, the immersive environment must not only offer a realistic representation of the worlds it simulates, but must also meet criteria concerning sense of *presence* or *place illusion*, the *plausibility illusion* and identification with the virtual body and its behavior (de la Peña et al. 2010, 294). Mel Slater¹¹ argues that *place illusion* is "the strong illusion of being in a place despite the sure knowledge that you are not there" (Slater 2009, 3551), while *plausibility illusion* is "the illusion that what is apparently happening is really happening (even though you know for sure that it is not)" (Slater 2009, 3553). Regarding the body and the degree to which it feels part of the virtual environment and identifies with it at the sensorimotor level, de la Peña et al. state that "a body representation is necessary for the completion of both PI (Place Illusion) and Psi (Plausability Illusion)" (de la Peña et al. 2010, 295) and that "we mean transferring people's sensation of place to a space where a credible action is taking place that they perceive as really happening and where, most importantly, it is their very body involved in this action" (de la Peña et al. 2010, 294).

According to the theory and praxis of immersive journalism, which are informed by de la Peña's outlook, the combination of these three principles (place and plausibility illusion and identification with the virtual body) within a

¹⁰ Project Syria is a 2014 immersive journalism project that places viewers in the middle of the Syrian civil war, with the goal of generating deeper understanding and empathy for the experience of civilians during the conflict. It was commissioned by the World Economic Forum. (docubase.mit.edu/project/project-syria/).

¹¹ Mel Slater is a Distinguished Investigator at the University of Barcelona and a Professor of Virtual Environments at University College London. He is a highly respected researcher in the field of virtual reality (VR). Slater's work often intersects with psychology, computer science and engineering and includes understanding the impact of virtual reality experiences on attitudes, beliefs and behavior.

virtual environment engages the recipient in a first-person perspective, fostering a deep, empathetic effect.

In conclusion, de la Peña states that virtual reality systems are an exceptional means of creating first-person experiences with regard to news that we normally consume in the third person and that immersive journalism offers a unique opportunity for understanding facts, as compared to print journalism or the passive viewing of audio-visual material (de la Peña et al. 2010, 299-300).

2.1.4. The MIT Open Documentary Lab

In addition to the Digital Cultures Research Centre mentioned in 2.1.2., other organizations have shown a strong interest in the innovative forms of documentary brought to prominence by the i-Docs Symposia. One organization especially worthy of mention in this context is the MIT Open Documentary Lab (ODL). The ODL was born in the context of the New Arts of Documentary Summit (MIT Open Documentary Lab 2012) – held in the Bartos Theater at the MIT Media Lab in 2012. It was based on the thinking of William Uricchio, a professor at the Department of Comparative Media Studies/Writing of the MIT School of Humanities, Arts and Social Sciences (SHASS), which hosts the Laboratory where Uricchio is Principal Investigator. Significantly, the summit was presented as follows:

The event is about collaboration. It will privilege conversation over presentation. We're bringing together mediamakers, technologists, scholars, curators and funders to explore the new documentary landscape and to ask what we can do to foster innovative and responsible forms of participation (MIT Open Documentary Lab 2012).

The ODL stemmed from the need to understand new technological developments, to fully explore issues of authorship and narration and to stimulate the potential for participation and co-creation in relation to newly emerging forms of documentary. The ODL's mission is to bring together narrative designers, technologists and scholars, with a particular focus on collaborative, interactive and immersive narratives. Regarding the Lab's approach to documentary, the official website states that:

The Lab understands documentary as a project rather than as a genre bound to a particular medium: documentary offers ways of exploring, representing and critically engaging the world. It explores the potential of emerging technologies and techniques to enhance the documentary

project by including new voices, telling new stories and reaching new publics (MIT Open Documentary Lab n.d.).

The word 'open' is not included in the title of the laboratory by chance. It is a term that seems particularly appropriate and that bears multiple meanings. Indeed, with respect to the i-Docs group, the ODL favors a different approach. While Aston and Gaudenzi attempt to define a specific field of action (albeit a wide one), stating that the interactive documentary is “any project that starts with an intention to document the ‘real’ and that uses digital interactive technology to realize this intention” (Aston and Gaudenzi 2012, 125), the MIT Open Documentary Lab seems to focus on concepts such as participation, co-creation, community, network and extended culture, even explicitly embracing the open courseware and open source software movements with which it shares purposes and methods (MIT Open Documentary Lab n.d.).

Let us not forget that the lab's name appears to explicitly reference Umberto Eco's *Open Work*, a 1962 essay of great significance and importance to the field of art, which I discuss later. During an online speech for The Early Visual Media Lab¹², Uricchio clearly states that the ODL conducts projects, events and research that revolve around culturally established concepts such as participation, inclusivity and community, via communication systems and social rituals that use contemporary tools and platforms.

Uricchio, in the same context, discusses the concept of *co-creation* as a key feature of the ODL. Co-creation may be understood in a broad sense as an implicit cultural characteristic of the human species, but also as a contemporary production method that allows us 'embrace complexity' (Uricchio 2022) more functionally and effectively, especially in relation to certain themes such as power or inequality. Indeed, co-creation is one of the most researched topics in the field of new forms of documentary and the focus of an entire section of Mandy Rose's earlier cited book, *i-Docs. The Evolving Practices of interactive documentary*. In an article with the significant title "Not media about, but media with. Co-creation for activism", citing an interview with film-maker Kat Cizek, Rose argues that participation “is only one specific methodology that is appropriate for certain contexts and not others. [...]. Co-creation is about having a broader sense of the co-design and the spirit behind making something” (Rose 2017, 51).

And in the conclusions of her doctoral thesis, Gaudenzi again states:

¹² This is a cross-disciplinary research lab focused on the study of visual media heritage, based in Lisbon, Portugal.

Opening content to users, allowing the documentary to grow and change as a living organism, seemed to indicate the beginning of a new era of documentary production where co-creation of reality, rather than representation and documentation of it, was the raison d'être of such new form (Gaudenzi 2013a, 252).

The ODL is aligned with the principles of interactive documentaries and of course Uricchio discusses interactivity and interactive documentary in his writings (Uricchio 2019). Nevertheless, as we have seen, the Lab's approach is more extensive and sociological.

2.1.5. The IDFA world

Another organization that I cannot omit from this review is the IDFA DocLab, a pioneering platform for interactive documentary and Storytelling launched by Caspar Sonnen¹³ in 2007. In addition to the IDFA DocLab Research & Development Program implemented in collaboration with the ODL, the platform organizes high-profile competitions and awards, an exhibition, an interactive conference, a forum and industry events in the context of the IDFA (International Documentary Film Festival Amsterdam), a well-known international documentary festival that has taken place annually in Amsterdam, Netherlands since 1988. Together with the ODL, the IDFA DocLab promotes the production and dissemination of 'open' or 'interactive' documentaries by proposing specific topics that stimulate the development of an emerging and innovative genre spanning documentary and media art. The competitions are open to all types of immersive and interactive projects, from XR projects, to web docs, audio experiences, apps, data art, virtual reality, installations, live performances and fulldome. In an interview, Sonnen describes the IDFA DocLab as aligned with its parent festival, the IDFA, but also as distinct, stating that the program is not necessarily confined to cinema but can also extend to theater, poetry, dance, design, gaming, or to any other artform that is related to technology and, of course, to reality (Sonnen 2022). The IDFA DocLab is a large container of ideas, energies and connections. It fosters emerging forms of creativity between documentary and media art. Its aim is to not only be active in the sphere of production, but also to contribute to distribution, thereby stimulating a developing but still weak market.

¹³ Caspar Sonnen is the new media coordinator for the International Documentary Film Festival Amsterdam (IDFA) and curator of the IDFA DocLab.

2.2. Interactivity and immersiveness in documentary and media art

In this subchapter, I go deeper into the definitions of interactivity and immersiveness, which – according to Murray – mutually reinforce one another, generating a combination that, when appropriately orchestrated, can lead to fascinating experiential pathways (Murray 2012, 102).

Consequently, I next offer functionally specific analyses of these two features, establishing a solid connection between the forms of documentary previously reviewed and the sphere of media art.

2.2.1. Interactivity

To start once again from Gaudenzi (see Chapter 2.1.2.), this author offers the following definition of the term Interactivity from a technical/structural point of view:

Interactivity gives an agency to the user – the power to physically 'do something', whether that be clicking on a link, sending a video or re-mixing content – and therefore creates a series of relations that form an ecosystem in which all parts are interdependent and dynamically linked (Gaudenzi 2013a, 3).

Later, in her thesis, Gaudenzi expands on the concept by drawing on complex notions from Second Order Cybernetics¹⁴, whereby interactivity is a constitutive component of a digital artifact, which should not be controlled or observed by recipients, but rather should transform them. For Gaudenzi, interaction is the “ensemble of transformations that occur to the artifact’s components as a result of the human-machine inter-action” (Gaudenzi 2013a, 75).

Therefore, Gaudenzi conceives interactivity as an open process that produces continuous transformations and not as a mere action/reaction system. But how is this *openness* to be achieved? Inspired by *Open Work*, Umberto Eco’s seminal book written in 1962, Gaudenzi suggests: “Openness is only possible if the author allows the participator to enter in the creative process. This logic of creation is a participatory logic rather than a

¹⁴ “Cybernetics had from the beginning been interested in the similarities between autonomous, living systems and machines. In this post-war era, the fascination with the new control and computer technologies tended to focus attention on the engineering approach, where it is the system designer who determines what the system will do. However, after the control engineering and computer science disciplines had become fully independent, the remaining cyberneticists felt the need to clearly distinguish themselves from these more mechanistic approaches, by emphasizing autonomy, self-organization, cognition and the role of the observer in modeling a system. In the early 1970s this movement became known as second-order cybernetic” (Heylighen and Joslyn 2001, 3).

representational one” (Gaudenzi 2013a, 77).

For Eco, all works of art are interpretable, therefore 'open'; they are never like a road sign that, unless it is transfigured, "can be seen unambiguously in only one way"¹⁵ (Eco 1997/1962, 34). Nevertheless, as Eco claims, some contemporary works of art are more *intentionally open*: "such awareness is present above all in the artist who, rather than submitting to 'openness' as an inevitable fact, chooses it as a work program and even presents the work in a way that fosters the greatest possible openness"¹⁶ (Eco 1997/1962, 36).

Without delving too deeply into Eco's undoubtedly fascinating perspective (especially at the time when he was writing about it), it seems that this idea of *openness* and of *transformation* which was later taken up by Gaudenzi also offered a focus for numerous *media philosophers* who investigated the complex issue of interactivity in the 1990s, when interactive Media Art was developing and growing in parallel with computer-based technologies. Authors such as Janet Murray, Brenda Laurel and, a little later Lev Manovich, just to name a few well-known examples, redefined the concept of interactivity to include the dimensions of *openness* and *transformation* that were also of crucial importance to Gaudenzi.

For example, when Manovich discusses the concept of *variability* as one of the guiding principles of the new media, which are all interactive (Manovich 2001, 55), he states that "a new media object is not something fixed once for all, but something that can exist in different, potentially infinite versions. [...] Other terms [...] that might serve as appropriate synonyms of *variable* are *mutable* and *liquid*" (Manovich 2001, 36).

A classical and even more so modern, art is 'interactive' in a number of ways. Ellipses in literary narration, missing details of objects in visual art and other representational 'shortcuts' require the user to fill in missing information (Manovich 2001, 56). When we use the concept of 'interactive media' exclusively in relation to computer-based media, there is a danger that we will interpret 'interaction' literally, equating it with physical interaction between the user and a media object [...] at the expense of psychological interaction (Manovich 2001, 57).

Hence, according to this approach, in the field of documentaries and, similarly, in that of media art, interactivity does not only indicate a system that

¹⁵ Original text: "può essere visto inequivocabilmente in un solo senso".

¹⁶ Original text: "Una tale consapevolezza è presente anzitutto nell'artista il quale, anziché subire l'apertura' come dato di fatto inevitabile, la elegge a programma produttivo, ed anzi offre l'opera in modo da promuovere la massima apertura possibile".

involves the use of interactive media and thus an action/reaction relationship; rather, it also implies an *openness* of the work, whereby cognitive, psychological, aesthetic and sociological processes of a certain complexity converge and the focus shifts from the 'object' to the 'process', from the 'finished' to the 'infinite' and from 'immobility' to 'movement', 'transformation' and 'liquidity' (Baumann 2020/1999). The last point is key to my line of argumentation in this thesis.

2.2.2. Immersiveness

The issue of immersion presents a distinct and somewhat more intricate challenge, especially given the confluence of academic discourse and a specific market segment that lauds certain technologies as 'immersive'. I therefore seek to reinterpret the immersiveness concept from a more aesthetic perspective, in keeping with the aims of this thesis.

In Chapter 2.1.3. on immersive journalism, I discussed the three components that de la Peña and Slater viewed as necessary for a Virtual Reality (VR) immersive experience to be truly effective: *Place Illusion*, *Plausibility Illusion* and perception of/identification with the *Virtual Body*. These considerations are undoubtedly compelling, yet they instigate uncertainties and queries pertaining to the notion of immersiveness and the well-known debate outlined in Chapter 2.1.1., which explores the nexus between reality, truth and facts.

Such questions may include: How close can we get to a faithful reproduction of reality? Is VR just another form of representation that is simply more 'immediate'¹⁷ (Bolter and Grusin, 2003)? To what extent can the sensation of 'feeling as though we were there' deceive our senses, enhancing the credibility of a virtual event? To what extent can simulations approximate actual reality, truth and facts? To what extent does the author intervene? Is the sense of immersiveness proportional to the degree of accuracy with which reality is reproduced?

I realize that it is difficult to offer precise answers to these questions – which

¹⁷ Here 'immediate' refers to 'immediacy', a term used by Jay David Bolter and Richard Grusin in their influential work *Remediation: Understanding New Media*. The authors define immediacy as a desire to make the medium disappear in order to create a direct connection between the viewer and the content. According to Bolter and Grusin, the quest for immediacy leads us to continuously update and refine our media technologies. The idea is to create an ever-more immersive experience, where the interface is less noticeable and the user feels more directly connected to the content. Virtual reality is often cited as the epitome of immediacy because it strives to create an environment where the user feels completely immersed in a virtual world, seemingly devoid of any mediation.

are among those plaguing all contemporary designers in the fields of VR and XR – yet they are necessary. For de la Peña, the complexity in this field depends mainly on the *duality of presence* (de la Peña 2017) of the recipient, who lives simultaneously in the real world and in the virtual world. Even de la Peña, despite coming from a perspective associated with aiming to offer the recipient a viscerally authentic 'verité moment' (de la Peña 2017, 210), is obliged to admit that "participants know that they remain in the physical location where their body resides but they also feel at the exact same time as if they have been transported to the environment where the scene is unfolding" (de la Peña 2017, 209). To overcome this unresolved duality, de la Peña suggests shifting our focus to what she refers to as *behavioral realism* (de la Peña 2017), which does not require the faithful reproduction of reality but rather "strong storytelling techniques" (de la Peña 2017, 209). In her opinion, this is the most effective way to "support or devolve immersion through its effect on 'response-as-if-real'" (de la Peña 2017, 209).

But let us take a step back and try to offer a definition of the concept of immersiveness, from the point of view of some well-known academics in the field of media art.

For Oliver Grau "in the present as in the past, in most cases immersion is mentally absorbing and a process, a change, a passage from one mental state to another. It is characterized by diminishing critical distance to what is shown and increasing emotional involvement in what is happening" (Grau 2003, 13).

Therefore, according to Grau, whose approach is very different to that of de la Peña, 'immersion' is a mental and emotional process rather than based on real actions. In his approach, Grau does not associate the concept of immersion with the reproduction of reality; the two remain separate and immersion can occur through any medium. This last concept partially aligns him with Janet Murray when she states that:

Immersion is experiential and not a function of the size or volume of the stimulus [...] We can also become immersed in old media, in compelling stories that hold our attention to the page or the image, in rhythmic experiences that focus us on music or movement, in puzzles or games that take over our thinking, causing us to lose awareness of the world around us (Murray 2012, 101-102).

For Murray, VR offers a potential alternative modality with new affordances that may be built up over time via the collective process of inventing a

medium. However, it is not magical and cannot replace reality (Murray 2020, 25).

But what are these other modalities? On this issue, Char Davies, a pioneer who is recognized at the international level for her incredible work in VR in the 1990s, arrives at an interesting conclusion while discussing her artworks *Osmose* and *Ephémère*:

I want to emphasize, however, that the medium's perceptually refreshing potential is possible only to the extent that the virtual environment is designed to be unlike those of our everyday experience [...]. It is only when such environments are constructed in ways that circumvent or subvert the medium's conventions, that immersive virtual space can be used to convey alternative sensibilities and worldviews, potentially functioning as a perceptually and conceptually invigorating philosophical tool (Davies 2004, 103).

Having said this, from a perspective that seeks to merge documentary and media art, immersiveness concerns not only narrative structure but also aesthetic, cognitive and perceptual factors. It is important to be aware that, given the current state of technology, it is not possible to reproduce reality as it is. Rather, we remain conscious that immersive reality offers a mere 'as if'.

2.3. From expanded cinema to the floating work of art in media art

2.3.1. Expanded cinema

In his seminal work, *Expanded Cinema*, written in 1970, Gene Youngblood mentions *cinéma-vérité* – which we examined in Chapter 2.1.1. – as a starting point for investigating the interplay between art, reality and representation. However, his approach is completely different from that of filmmakers such as Herzog.

Youngblood draws on *cinéma-vérité* to introduce his own concept of *synaesthetic cinema*. He posits that the primary aim of *cinéma vérité* is to document 'unstylized reality' because the filmmaker "is never to intrude by directing the action or in any way alter the events taking place", while in *synaesthetic cinema* on the contrary, "the artist shoots and manipulates his unstylized reality in such a way that the result has style" (Youngblood 1970, 107).

Youngblood argues that the evident crisis in the artist's relationship with the real did not arise due to the type of approach, as suggested in Herzog's

critique, but rather with the advent and large-scale dissemination of television, a medium that, in his view, "Renders Cinema Obsolete as Communicator of Objective Reality" (Youngblood 1970, 78).

Within this evolving media landscape, contemporary filmmakers have greater capability to imitate reality, but the resulting realism, which often draws on a bastardized form of cinéma-vérité or newsreel-style photography, is merely a pre-stylized, mirror image of reality. Such realism is perceived as more realistic because it replicates the process-level perception of TV watching, where unstylized reality is filtered and shaped through the process of that given medium (Youngblood 1970, 80). Youngblood discerns patterns suggesting that virtually all forms of cinema have been profoundly influenced by television and by a false realism, so we are inexorably being drawn towards a synaesthetic dimension. This progression is not abrupt but rather consists of transitional phases: "first toward greater 'realism', then cinéma-vérité, before the final and total abandon of the notion of reality itself" (Youngblood 1970, 79).

Youngblood outlines a progression towards an extra-objective domain that culminates in synaesthetic cinema, a form that amalgamates subjective, objective and nonobjective elements within a space-time continuum. For Youngblood, synaesthesia is "the harmony of different or opposing impulses produced by a work of art. It means the simultaneous perception of harmonic opposites" (Youngblood 1970, 80).

These harmonic opposites are perceived via a syncretic perspective based on "the combination of many different forms into one whole form" (Youngblood 1970, 84) which enables the totality to be understood. Such combining of forms operates on the principle of synergy, whereby the behavior of the overall system is unpredictable, being the outcome of the behavior of its individual parts.

This introduces us into a metaphysical sphere that transcends all traditional forms of representation and narrative. It concerns forces and energies – the fundamental subject of synaesthetic cinema – which cannot be photographed. It is centered on the process and effect of seeing, the phenomenon of experience itself, existing only in the viewer:

Synaesthetic cinema abandons traditional narrative because events in reality do not move in linear fashion [...]. It is concerned less with facts than with metaphysics and there is no fact that is not also metaphysical.

One cannot photograph metaphysical forces. One cannot even 'represent' them (Youngblood 1970, 97).

2.3.2. Reality vs. the representation of reality

Obviously, Youngblood's examples and some of his considerations do not take into account subsequent developments in the media and cinema.

Nevertheless, the concept of expanded cinema, which originated in the 1960s from the broader idea of expanded arts, is recognized by a whole movement of audiovisual media artists and filmmakers who, since those years, have undertaken different lines of innovative experimentation along a path that extends to the present day.

These figures include Valie Export¹⁸, who in a 2003 lecture for The Essential Frame – Austrian Independent Film 1955-2003 event – identified, among the prerequisites for expanded cinema “the destruction and abstraction of the material, as well as the film projection and participation of the audience” (Export 2003).

Export, in relation to her work in the field of expanded cinema with the well-known artist and curator Peter Weibel¹⁹, recounts:

In 1967, Peter Weibel and I developed our 'Expanded Cinema' in Vienna. We examined the relationship between reality and the apparatus that registered it. The media of expression and representation were themselves brought into this discourse (Export 2003).

This vision obviously arises in a context where there is no boundary between social struggle and art, to the point that Export herself states that expanded cinema also means expanded reality.

Transformed media produce a transformed world and a world pressing toward transformation presses toward transformed media. Expanded cinema was not only an expansion of the scale of the optic phenomenon, but also was intended, in this phase, to do away with reality and with the language that construes it (Export 2003).

At this point, it is clear that expanded cinema – which was born, I would again underline, in a period (particularly the 1960s) characterized by political and artistic events with strong social impact – brings film and the audiovisual into

¹⁸ Valie Export is an influential Austrian artist known for her groundbreaking feminist performance art, experimental films and conceptual artworks that challenge societal norms and perceptions of the female body. Active since the 1960s, her provocative works have made her a pivotal figure in contemporary art.

¹⁹ Peter Weibel was a renowned Austrian artist, curator and theorist, particularly known for his work in the field of new media art. He was artistic director of Ars Electronica festival and Chairman and CEO of the ZKM in Karlsruhe, Germany.

a new relationship with reality. It is not solely based on representation or identification; rather, it explores diverse forms, some anchored to traditional concepts of screen and film and others pushing boundaries to the extent of contemplating a 'film without film'. For example, in the artwork *Tapp und TastKino* (*Tap and Touch Cinema* – 1968), Valie Export proposed a version of expanded cinema without celluloid, a mobile outdoor action announced over a loudspeaker by Peter Weibel, which narrowed the boundary between art and life. In order to see (i.e., to feel or touch) the film, the recipients were invited to stretch their hands through the entrance to the “movie theater” (i.e., a box placed over Valie Export's bare breasts) and thus to experience a sort of tactile cinema. Viewers were no longer in a dark, distant, invisible room. Thus, the tactile turns out to be the opposite of the deception of voyeurism.

Everything in her expanded cinema is political and provocative. It is action with a feminist quality. Everything is visible, in plain sight, overt and dynamic. Each experience is different, changing as a function of the place, the context and the recipient. The viewer is directly involved in the action.

Since the 1960s, expanded cinema has been developing and evolving in a very open manner, taking on the multiple forms well summarized by Peter Weibel in the section on *Expanded Cinema, Video and Virtual Environments* in his essay *Future Cinema: The Cinematic Imaginary after Film* (2003), which he edited with Jeffrey Shaw,²⁰ another well-known pioneer in the field of media art.

In this work, Weibel outlined the leading experiments in the field of expanded cinema from the 1960s to the 1990s (including works produced using celluloid as a material, or closed-circuit or multi-screen techniques, or an interactive or immersive approach). He concluded by – at last – exploring new types of narratives that behaved ‘algorithmically’ and ‘rhizomatically’²¹, whereby linearity and chronology were set aside in favor of multiple perspectives, wherever possible to be projected on multiple screens. “These new narrative techniques”, according to Weibel, served to “render the complexity of social systems lucid” (Weibel 2003, 124), thus allowing audiovisual-based media art to overcome the crisis of representation seen in painting in the 1980s.

In a 1997 essay/catalog on the work of Jeffrey Shaw, Weibel was highly explicit in his treatment of the question of representation:

²⁰ Jeffrey Shaw is a visual artist and well known as a leading figure and pioneer in media art, especially in the areas of interactive art, virtual, augmented and mixed reality, immersive visualization environments, navigable cinematic systems and interactive narrative.

²¹ I discuss the concept of *Rhizome* at greater length in Chapter 3.

Celluloid could be replaced by a length of thread, the projector by a mirror [...]. These permutations of the prevailing film forms also altered the character of filmic representation. A film is usually expected to supply a picture of the world, to reproduce the world. Expanded cinema aimed no longer to reproduce reality but to construct its own reality in the filmic play. The expansion of the technological medium brought with it an expansion of the reality able to be grasped by senses (Weibel 1997, 12).

Youngblood too delved into the concept of the image within the domain of expanded cinema in a later work, advancing the following compelling claim: "Today cinema represents reality, tomorrow it will be reality" (Youngblood 1989, 30).

Artists navigating this realm prioritize relation, interaction and variability. They strive to create a dynamic space that "*models* rather than represents" as Bourriaud (2010/1998, 19) would say, using narratives born from the encounter between reality and virtuality.

2.3.3. The floating work of art

In her article, *The Art of Narrative Toward the Floating Work of Art* (2002), professor, curator and art historian, Söke Dinkla, introduces the term *floating work of art* to characterize artistic strategies in media art that are informed by expanded cinema.

According to Dinkla, the floating work of art emerged in the late 1980s from the technological euphoria of the 1970s, during a historical period marked by significant political and social events – most notably the fall of the Berlin Wall – which reshaped the landscape of Europe and led to a new socio-political framework that was no longer based on antagonism and division. The concept of floating work of art could apply to interactive media artworks, which change and evolve based on recipient interaction or algorithmic patterns.

Artists who have experimented with the floating work of art (including pioneers such as Jeffrey Shaw, David Rokeby, Lynn Hershman and others) identify most radically with the digital medium as an aesthetic space that facilitates the logical deconstruction of predetermined systems (Dinkla 2002, 35).

These artists propose new ways to navigate an abstract 'floating' reality via different media, styles, genres or conceptual frameworks, seeking to avoid

dualism, division and conventional modes of visual representation because this could generate the risk that "behavior also follows established rules, instead of opening up new spaces of experiences" (Dinkla 2002, 36). Indeed, the aim of the floating work of art is to construct experiences in which the recipient, within the cybernetic loop created by the artwork, "realizes that it is he who generates reality with his gaze" (Dinkla 2002, 38).

I believe that the notion of floating work of art is highly salient to this thesis, as it aligns powerfully with the specific perspective articulated by Gaudenzi/Uricchio in the field of documentary. For Dinkla, the floating work of art and here is where I identify the commonality with the thinking of Gaudenzi and Uricchio, "is not an entity but a state transformed by changing influences [...]. The floating work of art is no longer the expression of a collective, but it is the state of a 'connective' – a web of influences that are continually reorganized by all participants" (Dinkla 2002, 38-39).

2.4. Final Remarks

In this chapter, I contextualized the domain within which this thesis unfolds, outlining an open space of convergence between open/interactive documentary and media art. I believe that even though these genres have different roots, both challenge traditional paradigms of knowledge acquisition and creation. Rather than a one-way transfer from creator to consumer, they both promote knowledge as a shared, interactive and immersive process in which meanings are co-created, debated and continually refined and redefined. Throughout the chapter, I have attempted to inductively illuminate this space by comparing the practices of media art with those of open/interactive documentaries and describing their potential areas of strength, contact and overlap. It is my deeply held personal conviction that the energy generated by this confluence acts as a powerful catalyst for critical thinking and action. As we continue to navigate our interconnected digital future, these practices will be key to cultivating and growing individual and collective engagement and intelligence, thereby empowering individuals and communities to shape their own realities.

That said, in the context of this thesis, I am mainly interested in how this space of convergence introduces and encourages a new perspective on the role of narrative: more specifically, narrative may be seen as playing a key part in engaging the recipient, a part that can be reinforced by certain narrative practices, as we shall see in the next chapter.

3. Narrative ecosystems (in a real digital world)

In this chapter, I explore the evolving role and the potential of narrative at the convergence of open/interactive documentary and media art. Within this space, 'narrative' takes on a new connotation, as the structure that shapes how events are unveiled and expresses the intention to engage with reality within the boundaries of an artistic work in which technology plays a pivotal role.

Given my purposes here, I do not investigate narrative in relation to conventional classifications surrounding *fabula* and *plot*²², or categories such as behaviors, feelings, monologues or Aristotelian *mimesis* (Barthes and Fabbri 2019, 23). Nor do I rely on concepts such as *nucleus* and *expansion*²³ (Barthes and Fabbri 2019, 33). Rather, in organizing this chapter, I have drawn on Gilles Deleuze and Félix Guattari's metaphor of the rhizome, which is characterized by a multitude of nodes giving birth to branches, germinations and inflorescences.

The cartography that I present, based on a carefully selected set of nodes, is not intended to be exhaustive; rather, my aim is to transform the reader's perspective on this complex and broad area by offering some key insights into the foundations of both my own narrative structures and those of other artists, which I then go on to outline in Chapters 4 and 5.

²² In Umberto Eco's book *Lector in fabula*, the term *fabula* refers to the chronological sequence of events that occur in the narrative. It is the raw material of the story, presented in a linear manner, starting from the beginning and leading to the end. On the other hand, *intreccio* (*plot*) refers to the arrangement and organization of the events in the narrative. It involves how the author chooses to present the story to the reader, including the use of flashbacks, foreshadowing and other narrative techniques. Following the theories articulated in *Open Work* (of which *Lector in Fabula* is a further development), Eco argues that the 'intreccio' is not simply a neutral representation of the 'fabula', but rather an active and creative process undertaken by the author to organize and present the events in the narrative in a way that shapes the reader's understanding and interpretation of the story (Eco 2020).

²³ In short, *nucleus* refers to the essential or central meaning of a text, image or artwork. It is the conceptual or symbolic core that conveys the main meaning or fundamental idea of the work. On the other hand, *extension* refers to the broader and more nuanced part of the work that contains additional meanings or shades of meaning, which may not be immediately evident or clearly defined.

3.1. Narrative *nodes* in a digital world

At the confluence of linear documentary (and by linear, I mean having at least a beginning and an end) and media art, narrative is a central issue. In linear documentaries, narrative is structured around practices, grammars and tools of cinema, thus it is often character-driven or plot-driven; and it is essentially built by the author (screenwriter/director), for whom the storytelling phase of the work is crucial. These aspects of the cinematic approach are often questioned in the field of media art, which tends, consciously or otherwise, to adopt narrative structures born "in the age of chaos", as Martin Rieser and Andrea Zapp have defined it (Rieser and Zapp 2002, xxv), when the conventional roles of author, subject and audience have been evolving in response to technological advances. Media art counters or overlays the character- or plot-driven narrative with a cartographic vision à la Deleuze and Guattari, whereby reality, representation and subjectivity are interconnected (Deleuze and Guattari 2017/1980).

In contrast with linearity, media art offers dynamic narratives with the aim of achieving a sort of *reversibility* between virtuality and reality²⁴ via more flexible modes of audience engagement. In these narrative models, events are distributed across media, potentially within interactive or generative systems based on mathematical rules, the internet and algorithms. This process displays the properties that Janet Murray attributes to digital environments in her seminal text, *Hamlet on the Holodeck*: namely, it is procedural, participatory, spatial and encyclopedic²⁵. A set of characteristics that, to close the circle, "separately and collectively make it [the computer] a powerful vehicle for [a] literary creation" (Murray 1997, 71), offering new possibilities and challenges for storytelling and narrative structure in digital contexts.

²⁴ Regarding reversibility, Peter Weibel writes, "A cause in the real world will have an effect in the virtual world and, reversibly, will have an effect in another parallel virtual world or in the real world." (2002, 53)

²⁵ In short Murray proposes the following definitions of the properties. Procedural: digital environments operate based on procedures or algorithms. This allows for rule-based interactions, which can be as simple as clicking a hyperlink or as complex as navigating an entire virtual world. Participatory: digital spaces allow for recipient interaction. Unlike traditional media, which generally only offer a one-way flow of information, digital environments can be designed to allow recipients to make choices and impact outcomes and to work together. Spatial: digital environments often contain navigable space that we perceive as a cyberspace, "an environment with its' one geography" (Murray 1997, 80). This can be literal, as in a video game where you move through a virtual world, or metaphorical, as in a website that you navigate through clicking links. Encyclopedic: the digital format allows for vast amounts of information to be stored and accessed. Whether we are talking about an online encyclopedia, a digital library, or a complex video game, digital media has the capacity to offer a wealth of information and experience that goes beyond the limitations of traditional media (Murray 1997).

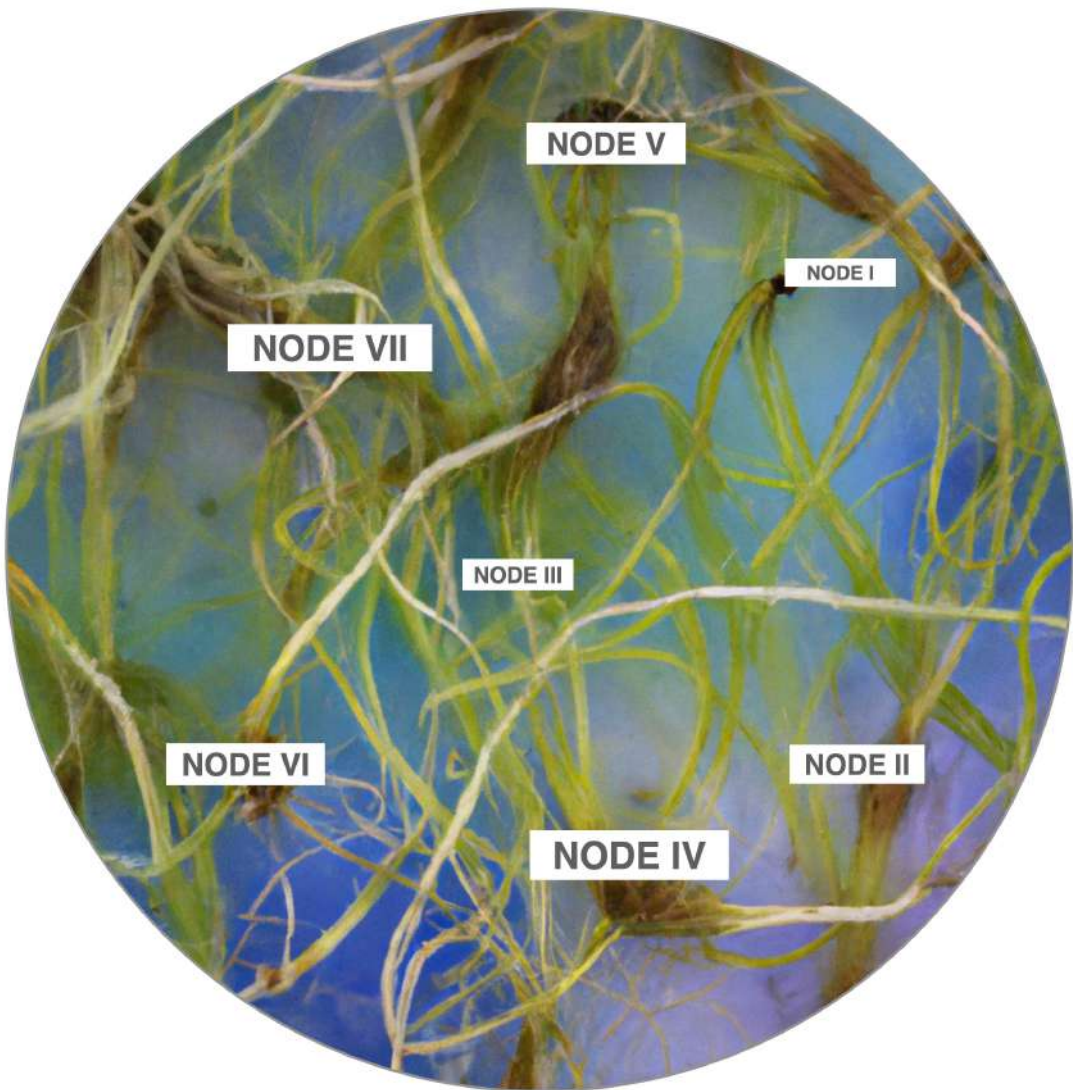
Based on synesthesia, synergy, syncretism, interactivity and immersiveness, the new narratives align with open/interactive documentary, positioning themselves in the space of convergence of media art and documentary that we discussed in Chapter 2.

To investigate the ever shifting and evolving nature of these narrative practices, I next review literary, philosophical, artistic and scientific theories and movements which have emerged since the post-war era and which I view as salient to establishing a new narrative framework of reference.

In order to transcend traditional taxonomies and chronologies – which, in my view, fail to capture the complexity of the new narratives – I organize the chapter around the concept of 'nodes'. This approach is inspired by Gilles Deleuze and Félix Guattari's metaphor of the Rhizome. Each node, which may be connected to any other node, points to a diverse series of components that we may view as forming a new ecology of 'narratives of engagement' with the power to harness technological advances, stimulate critical thinking and foster action.

I am aware that this method may come across as neither exhaustive nor cohesive and of course there could potentially be many other nodes. Nevertheless, the ultimate objective of this exploration remains that of understanding how both my artistic work and that of other artists is deeply influenced by such constellations of practices (nodes), forming highly complex narrative ecosystems, as I will discuss in the following chapters.

Indeed, if we zoom out from these nodes, we can see the rhizome as a cartography, in which each germinative node and connection can contribute to defining the potential shape of a specific artistic 'narrative ecosystem'.



3.1.1. Node I. The *constraint*

In this first node, I explore the literary movement OuLiPo²⁶, which originated in 1960 from the work of a subcommittee at the Collège de Pataphysique, founded in France in 1948²⁷. *Pataphysique* – which continues to be a great source of inspiration and has led to the establishment of various institutes and movements – is, according to the provocative writer Alfred Jarry²⁸ in his *Exploits and Opinions of Dr. Faustroll, Pataphysician*, “the science of imaginary solutions”²⁹(Jarry 1911, 15).

The entropic vision of the world proposed by the pataphysicists as a way of looking at reality stems from the madness of Jarry’s Père Ubu³⁰ who certainly inspired Raymond Queneau (also a pataphysicist) in his work *Exercices in Style*, originally published in 1947. Queneau, a writer by profession and mathematician for pleasure, joined the mathematician François Le Lionnais to found the OuLiPo movement, leading literature towards the principles of mathematics via the foundational concept of *constraint*. A constraint is a rule of composition that can be “sometimes a generative device that could, in theory, produce a text; sometimes a challenge that incites immediate textual production on the part of an author” (Berkman 2014, 2).

More specifically, constraints are mathematical rules specified or created by authors to construct stories in a combinatorial manner. One constraint, for example, is the well-known rule S+n, which is to replace every noun (S) in a text with the noun that falls n positions further on in a given dictionary.

By way of example, let us assume that in the rule S+n, “n” equals 2 and we’re using a simplified, imaginary dictionary that lists nouns alphabetically.

A sample text prior to application of the S+2 constraint might be: “The cat slept on the mat”. Let us then focus on the nouns: cat and mat. In our imaginary dictionary, if “cat” is followed by “cattle” and then “cave”, we must

²⁶ ‘Ouvroir de littérature potentielle’ in French, translates as ‘Workshop in Potential Literature’ in English.

²⁷ It was joined by writers such as Raymond Queneau, Boris Vian, E. Ionesco (and later Umberto Eco himself), painters including Max Ernst, Joan Miró, Man Ray, Enrico Baj, filmmakers such as René Clair and mathematicians including François Le Lionnais.

²⁸ Alfred Jarry (Laval 1873 - Paris 1907) was a French writer who led an eccentric and unconventional life. He is one of the founding fathers of twentieth-century theater. Antonin Artaud, Robert Aro and Roger Vitrac named one of the most eccentric theaters of the early 1900s in his honor (Théâtre *Alfred Jarry* founded in Paris in 1926).

²⁹ Original text: “la science des solutions imaginaires”.

³⁰ Père Ubu is a well-constructed fictional character around whom many of Alfred Jarry’s works revolve, beginning with *Ubu Roi* in 1896. These works are viewed as precursors to pataphysics and to the theater of the absurd, due to their grotesque nature and radical departure from traditional language and theatrical conventions.

replace "cat" with "cave" because "cave" is two positions further. Similarly, if "mat" is followed by "mate" and then "matter," we must replace "mat" with "matter." Thus, after applying the S+2 rule the text would read: "The cave slept on the matter."

Other examples of OuLiPo's constraint-based works include Perec's *La Disparition* and Calvino's *The Castle of Crossed Destinies*, both from 1969. Although the group claimed influences like the mathematicians of Bourbaki³¹, it also drew on Surrealism and earlier literary figures such as James Joyce, as well as experimenters including Borges and Cortázar.

I propose this node because I believe that the concept of constraint (rule) in the field of narrative and literature is, on the one hand, closely related to the properties of digital environments, especially procedural and encyclopedic ones (Murray 1997). On the other hand, it represents an experimental and highly contemporary way to actively involve recipients by requiring them to navigate non-linear structures or engage in some form of 'play'. This approach departs from traditional ideas of interpretation and representation and aligns more closely with the interactive experiences at the heart of this thesis.

On this topic, Janet Murray argues that "when the writer expands the story to include multiple possibilities, the reader assumes a more active role", later stating – in relation to *If on a winter's night a traveler* (1979) by Italo Calvino – that "in a world that is perceived as a vast interconnected web, how is the author to know which thread to pull on first?" (Murray 1997, 38).

3.1.2. Node II. Associative thinking and the hypertext

Another noteworthy concept is 'hypertext', a well-known term coined by Ted Nelson. The notion of hypertext was partly inspired by the article *As We May Think* by scientist, engineer and technologist Vannevar Bush, published in *The Atlantic Monthly*. Bush posited that the human mind "operates by associations. [...] in accordance with some intricate web of trails carried by the cells of the brain" (Bush 1945, 121). Thus, to enhance the efficiency of knowledge storage and retrieval, Bush envisioned a machine called the

³¹ "Nicolas Bourbaki was the pseudonym of a group of post-World War I mathematicians at the École Normale Supérieure in Paris. Disillusioned with the possibility of an international mathematics after the war and feeling cheated due to the loss of an entire generation of mathematicians, this semi-secret group decided that the way to save the discipline was to reinvent it from the ground up. They published their first textbook, *Éléments de mathématique*, in order to reinvigorate mathematics by providing it with a new, more formalized language. Their first volume on set theory drew from the preceding tradition of Bertrand Russell and David Hilbert, but was also much more strictly defined" (Berkman 2014, 2).

Memex that enabled associative connections as opposed to traditional indexing (Bush 1945, 121). The *Memex* represented an encyclopedic extension of memory, which could be manipulated via levers and buttons to conduct associative searches.

As a philosopher and sociologist, Nelson was more inspired by the concept of 'mental association' than by the machine itself. This led him to develop the notion of hypertext, a non-linear approach to writing (and reading), which he expounded upon in his 1965 paper *A File Structure for the Complex, the Changing and the Indeterminate* and later in *A New Home of the Mind* in 1982, where he states:

The link facility gives us much more than the attachment of mere odds and ends. It permits fully nonsequential writing. Writings have been sequential because pages have been sequential. What is the alternative? Why, hypertext—nonsequential writing (Nelson 1982, 171).

Over many years, Nelson further developed this concept in the context of his XANADU® project.

With the advent of the World Wide Web³², theories around hypertexts expanded significantly. The media philosopher Antonio Caronia documents how academics in the early 1990s further explored the concept of hypertext. These included George P. Landow with his work, *Hypertext: The Convergence of Contemporary Critical Theory and Technology*. Landow, who building on the work of Barthes and Foucault, sought to establish a "genealogical line between text and hypertext"³³ (Caronia 2004, 240) that took technological advances into account. According to Landow, as quoted by Caronia, "the plot could be a phenomenon created by the reader-author from the material offered by the *lexias* [by *lexias*, a term drawn from the work of Barthes, Landow means to denote textual blocks that, when connected, constitute a hypertext] rather than a phenomenon that belongs exclusively to the text"³⁴ (Caronia 2004, 241). At the same time, it would still be a mechanism capable of offering, again according to Caronia's revisiting of Landow, an experience very similar to that offered by a unitary plot (Caronia 2004, 241).

³²Tim Berners-Lee proposed the World Wide Web as a 'universal linked information system' while working at CERN in 1989. The World Wide Web is an example of Hypermedia (Hypertext + Media).

³³Original text: "linea genealogica tra testo e ipertesto".

³⁴Original text: "la trama può essere un fenomeno creato dal lettore-autore a partire dal materiale offerto dalle *lessie* [con *lessie*, termine ricavato da Barthes, Landow intende blocchi testuali che, collegati, costituiscono un ipertesto] piuttosto che un fenomeno che appartiene esclusivamente al testo".

As already noted, the concept of hypertext has mainly evolved in parallel with technological developments, particularly with the advent of the internet and the world wide web. The hypertext can take multiple forms as a function of the specific encyclopedic and procedural properties of digital environments (Murray 1997). It is a key concept in the field of interactive narrative – a field that, as I have consistently emphasized thus far, targets the active involvement of recipients and is therefore very much in line with the purpose of 'narratives of engagements'.

3.1.3. Node III. Interactive and transmedia storytelling

The idea of returning to a certain uniqueness of the plot via hypertextual forms, albeit divided into *lexias (blocks)* that can be matched, disassembled and reassembled to create true 'tree' structures, has influenced the domain of 'interactive storytelling' techniques, which in turn rely upon the *procedural* character of digital environments (Murray 1997).

Such techniques are used today in gaming, but also in interactive cinema, web documentaries³⁵ and media art. Their goal is to engage the audience in a novel way by deploying interactivity, but always within a storytelling framework.

According to Pizzo, Lombardo and Damiano, "there is no single agreed-upon vocabulary"³⁶ (Pizzo et al. 2021, 16) for discussing the topic. Yet, we must acknowledge that the "forms of interactive storytelling with the greatest power of engagement and involvement are based on dramatic features"³⁷ (Pizzo et al. 2021, 19). This holds true not only for commercial offerings such as interactive films in the vein of *Black Mirror: Bandersnatch*³⁸ or video games like *The Walking Dead*³⁹, but also for experimental, installation-based, or

³⁵ Interactive cinema and web documentaries are emergent forms of digital storytelling that leverage the capabilities of new technologies to create more engaging and participatory experiences for audiences. They specifically use the Internet as their primary platform for distribution and, in some cases, also for production.

³⁶ Original text: "non esiste un vocabolario unico e concordato".

³⁷ Original text: "le forme di storytelling interattivo con maggiori capacità di ingaggio e coinvolgimento si basano su aspetti di drammaticità".

³⁸ *Black Mirror: Bandersnatch* written by Charlie Brooker is a 2018 interactive film from the Netflix series *Black Mirror*, in which the spectator makes decisions for the main character, a young programmer named Stefan, thus impacting the storyline. The film explores themes of free will, parallel realities and the impact of technology on our lives, in keeping with the overarching themes of the *Black Mirror* series.

³⁹ *The Walking Dead* game is an episodic interactive, graphic adventure video game series developed and published by Telltale Games. The game is based on Robert Kirkman's *The Walking Dead* comic book series. The series features a character named Lee Everett, who becomes the protector of a young girl named Clementine in a world overrun by zombies, or "walkers". Players' choices and actions

performative projects like Blast Theory's *Desert Rain*⁴⁰.

Wikipedia defines interactive storytelling as "a form of digital entertainment in which the storyline is not predetermined. The author creates the setting, characters and situation which the narrative must address, but the user (also reader or player) experiences a unique story based on their interactions with the story world" (Wikipedia 2023).

According to this definition, the notion of 'plot' is replaced with that of 'story world'. The participants/recipients navigate this realm, orchestrating their own unique adventures by choosing from an array of *blocks* presented by the author.

Pizzo et al. define these *blocks* as *units* (a term that is also used in semiotic linguistics), that is to say, as the "elements that result from a logical partitioning of the story"⁴¹ (Pizzo et al. 2021, 39). This assumes that "those who create interactive stories have an idea of how to segment the narrative content they intend to make interactive"⁴² (Pizzo et al. 2021, 40).

It is undoubtedly a complex task to structure a narrative in this way, a task that demands great care on the part of the author and a sharp focus on all the elements that shape both the story and the characters (clearly a huge challenge for authors who normally produce linear cinema). But if the narrative (or more precisely, the story world) is to offer tools that induce recipients to make choices, it must also be highly consistent and, by some means, prompt the construction of one coherent story.

Henry Jenkins concept of 'transmedia' shares this same assumption, as he himself states:

Transmedia storytelling represents a process where integral elements of a fiction get dispersed systematically across multiple delivery channels for the purpose of creating a unified and coordinated entertainment

influence the development of the different characters and the progression of the story across the series. The game is acclaimed for its narrative, level of character development and the moral dilemmas it poses to players.

⁴⁰ *Desert Rain* is an immersive interactive performance piece by Blast Theory. First performed in 1999, *Desert Rain* uses a combination of virtual reality, live performance and audience participation. It is inspired by the Gulf War and explores themes of reality and representation in the context of war. During the performance, six participants at a time are led on a virtual mission to find and photograph a target in a virtual rendition of the Iraqi desert. This mission takes place within a specially designed installation, where the participants interact with a virtual environment projected onto a screen of water.

⁴¹ Original text: "elementi che risultano da una partizione della storia in modo logico".

⁴² Original text: "coloro che creano storie interattive abbiano un'idea su come segmentare il contenuto narrativo che intendono rendere interattivo".

experience. Ideally, each medium makes its own unique contribution to the unfolding of the story (Jenkins 2007).

In this node, I have presented some practices in which it is attempted to integrate the active intent and involvement typical of interactivity with the idea of unified storytelling. I sometimes have the impression that these two patterns (openness of interactivity and unity of storyline) are mutually incompatible. However, for the moment, my focus is on pointing up the complexity associated with structuring narrative in practices aimed at offering the recipient a more active role.

3.1.4. Node IV. The two axes

Returning to Caronia's original concept of hypertext, he argues that it has undermined the founding and unitary functions of narrative because "the navigator can jump not only from one part to another [...] but also from that to other hypertexts in other sites"⁴³ (Caronia 2004, 242). And, quoting Domenico Fiormonte's text, *Scrittura e Filologia*⁴⁴, he states that it is "only when the fabula holds up that the interpretative possibilities are triggered and that the reader wishes to enter into the text, learn more and perhaps decide that the ending needs to be changed [...]. The opportunity to establish *real* links, paths, digressions and alternatives is precisely what 'kills' interpretation"⁴⁵ (Caronia 2004, 247).

This death of interpretation should not alarm us because currently "a new pact is underway among the subjects in the communication circuit"⁴⁶ (Caronia 2004, 247). This idea dismantles the previous hegemony of narrative based primarily on the fabula and interpretation, taking into account the spatial quality of digital environments and generating a new dimension given by a "synesthetic plurality" (Balzola 2004, 53).

The 'new pact' requires a cartographic vision whereby "successful narratives occur when the spatial and temporal axes are *both* functioning" (Dovey 2002, 143). According to Dovey⁴⁷, it is as though narrative has always been said to

⁴³ Original text: "il navigatore può saltare non solo da una parte all'altra [...] ma anche da quello ad altri ipertesti, presenti in altri siti".

⁴⁴ Transl. Eng: *Writings and Philology*.

⁴⁵ Original text: "solo quando la *fabula* tiene che scattano le possibilità interpretative e che il lettore vuole *entrare dentro il testo*, saperne di più e magari decidere che il finale va cambiato [...] La possibilità di stabilire *veri* link, percorsi, digressioni e alternative è proprio ciò che 'uccide' l'interpretazione".

⁴⁶ Original text: "E' in atto un nuovo patto fra soggetti del circuito comunicativo".

⁴⁷ It should be noted that Jon Dovey is a Professor of Screen Media at the same university where Judith Aston and Mandy Rose teach (see Chapter 1) – UWE Bristol – and that he was one of the curators of the inaugural i-Docs Symposium of 2011.

expand along two axes: a horizontal axis based on temporal progression and a vertical one that calibrates events "on a different set of scales" (Dovey 2002, 138).

According to Dovey, this concept had already been put forth within the tradition of Russian Formalism, influencing intellectuals such as Roland Barthes in his *Structural Analysis on Narrative*. Dovey notes that Barthes distinguishes between two orders of narrative events: "Functions' that correspond to 'a functionality of doing' and 'indices' which correspond to a 'functionality of being'. A narrative function operates for Barthes primarily in time [...] within the field of consequential linearity [...] indices on the other hand (or axes) have a metaphorical relation" (Dovey 2002, 138-139).

Building upon the principles of Saussure, Barthes had already explored the dual-axis concept within the field of linguistics. In his work *Elements of Semiology*, he drew a clear distinction between the syntagm and the system, which he identified as the two fundamental axes of language:

These two planes correspond to two forms of mental activity. The first plane is that of the syntagms; the syntagm is a combination of signs [...] is linear and irreversible (it is the 'spoken chain'): two elements cannot be pronounced at the same time [...]. The second plane is that of the associations [...] the two planes are linked in such a way that the syntagm cannot 'progress' except by calling successively on new units taken from the associative plane (Barthes 1986/1964, 58).

The idea of applying two axes to narrative – whereby it can develop both horizontally and vertically – endows it with 'space', with both verticality and navigability. Narratives are thereby elevated to a level of engagement that is more associative, synesthetic, syncretic, synergic and metaphorical. This approach features another key node at which 'narratives of engagement' also align with the spatial property of digital environments.

3.1.5. Node V. Rhizomatic multiplicities

In my discussion of this node, I expand further on the idea of axes just discussed by introducing the notion of rhizome developed by the French philosophers Gilles Deleuze and Félix Guattari.

In nature, the rhizome is a modified horizontal stem from which roots, buds, leaves, stems and branches all spread out. According to Deleuze and Guattari, it can take various forms, ranging from extensive branching in all directions to concretions in bulbs and tubers (Deleuze and Guattari

2017/1980, 41).

Deleuze and Guattari draw on the metaphor of the rhizome to distinguish between narratives based on node-structured concatenations and multiplicities. In their view, multiplicities are 'reality itself' and "do not presuppose any One, nor do they enter into any totality, nor do they refer to a subject"⁴⁸ (Deleuze and Guattari 2017/1980, 30).

The characteristics of the rhizome that correspond to this type of narrative are:

- ◆ Connection and heterogeneity: any "point of a rhizome can be connected to any other and must be"⁴⁹ (Deleuze and Guattari 2017/1980, 41). In this way, "very different acts are agglomerated, linguistic, but also perceptive, mimetic, gestural, cognitive [...] the wasp and the orchid create a rhizome as they are heterogeneous"⁵⁰ (Deleuze and Guattari 2017/1980, 42 and 45).
- ◆ Multiplicities: there is no longer any relation to the One, no opposition, no branching from a single unit; there are no points or positions as in a tree or root – only lines (Deleuze and Guattari 2017/1980, 43).
- ◆ The asignifying rupture: in contrast with the "oversignifying breaks" that can disrupt linear narratives, a rhizome "may be broken, shattered at any point and then it starts again along one or another of its lines and along other lines"⁵¹ (Deleuze and Guattari 2017/1980, 44).
- ◆ Cartography and decalcomania: A rhizome "is not subject to the jurisdiction of any structural or generative model"⁵² (Deleuze and Guattari 2017/1980, 48). The orchid does not reproduce the wasp's structural model; rather, it creates a map together with the orchid.

Deleuze and Guattari's concept of the rhizome has influenced various domains, from art to science. Within a certain kind of media art, their perspective is interpreted as a practice "engaged in the service of a new approach to narration" where "the subjective response to the world is not

⁴⁸ Text in references (in Italian): "E non presuppongono alcune unità, non entrano in alcuna totalità più di quanto non rinvino a un soggetto".

⁴⁹ Text in references (in Italian): "Qualsiasi punto di un rizoma può essere connesso a qualsiasi altro e deve esserlo".

⁵⁰ Text in references (in Italian): "Agglomera atti molto diversi, linguistici, ma anche percettivi, mimici, gestuali cognitivi [...] la vespa e l'orchidea fanno Rizoma in quanto sono eterogenei".

⁵¹ Text in references (in Italian): "Contro i tagli troppo significanti" un rizoma "può essere rotto, spezzato in un punto qualsiasi, riprende seguendo questa o quella delle sue linee e seguendo altre linee".

⁵² Text in references (in Italian): "Un rizoma non è soggetto alla giurisdizione di nessun modello strutturale o generativo".

forced into a construct" (Weibel 2002, 43) but rather leads to a "new perception of the world" (Weibel 2002, 44). As I stated at the outset, this chapter is itself structured around the notion of the rhizome, which I view as a key 'node' in the context of this thesis.

3.1.6. Node VI. The *articulation of the real*

Here, I explore the complex concept of *articulation* as developed by Donna Haraway⁵³ in her work around cybernetics and systemic thinking.

Cybernetics is "the science that studies the abstract principles of organization in complex systems" (Heylighen and Joslyn 2001, 2). It is concerned "not so much with what systems consist of, but how they function" (Heylighen and Joslyn 2001, 2). In 1948, Norbert Wiener, an American mathematician, revived and expanded the idea of cybernetics in his key work, *Cybernetics, or the study of control and communication in the animal and the machine*.

Together with complex system theory⁵⁴, cybernetics has significantly influenced various applied and knowledge-based fields, carving out a space where multiple disciplines including physics, biology, computer science and engineering coexist and share a systems-based approach. Since the 1950s, systemic thinking has been applied broadly, influencing even art, especially trends in media art. Janet Murray points out that systemic thinking "has been applied to everything from family structure to frog ponds" (Murray 1997, 92). I argue that systemic thinking also influences a specific perception of narrative, particularly in relation to the ideas of Donna Haraway.

⁵³ Donna Haraway is a distinguished professor emerita at the History of Consciousness and Feminist Studies Departments of UC Santa Cruz. She stands out as a leading academic in the field of science and technology studies and has made substantial contributions to post-feminist theory. Alongside others such as Bruno Latour, Haraway has developed systemic thinking that interlinks biology and engineering within a broad paradigm that also embraces the tools of art and narrativity.

⁵⁴ Within the framework of *complex system theory*, there are other theories of great salience to this thesis, such as: *automata theory*, which "dates back to the work Alan M. Turing and John von Neumann did in the 1930s and the 1950s and was developed as one of the most important bases for modern computing" (Witzgall 2011, 29); *general systems theory*, which, "formulated in 1930s by the theoretical biologist Ludwig von Bertalanffy, was directed above all towards the observation of life. This theory describes living beings as complex open systems that establish their dynamics in an exchange with the environment, inside which a dynamic equilibrium predominates" (Witzgall 2011, 31); and *autopoiesis*, a theory introduced by Chilean biologists Humberto Maturana and Francisco Varela in 1972 to describe the self-sustaining, self-organizing nature of living systems. Autopoiesis, which combines the Greek words 'auto' for self and 'poiesis' for creation or production, implies that a system is capable of reproducing and maintaining itself. In biological terms, an autopoietic system is a living organism that produces the components that constitute it, such that these components continuously regenerate and realize the network of processes that have produced them. This idea has been extended into the fields of systems theory, cognitive science, sociology and philosophy, as a way to understand how complex systems self-regulate and maintain their own identities.

In her introduction to Donna Haraway's *Cyborg Manifesto*, Rosi Braidotti states that the aim of cybernetics is to study how humans and machines interact via feedback mechanisms (Haraway 2018/1991,11). Feedback mechanisms, as presented by Braidotti, are processes in which the system's outputs are used as inputs for future operations. This allows the system to correct or adjust itself automatically, leading to ongoing self-regulation and adaptation. The feedback mechanism of systemic thinking underpins Haraway's concept of *articulation*, which is central to this node.

Angela Balzano, in introducing Haraway's *The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others*, highlights Haraway's claim that true social and political change requires moving beyond representation theory to view our constructed social nature in terms of articulation (Haraway 2019/1992, 25). In a beautifully crafted passage from the same book, Haraway directs us to a question posed by the writer, journalist and adventurer Joe Kane in one of his reviews: 'Who speaks for the jaguar?' (i.e., who 'represents' it?). This question, seemingly in favor of protecting 'jaguars', according to Haraway, falls within the 'semiotic politics of representation' since it assumes the existence of an improbable 'ventriloquist'.

Posing such a question, for Haraway, is emblematic of a mindset where narrative is based on representation. These types of narratives favor objects that cannot answer back (like the jaguar or the fetus). The more the narrative is unanchored and distanced from the discursive and non-discursive connections surrounding it, the more it can be reconstructed and relocated in the 'authoritative domain of the representative' (Haraway 2019/1992, 89). Thus, everything that surrounds these objects (like the forest or the mother) can be discursively [falsely] reconstructed (Haraway 2019/1992, 89). "Neither the woman nor the fetus, neither the jaguar nor the Kayapo Indian are actors in the drama of representation. [...] The only remaining actor is the spokesperson, the one who 'represents'"⁵⁵ (Haraway 2019/1992, 89), the 'ventriloquist'. Haraway is far from convinced by this 'liberal logic of representation' (Haraway 2019/1992). Instead, she advocates for actors to become collective entities operating within a "structured and structuring [articulated] field of action"⁵⁶ (Haraway 2019/1992, 92). Only in this way can

⁵⁵ Text in references (in Italian): "Né la donna né il feto, né il giaguaro né l'indiano Kayapo sono attrici/ori nel dramma della rappresentazione [...] Il solo attore rimasto è il portavoce, colui che rappresenta".

⁵⁶ Text in references (in Italian): "In un campo d'azione strutturato e strutturante".

boundaries assume “provisional and never predetermined forms”⁵⁷ (Haraway 2019/1992, 92), based on feedback received, where everything is valid and can succeed or fail, as in an organism. Nothing in such a system, “excludes the articulations of scientists or other North Americans who care about the fate of jaguars”⁵⁸ (Haraway 2019/1992, 96), yet “the patterns, flows and intensities of power”⁵⁹ are radically different (Haraway 2019/1992, 92).

There should not be and cannot be, any 'ventriloquist'; no one should represent others, nothing should be 'represented'. What needs to emerge is a collectivity for which “dedication and involvement, not their invalidation, are the conditions to join the practices of knowledge production and those of world-building”⁶⁰ (Haraway 2019/1992, 97). This articulation, this narration of reality must be based on the principle of sympoiesis, 'a simple word that means 'making-with" (Haraway 2019/2016, 89), a concept (and a practice) that Haraway develops based on symbiogenesis⁶¹. According to Haraway, nothing is truly self-organized. Accordingly, sympoiesis is a more appropriate word than autopoiesis (see note 54) for initiating discourse around articulation, because 'earthlings are never alone', but rather live within complex, dynamic, reactive, situated, historical systems. “Sympoiesis wraps up autopoiesis, unfolds it and extends it in a generative way”⁶² (Haraway 2019/2016, 89). Articulation can draw on stories and metaphors if these help to create a new multispecies world based on 'making-with'. Through the metaphor of the 'children of compost', for example, Haraway emphasizes that life and innovation stem from processes of decomposition and recomposition, highlighting the importance of caring for the damaged Earth and cultivating sustainable relationships with the world. Via this metaphor, Donna encourages us to reflect on how we can create new sustainable forms of existence, transformation and coexistence in the world, while remaining

⁵⁷ Text in references (in Italian): “Assumono forme provvisorie e mai prestabilite”.

⁵⁸ Text in references (in Italian): “Nulla esclude le articolazioni degli scienziati o di altri nordamericani che hanno a cuore le sorti dei giaguari”.

⁵⁹ Text in references (in Italian): “I modelli, i flussi e le intensità del potere”.

⁶⁰ Text in references (in Italian): “Dedizione e coinvolgimento, non la loro invalidazione, sono le condizioni per unire le pratiche di produzione del sapere e quelle di costruzione del mondo”.

⁶¹ Symbiogenesis is a term coined by the evolutionary biologist Lynn Margulis (1938-2011) to name the theory that new species can emerge from the symbiotic merger and persistent fusion of previously separate organisms. This process differs from the classic view of Darwinian evolutionary theory, which emphasizes competition and survival of the fittest. Margulis' theory of symbiogenesis has led to a new way of understanding evolution as a cooperative and interconnected process, rather than as a mere competition to survive.

⁶² Text in references (in Italian): “La simpoiesi avvolge l'autopoiesi, la srotola e la estende in maniera generativa”.

mindful of the intertwining of all living and non-living entities. The great germinating power of Haraway's vision, in my opinion, lies in the fact that this articulated system – in which everything is valid if it is based on sympoiesis and compost (and not on representation) and in which the most diverse elements come into relation with one another (including the real, virtual, artificial, human and non-human, organic and inorganic) – fulfills the collaborative nature of existence, whereby narratives are functional to the active practice of world-making.

3.1.7. Node VII. Participation

The final node that I propose here concerns art forms that have explored the concept of participation as part of a quest to relate art to life. Such art in turn is linked to the *participatory* nature of digital environments (Murray 1997), which can host and develop narratives with the active involvement of the public. Participation in these environments can be organized and structured, thanks to the fact that "new media are interactive" (Manovich 2001).

In her seminal book *Artificial Hells*, Claire Bishop identifies three transformative junctures at which artists' interest in participation progressed to a different level: the historical European avant-gardes around 1917, the neo-avant-garde leading up to 1968 and the fall of communism in 1989 (Bishop 2020/2012, 15).

From the well-known avant-garde movement Dada to the Situationists, happenings and Fluxus, as well as to the earlier-mentioned expanded arts (Chapter 2), participatory art has persisted up to the present day, branching out and taking on unimaginable forms such as extreme activism or true co-creation in collaboration with the public; it has often been amplified, molded or transformed by digital media⁶³.

In this regard, Lev Manovich states:

Finally, in the 1960s, continuing where Futurism and Dada left off, new forms of art such as happenings, performance and installation turned art explicitly participational. This, according to some new media theorists, prepared the ground for interactive computer installations which appeared in the 1980s (Manovich 2001, 56-57).

⁶³ This is the case in the projects I discuss in the next chapters or in certain collaborative initiatives (based on the notion of participation) in the field of open documentary. One example is the Emmy Award-winning web documentary *Highrise: Out My Window* by the filmmaker Katerina Cizek which explores the situation in high-rise residential buildings in cities including Toronto, Havana, Istanbul and Phnom Penh, where the director and her team worked on location with high-rise residents, professional filmmakers and photojournalists —over 100 people in all.

Listing all these forms of art is not my concern in this thesis, but what I find interesting is the fact that the actions of the artists discussed by Manovich and Bishop were organized according to a specific narrative intent: that of fostering active engagement on the part of both individuals and groups.

This aim informed action 'projects', which sometimes evolved into theatricalizations, as in the case of the Living Theatre⁶⁴ or theatre groups such as La Fura dels Baus⁶⁵. In this "realm of the performative", as the Katja Kwastek affirmed in her earlier cited work, *Aesthetics of Interaction in Digital Art*, "the constitution of reality is based on the fact that such performances create a presence without necessarily seeking to represent something" (Kwastek 2013, 85).

In the 1990s, I participated in collective actions by the Living Theatre, led by Judith Malina, whose absolute and meticulous rigor in designing and organizing collective events I experienced firsthand (to the extent that she once slapped me because I was distracted). These actions were notably effective from a political activism perspective. Additionally, I worked on many projects with Marcel·lí Antúnez Roca⁶⁶, one of the founders of Fura dels Baus. I started following this group after participating in their collective action entitled *M.T.M.*, which stands for *Magno Theatrum Mundi* (although for the artists, this acronym is open to manipulation and various interpretations). In the introduction to *M.T.M.* it was affirmed that "MTM didn't just talk about manipulation, it put it into practice". This performance, structured around aggressive and extremely powerful situations, is something I still remember vividly due to the force with which it invited physical, perceptual and collective engagement.

In *Artificial Hells*, Bishop also discusses the breaking down of collective work into 'situations' arguing that Guy Debord and the well-known avant-garde movement Situationist International organized their collective output around 'situations' and that they understood that "participation is important as a project"⁶⁷ (Bishop 2020/2012, 23). Similarly, she recalls that "Futurism (and later, Dada cabaret) created situations in which the audience were mobilised

⁶⁴ The Living Theatre is a highly influential experimental theatre company founded in 1947 by Judith Malina and Julian Beck in New York City. The group became a pivotal force in the avant-garde theatre movement, known for its commitment to social and political activism through performance.

⁶⁵ Fura dels Baus is a renowned and provocative theater company from Spain. Founded in 1979 in Barcelona, the group is known for its innovative performances that blend theater, dance, music, technology and other art forms.

⁶⁶ I return to Marcel·lí later in this thesis.

⁶⁷ Text in references (in Italian): "la partecipazione è importante come progetto".

to participate in an orgy of hostility towards the artists"⁶⁸ but that this demonstrated nothing more than the public's active willingness to accept the artists' objectives (Bishop 2020/2012, 84).

3.2. Final remarks

At the intersection of documentary and media art, we find narratives of engagement aimed at involving recipients both individually and collectively and fostering action and critical thinking. In this chapter, I have highlighted, using a map based on nodal convergences, how these narratives of engagement can draw on vastly diverse practices and theories that have evolved over the years within a range of artistic, literary, philosophical and scientific fields and how they reflect the properties of digital environments (Murray 1997).

These practices and theories can be centered around storytelling (or story worlds), thus leading back to a unified narrative, whether in the form of a tree or simply based on mathematical rules that allow for the recombination of the story. Alternatively, they can rely on philosophical and semiotic concepts that break away from unity, from the One and from the notion of narrative as linear temporality. In this case, they offer a more open, cartographic vision rooted in multiplicity, where engagement is channeled through synesthesia, synergy, syncretism and metaphor. Other practices revolve around systemic thinking and are explicitly aimed at promoting action and activism. These tend to move away from representation to introduce actual systems in which a wide array of elements (real, virtual, artificial, human and non-human, organic and inorganic) come into relations with one other and continuously transform. Finally, still other practices are founded on the design and construction of situations geared towards involvement through participation.

Intentionally, I have not charted a specific path, line, or map among these nodes, as I believe that today, individual artists enjoy the opportunity to construct their own constellations by connecting these nodes in keeping with their own peculiar outlooks.

Sometimes, these outlooks prompt direct action and political activism, while at other times, engagement manifests through the plots of *fiction*⁶⁹ where a

⁶⁸ Text in references (in Italian): "Il Futurismo (e più tardi, il cabaret Dada) creava situazioni in cui il pubblico veniva sollecitato a partecipare in un'orgia di ostilità verso gli artisti".

⁶⁹ The term 'fiction' is used here in the sense attributed to it by Jacques Rancière, who views it as pertaining to the realm of the sign, of language and of the concatenation of actions and events. It does not mean to produce illusions, but rather structures of intelligibility. (2022, 54) Rancière argues that

given story may be One or become a thousand stories without endings. Within this complexity, narratives of engagement become *narrative ecosystems*, where the artist structures the components but must often forego control over what is generated in the relationship between them.

I would argue that narratives of engagement are akin to Gaudenzi's thinking surrounding interactive documentary and specifically that they should "not be seen as a static finite product, but rather as an ecosystem [...] where one change in the system has repercussions on all its components" (Gaudenzi 2013a, 16). Accordingly, they "should be looked at as relational entities, rather than static ones. The term 'relational' implies that these are dynamic systems formed by heterogeneous entities (humans, machines, protocols, technology, society, culture) where all the components are interdependent" (Gaudenzi 2013a, 15).

In Part II of this thesis, entitled *For a better world*, I take a deep dive into some of the narrative ecosystems underpinning my work as a media artist, as well as into other significant narrative ecosystems that have resonated with me in recent years.

politics, art and knowledge all produce 'fictions' that are material concatenations of signs and images, the visible and the sayable, what is done and what can be done. (59)

For a better world (II)

4. My narrative ecosystem

In light of the considerations put forth in the last chapter, over the next pages I set out to frame my own artistic work, in which engagement through narrative plays a central role.

I inductively expose my narrative approach, identifying various elements that together form an articulated ecosystem of which I myself am an active component. In ecosystems such as this, the components and the connections between them are diverse and unpredictable, as they are structured around technologies, techniques and strategies designed to continuously enhance individual and collective involvement.

More specifically, in this chapter I present the narrative approach that I brought to bear in three artistic projects that are particularly salient to the focus of this thesis:

Apnea, an immersive and interactive installation about migrants and the sea, premiered in 2016.

Missing Out, *Tiny Uppercase* and *Are You There?*, part of the long-term project, *Presence*, which has been ongoing since 2019 and is based on performance, XR/VR and 360° cinema.

Photosynthetic Me and *Photosynthetic You*, two projects combining media art, documentary and bioart, which premiered in 2020 and 2022 respectively.

4.1. *Apnea*. Action-research about migrants and the sea.

4.1.1. Forward

I feel that it is appropriate to begin this chapter with the *Apnea* project, not necessarily because it is representative of my current work which has certainly evolved, but rather because I see it as the starting point of an ongoing transformation. At the outset of this project, I was not fully mindful of my actions, but rather driven by an urgent need to narrate a socio-political issue to which I was particularly sensitive by drawing on my own personal experience and specifically on my relationship with death.

4.1.2. Origins and description

Apnea is an interactive and immersive media artwork on the topic of migrants crossing the central Mediterranean route, one of the main gateways of access to Europe: it is a cartography of feelings and fears mapped using interactive immersive technologies and an exhibition of objects salvaged from the sea. *Apnea*'s audio-visual contents were made on the island of Lampedusa (Sicily – Italy). On 03 October 2013, a shipwreck happened on the island. This event had a substantial media and political impact as, for the first time, the bodies of victims drowned near the shore were displayed on the beach, drawing the gaze of media from all around the world. This shocking sight raised public awareness in Europe and spurred governmental rescue initiatives such as *Mare Nostrum* and the intervention of numerous NGOs.

The shipwreck of 2013 deeply affected me too, especially given that, at the time, I was involved in various artistic projects with foreigners in distress. Consequently, in 2015, I began working on *Waiting for*, a work of artistic inquiry focused on people who cross the sea to find a new life in Italy. This study drew on a concept developed by some small Italian museums that collected objects found on the beaches belonging to those who had lost their lives at sea. Further inspiration came from the *What's in my bag?* project by the International Rescue Committee (2015), where refugees were asked to reveal the personal items they had brought with them from the homes they had left behind.

This early research informed some pilot experiments with immersive and interactive technologies and enabled me to begin formulating the concept for *Apnea*. Also, it was within this context that the *Apnea* core working team was formed. This team consisted of students from the Politecnico and the

University of Torino, along with the videomaker Stefano Sburlati, with whom I shared design and production decisions. As *Apnea* progressed, the team expanded to include additional researchers and new students, ultimately becoming a group of over 20 people.

4.1.3. Luck and pain

Apnea was a lucky project from the beginning, winning a large grant offered by the Compagnia di San Paolo, one of Italy's leading banking foundations and receiving further financial support from the Castel dei Mondi International Festival in Andria, Puglia (IT). It was produced and supported by a prestigious artistic foundation, where it was first presented on 01-20 November 2016. It also benefited from the donation of in-kind support and equipment from the Officine Sintetiche platform. It has been presented internationally and won prizes in many places, from the Musrara Mix Festival in Jerusalem to the York Art Gallery in York (UK), to Palazzo Mora, a venue for the 2017 Venice Biennale Art and many others. Lastly, the *Apnea* 360° video may be viewed on the RAI, Radiotelevisione Italiana, app.

However, *Apnea* also represents my own confrontation with suffering. Before tackling the artistic work, I convinced myself that it would be ethically and intellectually wrong to address such an important topic without having direct knowledge of it. Therefore, I tried to establish relationships with various associations and NGOs prior to initiating the project. After two months of research, I finally managed to involve Doctors Without Borders – Spain, the Mosaico Association for Refugees in Turin and the 03 October Committee in Lampedusa, which was specifically set up for the victims of the 2013 shipwreck. This committee, under the guidance of RAI journalist Valerio Cataldi, who has been covering the landing of migrants in Lampedusa since 1996, was also involved in collecting objects recovered from the bodies of shipwreck victims. Valerio suggested that I join him in Lampedusa to do some work directly in the field. I decided to accept this invitation.

Our journey (we were a group of four people - two professionals and two students) took place following a long period of preparation and the careful selection of tools, materials and technologies that would enable the project to build a direct connection with:

- ◆ objects found by the police on the bodies of the shipwreck victims;

- ◆ survivors of the shipwreck and their stories of migration to Europe;
- ◆ space / border / sea;
- ◆ members of the population who had participated in the rescue operations.

During this phase of the project, the relational aspect was intense. It involved engaging with the silent suffering of some of the shipwreck survivors who had briefly returned to Lampedusa from Sweden, where they had resettled. I also came into contact with objects belonging to the shipwreck victims, which were held by the police, awaiting the unlikely arrival of the victims' relatives to claim them.

I engaged with the sea, the local associations and the seemingly indifferent residents of Lampedusa. Among these were ordinary people such as fishermen and diving center staff, who sometimes had to retrieve bodies from the sea following shipwrecks.



Figure 1: In Lampedusa. Photo by Michele Cattani

But throughout all this, something was off. I often heard it said that my voice mattered because I spoke for the 'voiceless'. Yet, I did not see myself as an 'authoritative' representative of the 'voiceless'. In keeping with Haraway, I only wished to articulate a narrative, not to represent a pain that I could not fully comprehend. But I was uncertain how to do this. Therefore, I did something very simple, seemingly superficial, but very heartfelt for me at the time. I introduced myself into the narrative, drawing everything closer to my own painful experience with death and loss. I strove to create, through the presence of relational objects that could belong to anyone, an archetypal world where the sea amplified the absence of a body – an absence that anyone could identify with.

In *Apnea*, “we are faced with the juxtaposition or collision of different levels of temporality (like a telescope folding in on itself) thanks to which the contemporary reactivates, leading to a new 'readability' and 'knowability', the meaning of a past so archaic that it blends into the mists of myth”⁷⁰ (Pinotti 2020, 22), states Andrea Pinotti, a professor and essayist, about my work. And on the same topic, in describing her immersive journey through *Apnea*, Evangeline Tsao confides in her article for Discover Society, “At that moment, it seemed that I was an object that had been abandoned, hopeless and so distant from any civilization” (Tsao 2019).

4.1.4. *Apnea* narrative design

The *Apnea* installation consists of three structured environments that engage visitors in a sensory journey, leading them, step by step, through an interactive and immersive experience. Recipients begin their journey by visiting an exhibition composed of photographs, videos and texts. Here they encounter objects found on the bodies of the victims of the 3 October 2013 shipwreck and compasses found on boats near Lampedusa (donated by Doctors Without Borders – Spain).

⁷⁰ Original text: “siamo di fronte ad un tamponamento o collisione di livelli differenti di temporalità (come un telescopio che si richiude su se stesso) grazie alla quale il contemporaneo riattiva, conducendolo ad una nuova 'leggibilità' e 'conoscibilità', il significato di un passato così arcaico da confondersi nelle nebbie del mito”.

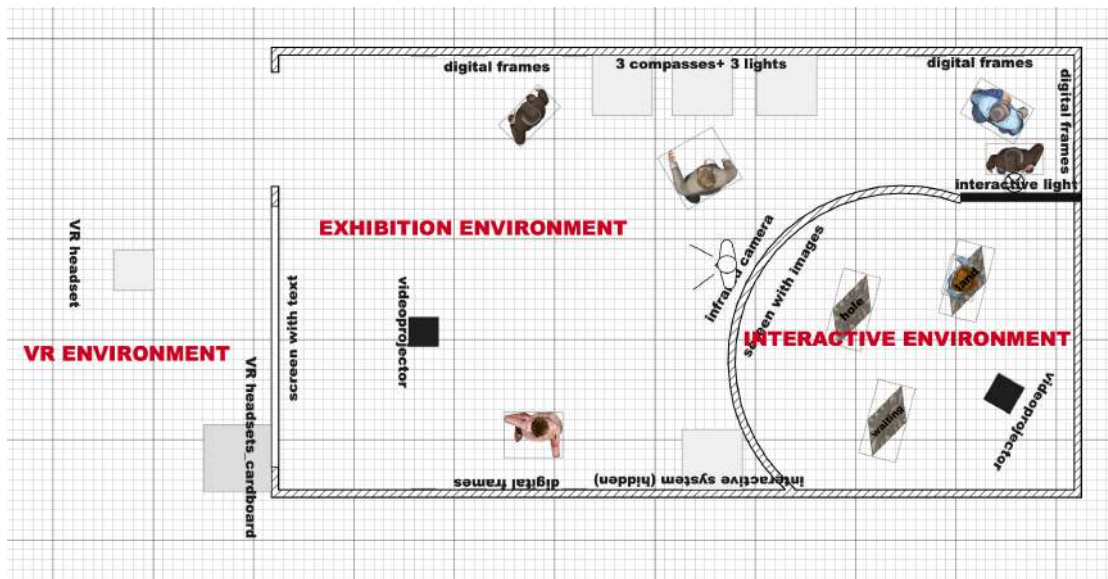


Figure 2: Apnea installation map. Image by Vanessa Vozzo

The objects are isolated and decontextualized, suspended in a still life format against a white backdrop. At the same time, they are immersed in a procedural soundscape that is composed in real time.



Figure 3: Objects found on the bodies of the victims. Photo by Michele Cattani

The water, the sea and, once more, objects are the key elements at the following two stages in the journey:

1. A first area hosts an interactive projection. The recipient's movements modify the audiovisual environment in real time. The space is a dark room containing a semi-circular screen (270°) showing a video projection of the seabed of Lampedusa strewn with jellyfish. The room is monitored by an infrared camera that detects the recipient's presence. The recipient interacts with the audiovisual world via a data processing software. The jellyfish follow the recipient's movements around the room, generating a disorienting sensation of immersive slow movement. At the entrance to the room, the voices of migrants recorded live or via radio by NGOs are heard. The situation changes when the user steps on one of the three texts written on the floor. Each text represents a different state of connection with the deep sea: waiting, the impossibility of making it to the beach, death.



Figure 4: Photo by Andrea Macchia

2. The next environment is a 360° video that allows visitors to dive into the seas of Lampedusa, where the same objects displayed at the entrance to the installation are reproduced and shown resting on the seabed. This video also features a sculpture created for the project by the French-Italian sculptress Rosella Fida and lowered into the sea. In getting this artwork underwater, we were assisted by Simone D'Ippolito, a professional diver and the owner of a diving center who provided us with significant help. Simone is an extraordinary person who was one of the first to discover the wreck on 03 October 2013. He has been rescuing people at sea since 1989. He is also the only person featured in the 360° movie made for *Apnea*. Recipients can watch the video using a Samsung Gear VR 360° headset. The video is also accessible online via a QR code, which may be scanned either from home or directly at the installation (using the consumer Cardboards provided).



Figure 5: Photo by Michele Cattani

Given that this section of *Apnea* is based on VR, the problematic nature of the relationship between reality and virtuality came to light at the very moment we began working on it. The initial plan was for the VR experience to transport the recipient to the deep-sea waters off Lampedusa to recreate a situation of suffocation due to drowning. This proposal was immediately set aside. It was clearly impossible to reproduce reality. In relation to the “constitution of presence” Oliver Grau, in his book *Virtual Art. From Illusion to Immersion* says that: “The technological goal, as stated by nearly all researchers of presence, is to give the viewer the strongest impression possible of being at the location where the images are. This requires the most exact adaptation of illusionary information to the physiological disposition of the human senses” (Grau 2003, 14). At the same time: “It is not possible for any art to reproduce reality in its entirety and we must remain aware that there is no objective appropriation of reality – Plato’s metaphor of the cave shows that. It is only interpretations that are decisive” (Grau 2003, 17). After initial disappointing attempts to ‘simulate’ reality, the 360° video recordings, filmed on location in the sea around Lampedusa, were made and edited with a view to creating an archetypal world. A space in which elements of the real (the Lampedusan sea, the real presence of the diver who saved the lives of many people during the 03 October shipwreck, a sculpture being lowered onto the seabed) are mixed with dreamlike effects in an attempt to distill a single essential moment of profound solitude from fragments of the collective unconscious.

In addition to the narrative structure organized around the three environments, each with its own horizontal and vertical development (and its own narrative that connects with the other narratives, positioning itself at a macro-narrative level), recipients were given a booklet (Vozzo 2023b) at the entrance to the installation. This booklet presents a story about Lampedusa with which the recipients can engage in parallel with experiencing the installation.

There is also a cross-media level; the same story is narrated in the form of a linear documentary lasting approximately 20 minutes and featuring the people who helped us to make the artwork. The documentary is freely accessible on the Internet (Ballo and Vozzo 2018).

Apnea's narrative raises a set of key points, as I outlined in a poster authored with Professor Tatiana Mazali and presented in Genova at the AISU⁷¹

⁷¹ AISU Associazione Internazionale Studi Urbani is an association that studies and disseminates knowledge about urban history.

conference The Multiethnic City:

- ◆ Different regimes of vision are implicated in the transition from two-dimensional to three-dimensional video. Mixed reality, between the physical space of the exhibited objects and the virtual space of the images up to the 360° perspective is used for a specific purpose: to avoid simulating reality. The images and sounds do not show the bodies of migrants (dead bodies or living bodies), nor reproduce reality as such, but rather draw on an archetype to evoke the perception of 'what is missing';
- ◆ The work is performative in nature, in the transition from static to immersive. The project-work in *Apnea* is continuously performed by the recipients, who interact with the contents within a structured narrative. The content is never static, the work is a process, which implies a certain degree of indeterminacy in the encounter between content, medium and recipient.

4.1.5. Final remarks

The development and realization of *Apnea* were grounded, on one hand, in collaborative and participatory methodologies. In the article *Immersiveness and interactivity in documentary storytelling. The Apnea case study*, authored with media sociologist and professor Tatiana Mazali, we state that *Apnea's* narrative unfolded within a fully-fledged action-research project.

Action-research not only analyzes a problem but also constructs solutions with the people who are directly involved in the issue, reflecting the belief that research should not be 'neutral,' but rather an agent of change and social emancipation (Mazali and Vozzo 2019, 33).

The uncontrollable flux of variables resulting from the numerous relationships established through collaboration, cooperation and co-creation with institutions and associations around the world, with the journalism industry and entire communities (including Lampedusa and the refugee community), sparked a fresh artistic approach in me. This approach, which has blossomed in the years since *Apnea*, relies on the concept of connected, often serial and sometimes expanded ecosystems, as we shall see in relation to my subsequent projects.

Apnea also crucially contributed to shaping my vision with respect to the concept of immersiveness. Personally and as a curator of VR and XR exhibitions, I rarely find myself engaging in documentary or immersive

journalism projects whose aim is to reproduce reality. This depends to a small degree on technological limitations but is also significantly influenced by my unsettling awareness that I am being tricked, my consciousness of the 'duality of presence'. On the contrary, I lean towards artworks that use narrative as organic material, immersing me in aesthetic and perceptual sensations that are distinct from mimesis, regardless of the extent to which the art conforms to reality or realistic behavior. This was especially evident with *Apnea*.

4.2. Presence. Transformative XR Live Experiences

4.2.1. Forward

It seems particularly pertinent in this context to introduce *Presence. XR Live Experiences*, a long-term project that draws on participatory mechanisms to explore the social transformations situated around us and in which we are actively involved. This 'networking' project that employs (and develops) embodied/immersive technologies, involves a multitude of entities (institutions, teachers, researchers, students, artists, etc.) within constantly shifting, interconnected ecosystems. The outcome is the creation of events and artworks associated with diverse artistic disciplines, in all of which narrative plays a key role.

4.2.2. Origins and description

Launched in 2019, *Presence. XR Live Experiences* was incubated within the creative sphere of the Officine Sintetiche collective. The project was born of research conducted from 2018 onwards by a team of students and researchers from the Interface Culture Master Program at the University of Art and Design, Linz, Austria. This line of inquiry culminated in *VR in Wonderland*, a research setting premiered at Ars Electronica Festival (Austria) in 2019. In *VR in Wonderland*, proprioception and self-positioning in space were explored using immersive real-time streaming 360° instruments and devices. Wearing a Virtual Reality headset, the recipient assumes the perspective of a small robotic device equipped with a consumer 360° camera, positioned in real-time in a space next to her/him. Using a joystick, the recipient navigates a miniature model of a labyrinthine city. This experiment blurs the distinction between the real and virtual environments, causing a spatiotemporal distortion that amplifies when recipients see themselves from

a ground-level perspective that makes them look like giants. Participants in this experiment reported experiencing a bodily sense of alienation and disorientation, as if they were in a transitional 'elsewhere' between reality and virtuality.

VR in Wonderland draws together the research of artists who have used embodied/immersive technologies to conduct experiments at the intersection of art, cognitive sciences and technologies, as proposed by researcher Maša Jazbec on her Interface Culture Master course; examples include Hiroo Iwata's team and BeAnotherLab and other earlier experiments in the field of VR and 360° cinema (Jürgen Ropp, Vanessa Vozzo).

The research behind *VR in Wonderland* was informed by the work of multiple VR and cognitive science labs, such as the *Brain, Body and Self Laboratory* of the esteemed Ehrsson Group and their *Barbie-doll illusion* experiment and Mel Slater's Event Lab, as well as by academic articles including *Egocentric Smaller-person Experience through a Change in Visual Perspective* (Nishida et al. 2019) or *Place illusion and plausibility can lead to realistic behavior in immersive virtual environments* (Slater 2009). The concept for the *Presence* project emerged from these initial stimulating experiments in cognitive science. However, the project has moved on from these early roots, taking on a shape of its own in the course of ongoing explorations around identity, self-representation and the multiplication of the self in social networks/media and virtuality. These explorations have originated in part from interactions with professors and researchers involved in media art or media sociology and the study of authors such as Sherry Turkle, but they have primarily evolved thanks to ad hoc focus group discussions with students, researchers, professors and artists. These discussions elicit themes that generate events or artworks – XR live experiences, where Real Reality and Virtual Reality merge via embodied or transmedia narrative techniques.

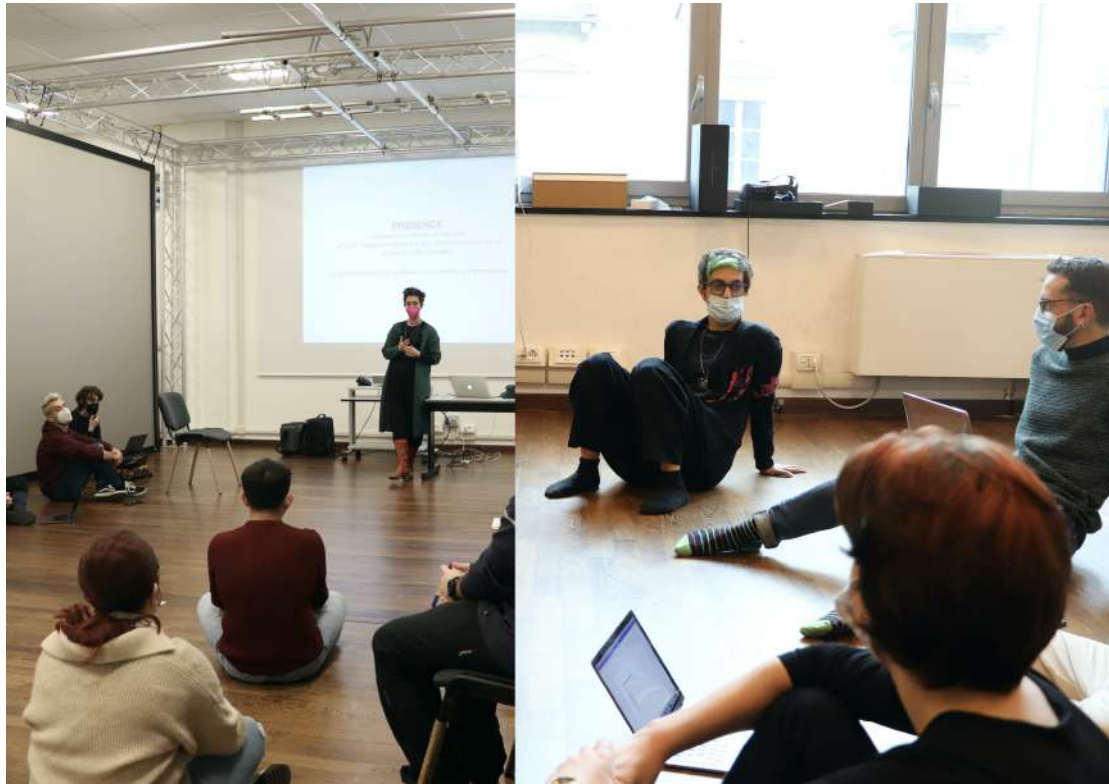


Figure 6: Focus groups at the StudiumLab Torino. Photo by Maurizio Consolandi

In the context of these events and artworks, we link in workshop days, seminars and occasionally contests, which offer a platform for discussing the applied technologies. Technological progress is crucial in *Presence*. Technology develops alongside the explorations and shapes the project's growth. The events/artworks not only aspire to eliminate the gap between reality and virtuality via an illusionary mechanism based on the distortion of space-time, but they also strive to place recipients' bodies at the brink between embodiment and alienation by purposely altering their sense of proprioception. Narrative structure is crucial within such experiences. Without it, the explorations and focus groups discussions would be reduced to pure speculation and the XR experiences would be technical trials.

The narrative arises from the focus groups discussions and is based on the media used in the projects. I next briefly discuss three artistic projects within the *Presence* program in which narrative structure plays a decisive role in actively engaging the recipient.

4.2.3. *Missing Out*

Missing Out is both an installation and a performance that utilizes 360° VR systems, real-time 360° streaming and 2D video. It premiered at the Circolo del Design in Torino in January 2020.

The main topic of *Missing Out*, which emerged from focus group discussions and studies of social anxiety surrounding social media, is FoMO, or the Fear of Missing Out.

FoMO is a state of social anxiety that arises from the need to always be informed about what others are doing. It is characterized by excessive and obsessive concern that others may be having rewarding, interesting, or exciting experiences elsewhere, without us.

This pervasive feeling of apprehension can be amplified by continuous exposure to messages and posts that others publish on social media.

Some academics, such as Andrew Przybylski et al. in the article *Motivational, emotional and behavioral correlates of fear of missing out* (Przybylski 2013), have highlighted several basic factors in FoMO and the consequences of increasing restlessness in the absence of control over social media notifications.

In *Missing Out*, recipients' sensory perceptions, sense of time and spatial awareness are altered in real time, leading them to experience disorientation between reality, virtuality and the immersive streaming environment.

AREA 1: A Journey (Monitor – 2D)

The recipient is drawn into the installation via a short film in which a middle-aged woman attempts to plan a trip to India with a person positioned in darkness whose age and gender are unclear. The unseen person is inferred to be busy texting on a smartphone.

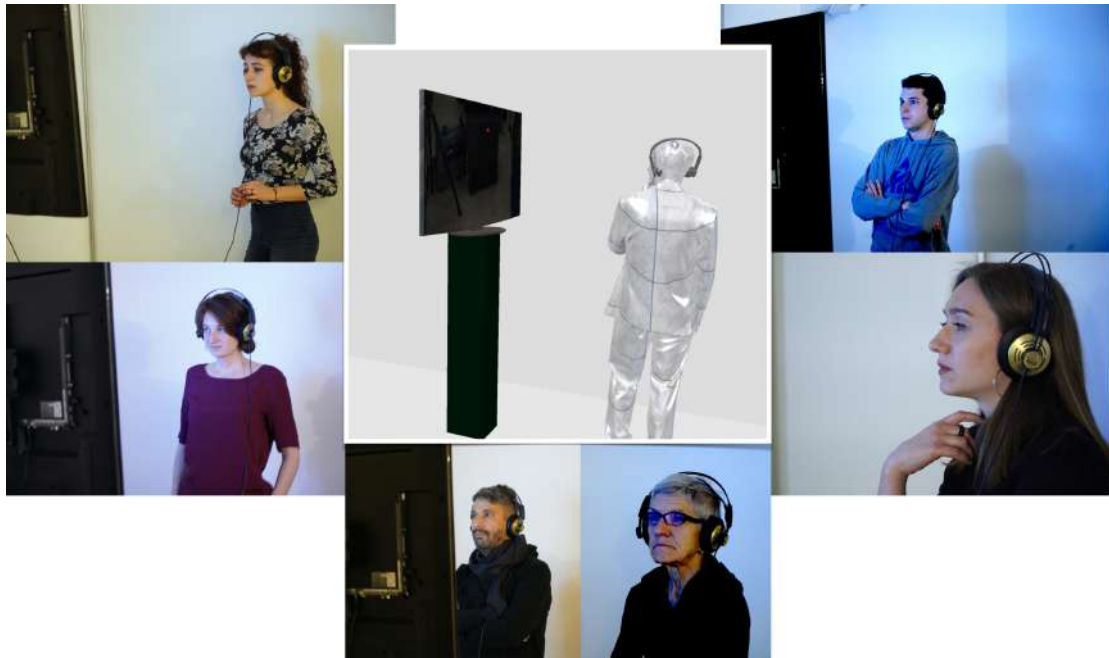


Figure 7: Area 1. The recipient in front of a monitor. Image by Vanessa Vozzo, Carlo Gioia

AREA 2: My FoMO (video 360°)

After viewing the short film, recipients are given a real smartphone and invited to put on a VR 360° headset. Suddenly, they find themselves immersed in the 360° scene from the previous 2D film, but in the role of the mysterious figure in the dark. The woman from the short film, feeling ignored by the shadowy figure (now the recipient), becomes tangibly frustrated. The real smartphone in the hands of the recipient/character keeps receiving notifications, it never stops vibrating and ringing.



Figure 8: Area 2. 360° movie. Image by Vanessa Vozzo, Carlo Gioia



Figure 9: Area 2. 360° movie. Screenshot from the movie

AREA 3: Alienation (live streaming 360°)

At the conclusion of the 360° video, the recipients are individually guided into a room — the same room that is depicted in the two videos. Here, they meet the same woman from Areas 1 and 2 in person, dressed identically to in the videos. The woman, clearly upset, takes the smartphone from the recipient's hands and places it on a table where there is also a VR headset that she now instructs the recipient to put on. This action suddenly shifts the recipient's viewpoint to that of a 360° camera situated in the room. The recipient is now observing her/himself in real-time via a live-streaming mechanism and rendered powerless against the incessant buzzing of the smartphone. To heighten the sense of alienation, the woman caresses the recipient and then blacks out the camera, plunging the participant into the enforced darkness of her/his own mind.



Figure 10: Area 3. XR live experience. Image by Vanessa Vozzo, Carlo Gioia

4.2.4. *Tiny Uppercase. Our Hidden Sense*

Tiny Uppercase. Our Hidden Sense is an XR + live dance experience produced by a renowned Italian dance company, Balletto Teatro di Torino. It premiered in May 2022 at Lavanderia a Vapore in Collegno (Torino). The concept was born from a focus group discussion led by Viola Scaglione (Artistic Director of Balletto Teatro di Torino) and Vanessa Vozzo with researchers, students and Balletto Teatro di Torino artists, on the themes and research of the Presence project. Several questions emerged during this discussion: What are the limits of our body? Can we create the 'virtual' conditions for perceiving another's body and truly feeling different? To what extent do events (real or virtual) and space (real or virtual) influence the embodiment process? The inspiration for *Tiny Uppercase. Our Hidden Sense* springs from the desire to broaden our interpretative gaze upon the body via a new kind of self-perception and a more mindful positioning of the self within time and space. The artwork focuses on the sense of proprioception with a view to making visible one of the most important components of human experience: the construction of the self and, consequently the relationship with others that, through the body, we build with the world around us. The transmedia narrative structure consists of four different phases. Unlike *Missing Out*, everything here takes place in a single space, the stage.

PHASE 1: Black and white reality (360° live streaming)

Four participants are guided onto the stage and each is given a stone to hold for the following 17 minutes of the show. All are then invited to put on a VR headset. At this point, reality fades to black and white and the recipients' viewpoint shifts to that of a 360° camera placed on the stage. The participants can now observe themselves from the 360° camera's viewpoint in live streamed footage of the dancers interacting with them through touch. From this point in time, all four participants are offered the same visual experience.



Figure 11: Phase 1. Live streaming view from the camera perspective. Screenshot from the camera



Figure 12: Phase 1. Action of a dancer during the live streaming of phase 1. Screenshot from video

PHASE 2: The flight (VR)

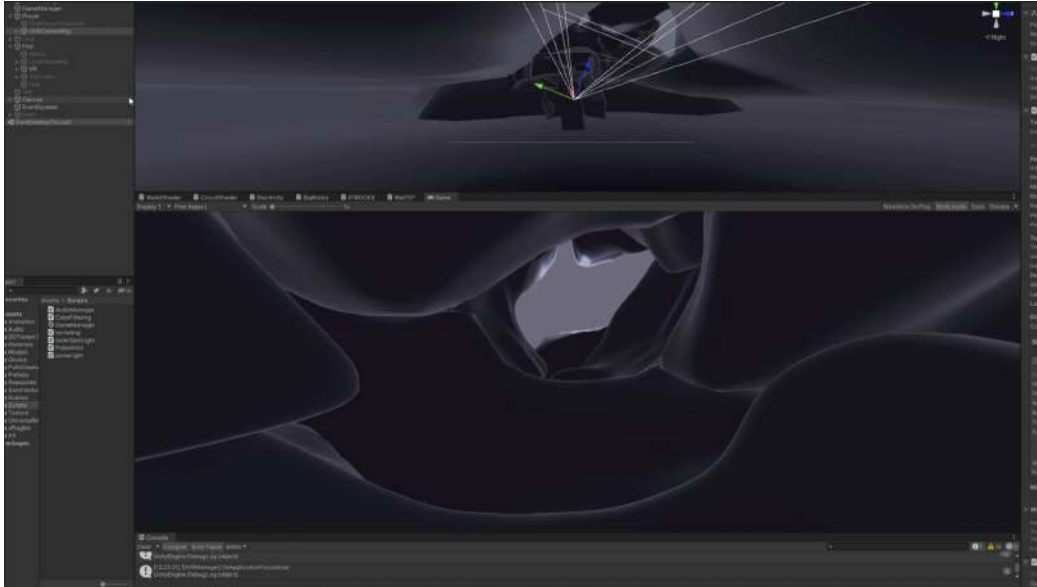


Figure 13: Phase 2. World in VR. Screenshot from Unity engine

From livestreamed reality, the scene shifts into darkness and then into a 3D graphics environment that resembles a cave. The recipients experience a sensation of rising slowly and taking flight.

Below them, they see a river nestled in a lunar landscape. The flight continues until a space of pure white is reached.

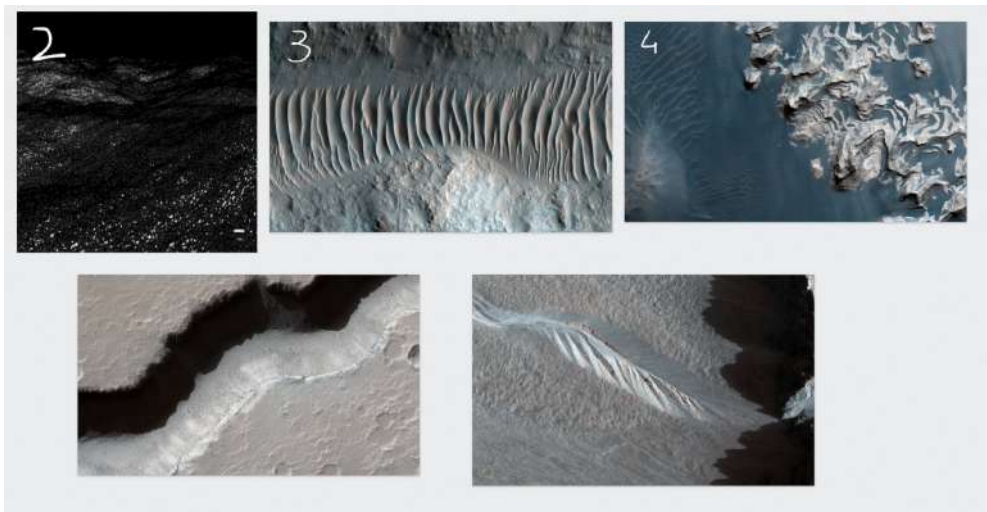


Figure 14: Phase 2. Screenshot from the references

PHASE 3: The desert (360° video)

After leaving the white space, the recipients find themselves alone on a riverbank, set within a desolate landscape. Slowly, dancers materialize and initiate a dance. At the end of their performance, the dancers in the video seek the recipient's gaze, drawing her/him on to the final phase.



Figure 15: Phase 3. 360° world. Screenshot from the 360° movie

PHASE 4: Comeback (real reality)

In the final phase, the VR headset is removed from the recipient. The real dancers are in the same positions and wearing the same costumes as at the end of the 360° video. They begin to perform a physical, powerful dance.



Figure 16: Phase 2. Real Reality - Last dance. Screenshot from video

4.2.5. Are You There?

Are you there? is an installation/performance combining XR, mobile art, 360° live streaming and live performance. Presented for the first time at the StudiumLab of the University of Torino in February 2022, the project is currently in progress.

Again, the concept originated from a focus group with university students from the Politecnico of Torino. From the discussion, an unsettling observation emerged: the vast quantity of photographs that we view daily on social media rarely stimulates our capacity to envision the context in which a photo was taken.

This consciousness-raising exercise inspired *Are you there?* which was presented in these words:

As you scroll, pause at this image. Outdoors, daytime, a carousel on a lawn. The sea, the port and the horizon beyond a balustrade. The warm, high sun evokes a familiar atmosphere. To whom does this photo belong? Where was it taken? What invisible objects are there on that lawn? How many unseen people are gazing at the sea? Where are you now?

ARE YOU THERE?

Are you there? is a transmedia writing experiment that combines XR, mobile art, 360° live streaming and live performance to investigate the freedom to choose and imagine in the world of social media. Our systematic escape from reality via social media allows us to experience virtuality across a network where we can multiply, become others and communicate online, thereby continually altering, fragmenting and iconizing our personality. In digital spaces, we encounter a continuous stream of snapshots of places, people and objects that evoke memories of other selves and their experiences. But how much of others can we really grasp from these images and how much, in contrast, dissolves into the network? How does our imagination work in the frenzy, speed and overstimulation of scrolling and touching, as thousands of photographs pass before our eyes in rapid succession? Do we still know how to reconstruct the spaces of dreams or memories in our minds? Or is our mind becoming a sequence of pictures that we lack the space to store?

The transmedia narrative structure comprises four distinct phases.

PHASE 1: The scroll (real reality + smartphone)

Two recipients are invited to enter a room where they are greeted by three people (performers) who appear to be chatting. On seeing the two new arrivals, the three performers hand over a smartphone to them. The participants are prompted (via a specially designed app) to enter their password and give their name. From here, a scrolling sequence begins, proposing content related to the sea and playgrounds. The recipients are then invited to put on individual headsets placed in the center of the room. The last image on the smartphone is a grid environment.

PHASE 2: Pop-up world (VR)

Separately, each of the two participants enters an immersive grid-like environment identical to the one they have just viewed on their smartphone, but this time in VR. The same messages and images presented during Phase 1 appear in frenetic succession. The sequence comes to a stop on a final image, that of a playground (seen many times during the scrolling in Phase 1). The image expands, creating a new immersive environment.

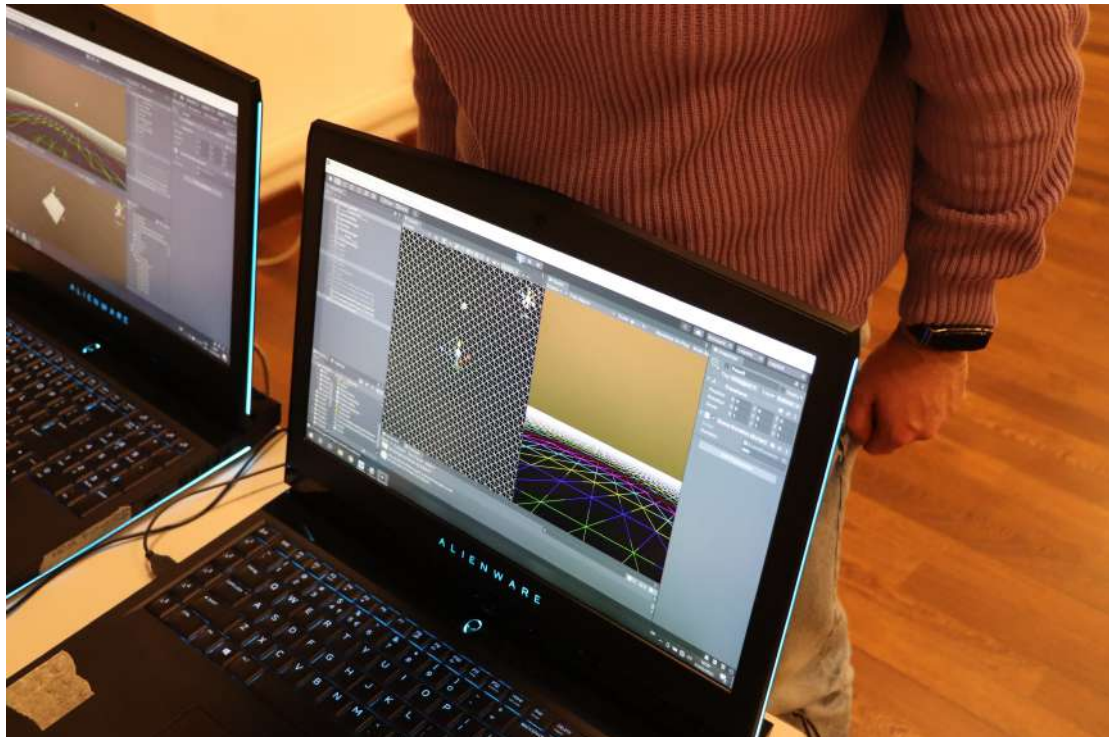


Figure 17: Phase 2. The VR world in Unity engine. Photo by Ana Carniti

PHASE 3: The playground (VR)

Around the user, a playground of glass gradually reconstructs itself, as though memory only reassembles ghosts or fragments of objects. At the end of this phase, a smartphone rings. The sound, accompanied by a sphere, approaches the recipient inside the VR environment. The sphere proves to be a further environment, which the recipients enter, guided by the voices and touch of the real-life performers, who draw them back into the live-streamed reality. The recipients now view the room from the perspective of one two 360° cameras, seeing themselves alongside the performers and the other participant.



*Figure 18: Phase 3. 2 360° cameras, recipients and performers.
Photo by Maurizio Consolandi*



Figure 19: Phase 3. VR world. Screenshot from Blender software

PHASE 4: My real self (live streaming + real reality)

The performers are observed by the two participants in the 360° via live stream footage in which the perspectives of the two cameras, placed at different heights and locations in the room, are alternated. Following a few actions by the performers, the 360° cameras are covered using a black cloth. The recipients are now left in the dark. The performers guide them to meet (and possibly touch). The performers remove the headsets from the participants who find themselves positioned close to each other in real reality.



Figure 20: Phase 4. Presence in real reality. Photo by Maurizio Consolandi

4.2.6. Final remarks

Within the framework of *Presence* projects, the narrative is perpetually in flux – both fragmenting and expanding within a convergence of media that oscillates between the real and the virtual. The narrative is bolstered by the fact that all the shifting, interlacing and impact of the different media is orchestrated around a pivotal theme. In this orchestration, both representation and story, when present, undergo continual and surprising metamorphoses. They serve only as guides, leading the participant into a new spatial-temporal dimension where what truly counts is the re-composition and renegotiation of the self, a process through which our relationships with others and the environment are also redefined⁷².

⁷² In this regard, some of the recipients offered interesting feedback, which can be viewed at the end of the trailer for the artwork: youtu.be/Z7X0YbhgfyQ.

4.3. Who can decide our *next nature*? Photosynthetic humans

4.3.1. Forward

Photosynthetic Me and *Photosynthetic You* are two recent works that I view as key to understanding how the narrative system of relations/connections that I construct can be transformed, expanding or contracting as a function of the context in which a given artwork originated. Furthermore, much like *Apnea*, they mark a significant turning point in my artistic journey.

4.3.2. *Photosynthetic Me*. Origins and description

Photosynthetic Me is an immersive and participatory bioart documentary installation that premiered at the Ars Electronica Festival in 2020 and was awarded with the S+T+Arts For Social Good Prize in 2021.

Photosynthetic Me and consequently *Photosynthetic You*, were born of a deep sense of personal urgency. This was sparked by two highly invasive preventive surgeries that I decided to undergo in 2018 and 2019, having tested positive for genetic risk factors. In Italy, such tests are offered by the health system to individuals who, like me, have witnessed multiple cancer-related deaths within their family. In this context, I will not elaborate on my personal reasons for making this choice, which I have already written extensively about in the journal *Surprize 4. What is life?* edited by Pier Luigi Capucci for Noema Media & Publishing (Vozzo 2022, 41-45). However, these circumstances prompted the central question that forms the concept for the work: "What would I do if I could travel back in time and alter my genetic heritage and more importantly, that of my daughter?".

Driven by this question, I embarked on a research journey, contacting my friends the biotechnologist Enzo Guarnieri and the photographer Andrea Macchia and beginning to construct a network of connections. This network eventually expanded to include producer Alessia Gervasone and, importantly, the Molecular Biotechnology Center (University of Torino – Italy) with its laboratory team and Professor Mara Brancaccio.

During this period, while browsing the web, I stumbled upon an article in the online version of *Nature* magazine. The abstract of the article introduced me to a unique organism: "Elysia chlorotica, a sacoglossan sea slug found off the East Coast of the United States, is well-known for its ability to sequester chloroplasts from its algal prey and survive by photosynthesis for up to 12 months in the absence of a food supply" (Cai et al. 2019, 1).

This fascinating creature sparked a series of new inquiries within me: How could this type of snail be so intelligent that it can steal the genes of another species in the pursuit of self-sufficiency? How could it adapt so perfectly to its new, changed form? And we, as humans, to what extent are we able to alter our evolutionary path? What are the limits and, above all, who can decide those limits?

While I did not have immediate answers to these questions, I was captivated by the *Elysia chlorotica*, which, as I detail in the catalog, instigated this fascinating exploration:

I talk about it with Enzo who becomes as enthusiastic as I am about the subject and who explained genetic mechanisms to me from a scientific viewpoint. Perhaps biotechnologies could be used for purposes such as this: to create people-plant hybrids. At this point, I tell Enzo that I would like to turn into a photosynthetic animal. I find the idea of making use of the new frontiers in the field of biotechnology to be a very appropriate one, to achieve an ecstatic level of energy self-sufficiency, bringing connections and mysterious, spiritual and natural relational forces into play (Vozzo 2022, 42).

Together with Enzo, we decided to initiate a process-based experiment with the support of the team and facilities of the Molecular Biotechnology Center (University of Torino – Italy). This culminated in a documentary that tracks the production of a speculative body cream, modified using CRISPR techniques. This cream has the speculative, but truly process-based, potential to activate a photosynthetic system that could make me self-sufficient for food and energy requirements and, eventually, a producer of energy. This became the central element of the installation, which I will describe shortly.

In this way we brought to the fore the revived debate around new genetic techniques, such as CRISPR/CAS9⁷³, accompanied by ethical questions around decision-making processes concerning biotechnologies and evolutionary paths. Naturally, this instigates discussions around interspecies

⁷³ In brief, just to clarify what I am referring to here: CRISPR/Cas9 (Clustered Regularly Interspaced Short Palindromic Repeats/CRISPR-associated protein 9) is a revolutionary genome-editing technology. It is a simple yet powerful tool that scientists use to edit the genomes of various species, including the human genome. The system is based on a naturally occurring defense mechanism found in bacteria. These organisms use CRISPR-derived RNA and various Cas proteins, including Cas9, to target and cut the DNA of invading viruses, thereby preventing their replication. This technique has vast potential and can be applied in many ways. It has revolutionized the field of genetic engineering. Jennifer Doudna at the University of California, Berkeley and Emmanuelle Charpentier, then at Umeå University in Sweden, published a paper in 2012 demonstrating that CRISPR/Cas9 could be used as a simple and efficient tool for making high-precision cuts in DNA.

hybridization and the role of technologies within a multispecies⁷⁴ space. A topic which is undeniably related to environmental issues.

As we moved forward, the project's framework of reference expanded to include scientific publications on horizontal gene transfer and CRISPR, artistic figures such as Eduardo Kac, Joe Davis Bombyx, Suzanne Anker and others including Ana Mendieta and Werner Herzog, as well as films such as Jessica Hausner's *Little Joe*.

One source of particular interest to me was the volume *Signs of Life: Bio Art and Beyond*, edited by Eduardo Kac (Kac 2007), featuring contributions from many exponents of bioart. The book is divided into four sections (Biotech Culture, Bioethics, Bio Art, Biology and Art History) and brilliantly addresses the theme of the relationship between biotechnologies, nature and art from multiple perspectives.

My project was also informed by the work of the artistic duo Christa Sommerer and Laurent Mignonneau at the intersection of natural science, technology and art.

Furthermore, Sommerer's suggestions and my discussions with the bioart researcher and artist Fabricio Lamoncha at the previously mentioned Interface Cultures Master Program in Linz played a crucial part in the ongoing development of the project.

⁷⁴ For Donna Haraway, this term means the entanglement of various forms of life – human, non-human, biological, technological – and the significant ways in which they interact, coexist and influence each other. (Haraway 2019/2016)

4.3.3. *Photosynthetic Me* narrative design

The installation comprises two environments in which the recipient jumps from being an observer to being a protagonist via an embodied narrative process and a participatory experience.

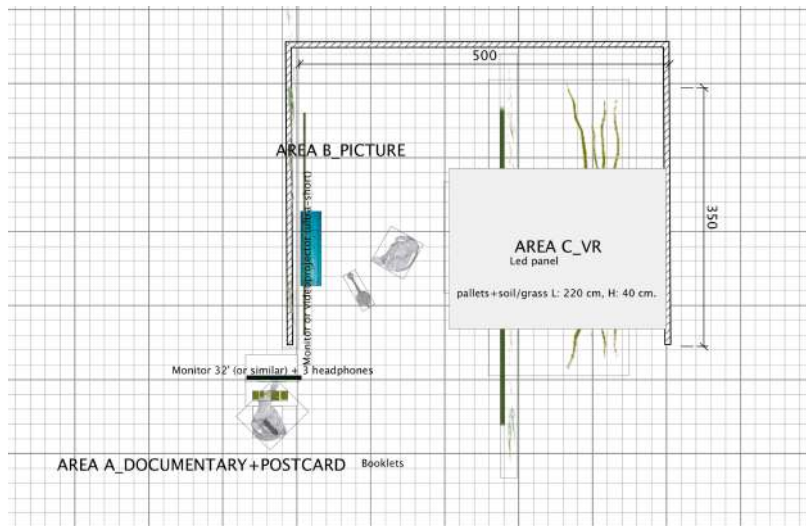


Figure 21: *Phosynthetic me* installation map. Image by Vanessa Vozzo

AREA A. A documentary based on specific studies of the photosynthetic qualities of the *Elysia chlorotica* slug and on CRISPR-associated transposases. This shows the experiment conducted in the laboratory of the Molecular Biotechnology Center to create an innovative topical cream using genome editing, synthetic biology and in-vivo gene therapy. The genetically modified cream transforms Vanessa V into a self-sufficient organism.

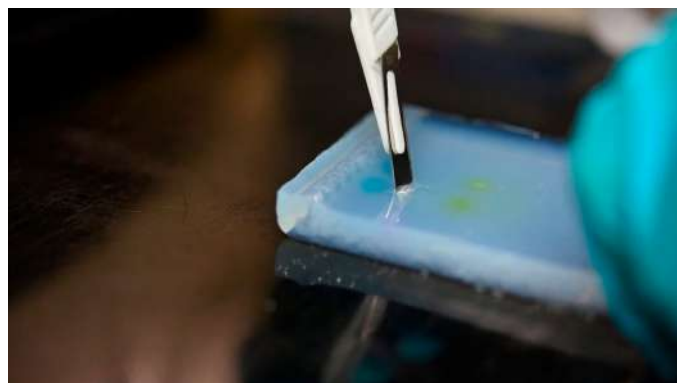


Figure 22: *PsbO* gene cut out after extraction from the algi and after highlighting it in the transilluminator machine. Photo by Andrea Macchia

AREA B. The narrative arc of the documentary concludes in Environment B, where the linearity of the previous environment is broken with and the recipient is offered different experiences that expand into the space.

1. The recipient can see the end of the narrative arc of the documentary (Area A): Vanessa V nestled into nature, gradually transforming into a plant after applying the cream.



Figure 23: Photo by Andrea Macchia

2. The recipients undergo an immersive first-person experience of “becoming-plantlike” by trying the photosynthetic cream on their own skin, putting on a VR headset and lying down on a lawn (a heated carpet of real grass), while breathing in the scent of mint and thyme and basking in the rays of a solar lamp.



Figure 24: Recipient experience in VR after spreading the cream. Photo by Alessia Gervasone

3. Recipients are offered the opportunity to engage in a participatory experience: for a small price, they can take home their own, pristinely packaged, tube of genetically modified photosynthetic cream. Any consequences of this last action may be shared via a QR code on a specially designed social media page.

4.3.4. From *Photosynthetic Me* to *Photosynthetic You*.

The sale of the cream, which was the second participatory experience within *Photosynthetic Me*, was partly inspired by the work of the speculative online shop *Nano Supermarket*, which is an initiative of the Next Nature network. *Nano Supermarket* is a mobile exhibition disguised as a supermarket packed with products that provoke debate on nanotechnology: medicinal candy, an energy belt, a wine whose taste can be altered using microwaves, a twitter implant, Google Nose, invisible security spray and much more, selected from all over the world.

Most importantly, *Photosynthetic Me* was informed by The Odin, a company that sells genetic-engineering kits and specifically CRISPR kits. This is not a speculative but a real online shop. The company's founder, Josiah Zayner, holds a Ph.D. in biophysics and is a renowned provocateur. Among his many stunts, he has induced his skin to produce a fluorescent protein, ingested a friend's feces in a D.I.Y. fecal-matter transplant pill and attempted to deactivate one of his genes to grow bigger muscles. Zayner has stated that his goal is to provide people with the resources they need to modify their lives through genetics in their spare time. Indeed, The *Odin* website declares that "we believe the future is going to be dominated by genetic engineering and consumer genetic design will be a big part of that. We are making that happen by creating kits and tools that allow anyone to make unique and usable organisms at home or in a lab or anywhere" (The Odin 2023).

What made the greatest impression on me about The Odin's work is its raising of big questions regarding the decision-making processes underlying biotechnologies. Indeed, CRISPR techniques have brought an old debate back to the fore.

The entanglement of science, technology and democracy have provided rich terrain for studies and analyses since the 1970s and even more so in the 1990s and 2000s. The foundational idea that has been passed down to us from Enlightenment thinking is that science and technology are key to the making and doing of democracy.

Today, this idea is more crucial for democracy than ever. Science and technology are so pervasive in our daily lives and so concentrated in the hands of a powerful few, that the belief that everyone should have the opportunity to contribute to their development and implementation seems to be one possible route towards establishing a new equilibrium in our society.

But what happens if we democratize effective new genetics technologies like CRISPR? If we are able to play an active part in the process of rewriting our evolutionary path and those of other species, plants and organisms of any kind? Who has the right to ‘deliberate’ about our next (and now so close) nature and what limits apply? Who is involved in the democratic decision-making process? Which are the right democratic decision-making processes to use? The sale of the cream, therefore, was moving in this direction: giving everyone the opportunity to choose whether or not to buy a cream that represents a first step towards the hybridization of humans with plants.

What gave me pause was the hesitancy (based on a vague fear) of many recipients, both in relation to applying the cream and in relation to purchasing it. And this although the project was clearly intended to foster critical reflection.

Following from these considerations, I now arrive at the pivotal question of the workshop and participatory experience, *Photosynthetic You*: what if we all had the chance to decide, paradoxically, in an extreme act of mass democracy, to become thin and motionless like leaves, energetically self-sufficient like plants, feeding only on light and solar power?

4.3.5. *Photosynthetic You*. Description

People who are in favor of a world where humans are hybridized with plants can take part in the *Photosynthetic You* workshop. Here they are invited to embark on a trail of formation and learning that is guided by plants and mediated by technologies.

The underlying concept is that we, as humans, can choose to be domesticated and colonized by plants. This will activate an evolutionary path, based on epigenetic inheritance⁷⁵, that will transform us into hybrid photosynthetic and plant-like organisms, self-sufficient in terms of the capability to meet our own food and energy requirements.

Photosynthetic You was presented for the first time as part of the *What is life?* program curated by Prof. Pier Luigi Capucci at the Academy of Fine Arts in Urbino and, in a different form, was premiered at Ars Electronica Festival

⁷⁵ “Epigenetic inheritance has emerged as a new research discipline that aims to study the mechanisms underlying the transmission of acquired traits across generations. Such transmission is well established in plants and invertebrates but remains not well characterized and understood in mammals. Important questions are how life experiences and environmental factors induce phenotypic changes that are passed to the offspring of exposed individuals, sometimes across several successive generations, what is the contribution of germ cells and what are the consequences for health and disease” (Arzate-Mejía and Mansuy 2022, “Abstract”).

2022. *Photosynthetic You* drew on the collaboration of an ad hoc team of artists and scientists, which included a plant physiologist specialized in plant biotechnologies Irma Milanese and musician Max Viale.

4.3.6. The workshop as a narrative ecosystem

The purpose of the *Photosynthetic You* workshop is not to teach, but rather to encourage the participants to choose to be active components of the narrative ecosystem through which they can acquire a deeper understanding of the topic by adopting a new perspective.

The narrative oscillates between individual and collective actions, with the ultimate objective of constructing a kit to continue practicing interactions with plants at home also.



Figure 25: Construction of the kit. Photo by Vanessa Vozzo

The activities proposed to the workshop recipients are:

1. After viewing a video tutorial (Vozzo 2022b), the recipients extract chlorophyll. They are then invited to apply chlorophyll to their bodies and to take it home in a small bottle as part of the kit.



Figure 26: Chlorophyll production. Photo by Vanessa Vozzo

2. Recipients engage in a 20-minute meditation session while listening to binaural beats generated by sound frequencies that they have chosen themselves. Throughout this session, they can hear glitches generated by the slow tropisms of the plants living in the workshop space. These glitches are captured using ECG electrodes and processed via data software. The sounds produced are recorded and the recipients are invited to take these recordings away with them. A goal for the future is to develop a mini-kit with an app that would allow the recipients the flexibility to meditate for any desired length of time.



Figure 27: Meditation with plants. Photo by Vanessa Vozzo

5. Roots and vibes

In this chapter, I explore other artistic universes that have contributed to shaping my critical thinking around the concept of narrative ecosystem.

To this end, I first briefly introduce my collaboration with Marcel·lí Antúnez Roca, which has significantly shaped my thinking about the relationship between narrative and media art.

Then, I move on to artists who work at the intersection of open documentary and media art and with whom I have had important exchanges of opinions, discussions and collaborations. Specifically, I analyze the narrative approaches of Blast Theory, Teri Rueb and the National Film Board by examining one representative work of each.

5.1. Marcel·lí Antúnez Roca. *Sistematurgy*

Marcel·lí Antúnez Roca is one of the founders of Fura dels Baus but left the group in 1989. I first met him in 1995, at the Link, an iconic bar in Bologna, Italy, where he was presenting his work, *Epizoo*.

Often compared to artists such as Stelarc, Jana Sterback, Orlan, FranKo B, Matthey Barney, Paul McCarthy and others, Marcel·lí was one of the symbols of the artistic movement based on cyberpunk human-machine hybridization, a post-organic and post-human vision born partly from the ashes of Body Art.

I will not dwell further on these movements as they are well-documented online. When I was younger, I was fascinated by the genre and Marcel·lí's work was rich, organic, laden with powerful archetypal symbols and at the same time, well-structured and mathematically organized. Hence, I was keen to meet him. After following his work for a period, in 2002, I invited him for the first time to participate in a theater and visual arts festival that I was directing in Torino, Italy. From that moment onwards, I collaborated with him on various projects in different capacities (including the incredible role of Assistant Director). Beginning in 2012, I shifted away from his work, as my artistic universe was changing and Marcel·lí's work was increasingly distant from my own aesthetic vision. Despite this, his thinking about art and, above all, his concept of narrative in digital environments has certainly been foundational to my work as an artist and scholar.

Since the mid-1990s, Marcel·lí has been using narrative as a necessary tool for managing complexity in his performances and interactive installations. Using fragmented and open narratives, he constructs a theatrical and polysemic language, structured around the ability to modulate and transform situations in real-time via a mechanism that encompasses both interactive media and the body of an individual or collective (be it the body of the performer/s or of the audience). Performances such as *Afasia* and *Pol* and installations such as *Tantal* exemplify this approach. In *POL* for example, Marcel·lí uses the homonymous real-time data software developed by Sergi Jordà as a key technical component of his sistematurgy (which I shall explain shortly).

Marcel·lí's work is informed by a wide range of multidisciplinary sources and art forms. In a personal interview from 2012, which I have never published, he revealed his enduring curiosity about and affinity with avant-garde movements that have often been overlooked in the historical discourse.

These include Art Brut, Viennese Actionism, Nouveau Réalisme, Pataphysique and OuLiPo, all of which inspire him to continually explore fresh perspectives.

His approach to this multiplicity follows an intuitive method inherited from the visual arts, which allows him to draw on the most diverse fields of knowledge, absorbing, reworking, recomposing and amalgamating everything as though it were a material to be continuously reshaped and decoding it according to the canons of his own 'artistic doing' and stylistic universe. His is a truly autopoietic ecosystem, which, however, rarely seeks contact with ecosystems that assemble different components. Marcel·lí is an artist eager for sources that he makes 'his own' of, quickly devouring them and returning them in a new form, but always within his own universe.

To organize the complexity that emerges from the 'Antúnez universe', Marcel·lí structures his work using sistematurgy, or the 'dramaturgy of computational systems', a 'macrostructure', a 'structure of structures', a sort of replicable theoretical model for managing his uncontrollable system.

Marcel·lí provides us with an interesting definition of sistematurgy by drawing a parallel with biology: "The idea of an organism is a good metaphor for understanding sistematurgy. Like organisms, sistematurgy coordinates different systems to achieve a single goal: the artwork. If any subsystem fails, the artwork does not work. The sistematurgical work supports the analytical work at different levels. Like in biology, we start from a general level that includes and implies all the elements, audience reaction included (ecosistematurgy), down to more specific levels determined by the shape of each of the elements that make up the work (micromaturgy)"(Antúnez Roca 2005, 4).

In sum, the sistematurgy is the 'systematization', via a narrative structure, of the interactive elements (user/interface/computer system/media) together with the intangible and immaterial elements present in Marcel·lí's iconographic, symbolic, archetypal and organic universe.

To return to the conclusions of Chapter 3, Marcel·lí's work is still constructed around a type of narrative based on storytelling that, while highly open and combinatorial, is guided by the author, the demiurge creator of his own universe. His works have rarely taken a more 'rhizomatic' form, with the exception of some participatory performances or installations.

This is a highly conscious choice that I discussed with him in the earlier mentioned interview and one that sparked many doubts in me at the time.

These necessary doubts, now seen from the perspective of a different point in time, in a way enabled my artistic growth.

5.2. Make your choice. Blast Theory: *Karen*

5.2.1. Foreword

In 2017 and 2020, together with two colleagues of mine from the University and Politecnico of Torino (Italy) respectively, I curated two projects for the Officine Sintetiche platform that entailed a series of meetings, workshops and lectures with Matt Adams, one of the founders of Blast Theory. I first had the opportunity to meet and collaborate with Matt thanks to a workshop at Brunel University in London in 2013, where I was invited as a visiting researcher and teaching assistant. The following text draws mainly on the material that I collected during that period and on my conversations with Matt.

5.2.2. About Blast Theory

Founded in 1991, Blast Theory is a renowned award-winning company based in Brighton (UK) and led by Matt Adams, Ju Row Farr and Nick Tandavanitj. Its mission is to explore social and political issues through interactive art, placing the audience at the core of the experience.

Themes such as violence, pornography and politics are addressed using innovative narrative techniques and technologies, including virtual reality, locative media, mixed reality and mobile devices. Collaborations with researchers, scientists and the University of Nottingham's Mixed Reality Lab (since 1997) are integral to the company's work. A further focus is recruiting the participation of individuals of diverse backgrounds, ages and origins and conducting ethical inquiries using game strategies, thereby probing the boundaries of real and virtual spaces.

Employing mobile media, tracking technology and digital networks, Blast Theory sets up hybrid spaces, where participants are engaged via 'mixed reality games' like *Can You See Me Now?* and *Uncle Roy All Around You* (Kwastek 2013, 248).

While they are acclaimed for this last aspect of their work, it is important to me to introduce their artistic approach and poetics in relation to the philosophical question of the 'trolley dilemma', since I feel this strongly resonates with my own work. In his lecture at the Politecnico of Torino in 2017, Matt Adams explained that the 'trolley dilemma' is a philosophical

problem centered around a runaway trolley on a track. If left unchecked, it will hit and kill five people, but the option is available to switch the tracks, saving the five but causing the death of one person on the alternative track. This situation raises ethical questions about taking a life to save others. The problem emerged in the 1960s and was initially presented by English philosopher Philippa Ruth Foot, who was investigating moral issues such as abortion and justification. This philosophical scenario has spurred extensive research and is influential because it has taken philosophy beyond academia. It brings philosophical inquiry into real-world contexts, enabling public engagement and data collection on moral reasoning. Variations on the dilemma, such as one where a person must be pushed off a bridge to save others, offer different perspectives. In the lecture, Adams further contends that this approach informs Blast Theory's interactive projects. It helps them to engage each individual audience member in an ethical dilemma, thus encouraging recipients to share their thoughts and grapple with the complexity of the issues raised in a given project (Adams 2017).

5.2.3. About *Karen*

Karen is a Blast Theory mobile artwork, an app created in 2015 and upgraded in 2020, developed in partnership with the National Theatre Wales and with the Mixed Reality Lab of the University of Nottingham and co-commissioned by The Space with the support of 539 Kickstarter backers.

Karen is the name of the main character in the app, a digital personal coach and supposed friend that uses a variety of psychological and narrative techniques to collect data from the recipients of the app. *Karen* is an artwork about data collection, privacy and data surveillance, but also about the everyday strategies of psychological manipulation that we are exposed to through our smartphones.

To have an experience with *Karen*, recipients can download a free app on Apple Store or Google Play. When they open it, they can talk to an over-friendly and somewhat unusual life coach (*Karen*).

Karen uses a multiple-choice system to engage recipients in the course of 20 episodes distributed over 10 days, during which the player is meant to be available to respond to her calls, interviews and questions.

In the beginning she comes across as professional, but as the relationship develops, *Karen* becomes exceedingly curious. She seems to know things about the recipient that she should not and has no respect for personal

boundaries. Ultimately, she even introduces the recipient to her own life and negative relationship.

The recipient has short interactions with Karen once or twice a day at different times, occasionally including very late in the evening.

Throughout, *Karen's* Artificial Intelligence is profiling the player via continuous psychometric testing and offering advice based on conversations and data. Psychometric tests are questionnaires, often with multiple-choice answers, designed to gather information about the personality or other cognitive aspects of respondents and to build up a psychological profile of them. At the end of the experience, recipients are given the opportunity to purchase their own profiles.

Like almost all of Blast Theory works of art, *Karen* was developed based on co-working and informed by extensive research and numerous collaborations. Of particular importance is the background research carried out by Dr. Kelly Page, a public speaker and social design ethnographer who works at the intersection of social learning and digital participation. Professor Nina Reynolds and Dr Kelly Page joined the *Karen* project team to scope out the history and practice of psychological profiling, while Geraldine Nichols spent six months in 2013 researching psychometric scales and questionnaires.

5.2.4. *Karen* narrative design

At the core of Blast Theory's general narrative approach, the problem of complexity, which is generated by the deployment of many and diverse elements, is not addressed using predetermined and precise structures. Rather, it is approached via a series of initial questions concerning space, time, level of individual and collective recipient participation, design and narrative structure. The world of storytelling exists in Blast Theory's works, but it gradually takes shape and emerges only in the final third of the project development process.

Specifically, as illustrated by Matt Adams in a video published on the Blast Theory website (Adams 2020), *Karen* uses interactive storytelling techniques that mix gameplay and storytelling. According to Matt, developing a mix of these two techniques is always a challenge because Interactivity and gameplay offer a wide range of possibilities, thus granting recipients substantial control and agency, while storytelling requires a multifaceted plot enriched with emotions, which often requires recipients to have less control. In *Karen*, Blast Theory decided to entrust recipients with strong agency, but at

the same time, to restrict them to a specific emotional context that enables the AI to create a user profile. To achieve this, the story unfolds subtly, avoiding clear or strong feedback, as the main purpose is to establish an emotional relationship between the recipient and *Karen*, thereby breaking down the barriers between public and private. This allows *Karen* to enter the recipient's life, while the recipient gets caught up in spying on *Karen's* life.

Karen is based on a complex writing process that makes extensive use of interactive storytelling and the concept of a narrative tree. Nevertheless, it is divided into micro-stories that unfold over a period of 10 days.

Karen's narrative develops step by step and this is crucial because the relationship is formed over 20 episodes. Each time recipients answer a question (based on psychometric tests), another step in creating a psychological profile of them is completed, producing an adaptive effect on the interactive narrative.

It is in the waiting for the daily conversation with *Karen* that the game gains extra significance. Thanks to this extended time, recipients begin to reveal more personal details, allowing *Karen* to build a system where public and private no longer exist. This is an interesting aspect that I also experienced myself as a player.

I found that once a more intimate relationship had been established, I personally almost did not want to answer the questions anymore, yet I felt the desire to have *Karen* with me at all times. The stark reality is unveiled when recipients grasp the amount of data that has been harvested from them. This awareness not only triggers alarm with respect to issues of privacy but also invokes, from my standpoint, a profound and intimate reflection on the 'emotional' bonds shaped by technology.

5.2.5. Final remarks

Despite the significant influence of cinematic, gaming and storytelling techniques on the work of Blast Theory, in my opinion, it does not aim to recreate the "magic circle" of the story. Rather, it is organized into complex narrative systems where various media converge in a functional manner, intelligently distributed across time and space. The narrative framework becomes a perfect mechanism for eroding the barrier between public and private, creating an ecosystem in which recipients' choices become indispensable to the life of the artwork. These choices (let us remember the

trolley dilemma) deliberately push recipients towards potentially transformative reflections relating to their social and political lives.

5.3. Deterritorialization. Teri Rueb: *Of Lands and dreams*

5.3.1. Foreword

In 2017, as part of the activities of the Officine Sintetiche platform – which I have previously referred to – my team had the privilege of hosting a Teri Rueb lecture and workshop at the PAV Parco Arte Vivente⁷⁶.

Teri Rueb is an artist with whom I felt an immediate connection. My appreciation for her work had taken root a few years prior to meeting her, thanks to Katja Kwastek's book, *Aesthetics of Interaction in Digital Art* (2013). However, the opportunity for personal interaction proved valuable, not only for deepening my understanding of her art but also for shedding light on my own artistic journey.

At that time, I was working on a long-term project, which is currently on hold and not the focus of this thesis, entitled *Contact-zones*. Inspired by situationist psychogeography and Kevin Lynch's book, *The Image of the City*, it fell under the umbrella of locative media art, an artistic domain that is closely connected with Teri Rueb's work and also with that of Blast Theory.

The material in the following sections is therefore mostly derived from my conversations with Teri during that period.

5.3.2. About Teri Rueb

Teri Rueb is a distinguished media artist and, currently, a professor at the Department of Critical Media Practices of the University of Colorado Boulder (Colorado, US).

She has received numerous grants from international institutions and awards, including an Award of Distinction in the Digital Music category at Ars Electronica 2008. She has presented her work worldwide at venues including, among the others, ISEA, SIGGRAPH, Transmediale, The New Museum of Contemporary Art and IRCAM.

Teri Rueb began her professional career as a sculptor, inspired by politicized artists such as Conrad Atkinson and Martha Rosler. Their influence quickly led her to move outside of museum systems towards public art, a medium she saw as facilitating the creation of public spaces, a viewpoint that emerged

⁷⁶ This is an indoor and open-air museum in Torino (Italy), founded by the well-known artist Piero Gilardi (Arte Povera, Land Art).

during her lecture at the Politecnico of Torino (Rueb 2017a).

At the same lecture, she explained that prior to the internet era, she had a preference for the telephone as a medium. Then, around 1996, she was introduced to GPS systems. As a result, she began creating sound installations using GPS to activate sound in large-scale outdoor environments. Walking, for her, is a primary mode of engagement. Therefore, her artworks require 'performing places', where the (walking) body, enmeshed with the site and networks of technological apparatus, becomes part of an 'expanded field'. Expanded field is a term used in Rosalind Krauss' *Sculpture in the Expanded Field* essay. In Krauss's work, art and architecture are not separate fields but rather two ends of a connected spectrum of disciplines that can intermingle, connect and critique each other (Krauss 1979). In the 1960s and 1970s, Minimalism re-framed the subjectivity of the beholder with its insistence on a participatory mode of reception and its embrace of an 'expanded field' of sculpture, newly defined in relation to landscape and architecture. Acknowledging the social production of space, artists took cues from philosophers and theorists such as Guy Debord, Henri Lefebvre and Michel de Certeau, whose writings offered a further conceptual framework within which to understand the blurring of art and everyday life.

In line with this idea, which she expressed in her lecture, Rueb sees the GPS system as a medium for locating the body and subjectivity, now newly cast in an 'expanded field' where agencies and actors perform place at new scales and temporalities.

Hence, Teri Rueb's artistic work unfolds at the intersection of media participation and public spaces, conceived as fluid and vibrational landscapes that are distinct from mere geographical places. From this perspective, again during her lecture at the Politecnico, she echoed Elisabeth Grosz (Rueb 2017a) in stating that "Geography is the space of the map, which is regulated by measurable abstract coordinates, what Deleuze and Guattari refer to as striated or sedentary space, a space whose location or region is abstracted from its lived qualities. Landscape, by contrast, is that space revealed by sensation, which has no fixed coordinates but transforms and moves as a body passes through it" (Grosz 2008, 72). In sum, her works are often a sort of sound sculptures that are realized via community-based participatory paths in the form of a landscape and visualized as deterritorialized maps with no boundaries or frontiers.

Rueb brought this same perspective to bear – during the workshop she conducted at PAV Parco Arte Vivente in Torino (Italy), entitled *Sounding Spaces. PAV as Palimpsest, Stratigraphy, Milieux* – to investigate the layered meanings inherent in the idea of a ‘living art park’ within an ecological framework of historical coexistence between the living and the non-living. Overall, her approach combines practical engagement with contemporary technological tools and strategies linked to GPS art, locative media and augmented reality. The ideologies of mapping and cartography play a significant role in her projects, which intertwine geospatial information technologies with sound recording and listening exercises.

5.3.3. About *Of Land and Dreams*

Of Land and Dreams is a collaborative mapping project, curated by Teri Rueb and Alan Price, which draws on land and community-based artistic practices to focus on the land, water and people of the Dakotas.

This artwork was commissioned in 2016 by the gallery director at Northern State University (NSU) in Aberdeen, South Dakota. Teri was invited to create a site-specific, community-based art project financed by the region’s ‘new works fund’. The artwork was also required to have a formal outcome at the Johnson Fine Arts Center gallery.

The term The Dakotas collectively refers to North Dakota and South Dakota in the USA. Right in the middle of the region is the Standing Rock Native American Reservation, from which Teri Rueb commenced this work. Starting in 2016, protests got underway against the construction of an oil pipeline on the reservation lands, a project backed by the Trump administration in partnership with oil multinationals (Dakota Access LLC). This well-founded and persistent protest continues to this day. Meanwhile, the Native Americans have been plunged into a state of poverty, disadvantage and environmental devastation, a situation that is predicated upon inequality, exploitation and abuse.

The Dakotas, Teri explains on her website, “have become the focus and symbol of contemporary debate about land, water and natural resources. How can this conversation be carried forward with an ear to the questions and issues as they arise from the land itself? What dreams might be revealed if we listen to the land?” (Rueb 2017b).

5.3.4. *Of Land and Dreams* narrative design

In an interview, Teri mentioned that she was initially very struck by the Lakota story of a Black Snake which symbolically prophesizes the sorrow caused by the pipeline. The snake idea reappears in the aesthetics of the interactive installation set up for the museum, which is responsive to the movements of the recipients.

The most effective description of the narrative structure is contained in Teri's own words on her website:

Of Land and Dreams invites you to participate in the collaboration by contributing images, text, sounds, video – anything that expresses a deeply felt connection to the land in the Dakotas and beyond. Contributions become part of a collaborative mapping in the form of a large digital projection in the Johnson Gallery and online. Each tile in the mapping will hold an image, text, or media element contributed to the project - a tapestry to honor and bear witness to an extraordinary land and people.

The free mobile app allows you to post media and geolocate it to your location, as well as browse contributions made by other participants. Alternatively, you can post media to our Facebook page and it will become part of the collaborative map (Rueb 2017b).

This, therefore, is an interactive and participatory artwork, visually well-structured, which creates an ecosystem between 'inside' and 'outside', 'presence' and 'absence', 'dislocated' and 'allocated' contents. These elements are then reconstructed in a fluid map that is continuously transforming and that integrates interactivity and participation.

5.3.5. Final remarks

What I find fascinating about Teri's work is her untiring commitment to systemizing the highly diverse elements she works with. She composes flawless narrative structures, which are rhizomatic but not made up of blocks, but rather – I would venture to suggest – behaving more like a 'flock'. The outcome is unpredictable experiences, which are sometimes highly effective and sometimes weaker, but always dynamic and alive.

I find it useful to compare such a structure to the respiratory mechanism of a living organism that needs to expand and then contract, in a continuous exchange between outside and inside, territory and its deterritorialization, the many and the one.

5.4. Breaking the magic circle. The National Film Board of Canada.

5.4.1. Foreword

My interest in the National Film Board grew from a series of significant events during my academic and artistic journey. As an adjunct professor at the Politecnico of Torino, I had the opportunity to meet Eloi Champagne (NFB Production Technology Strategist) and Vincent McCurley (NFB Creative Technologist), both from the National Film Board of Canada. I was already familiar with Vincent due to his articles on Medium, an American online publishing platform that I began using around 2016 to research 360° and VR storyboarding. Vincent had written interesting articles (still available today) on this topic. Thanks to a conversation with him, I refined a model for 360° storyboards and screenplay, partially based on his model, which I use as an artist and at the universities where I work.

Then beginning in 2019, I collaborated with Eloi in a workshop at the Politecnico, where I held the position of Narrative Designer Supervisor at the *(X)r immersive interactive stories* lab. Furthermore, I was a panelist with Cécilia Ramirez of the NFB at the presentation of Creative Canada Créatif 2022 (a conference about their recent production *Plastisapiens*) at the National Museum of Cinema in Torino.

As a Canadian governmental agency that typically produces and distributes films, NFB primarily engages in storytelling through its interactive division, but with the intent to disrupt conventional methods of engagement in the VR and 360° cinema market through an innovative and outstanding use of digital media.

In their latest production, *This is not a ceremony*, Colin Van Loon Ahnahktsipiitaa, (writer and director) declares: “This is not a metaphor. This is not a simulation. This is real life” and then “Now that you know, just what are you going to do about it?” (National Film Board of Canada 2023a).

In my journey to navigate the intricate overlapping of 360° cinema (live action), VR and XR, my interactions with the National Film Board have played a significant role in orienting me amidst this complexity. In the following sections, I briefly explore one of their pioneering productions: *The Enemy*.

5.4.2. About the National Film Board of Canada

While this is certainly not the context in which to recount the history and work of the National Film Board of Canada, a renowned governmental agency that

produces and distributes documentary films, animation, web documentaries and alternative dramas, it is worth noting that its founder, in 1939, was John Grierson. As we know, Grierson was a British film producer, critic and director, at the helm of the British and Canadian documentary movement in the 1930s. In Chapter 2, in referencing Grierson, I mentioned his belief that documentaries can foster a deeper understanding of reality. But this is not achieved by means of faithful reproduction or simulation, but rather by bringing facts back to life. Even without an in-depth presentation of the National Film Board's overall work (which can easily be sourced elsewhere), I believe that their 'interactive' division retains this mindset of exploration, seeking out innovative methods to 'bring facts back to life'.

5.4.3. About *The Enemy*

This approach resonates in the poetic underpinnings of the National Film Board's productions. One such work is *The Enemy*, which was first showcased in 2017⁷⁷. This piece has been described by its author and director – Karim Ben Khelifa, who has been a war correspondent for many media outlets in numerous war zones – as "at the intersection of virtual reality, neuroscience, artificial intelligence and storytelling" (National Film Board 2023b). According to Ben Khelifa, we comprehend the world through narratives and our memories are shaped by experiences. This raises the question: "What happens then when someone else's story becomes your experience?" (National Film Board of Canada 2023b).

In *The Enemy*, viewers meet six combatants from three long-standing conflict zones: Israel-Palestine, Congo and El Salvador, in an artwork that brings together virtual reality, augmented reality and 3D reconstructions based on documentary material gathered in the field by Karim Ben Khelifa. The project also employs artificial intelligence, drawing on the work of Fox Harrell, associate professor at MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL).

The aim of the project is to break away from the kinds of images of war that media typically show us. This is achieved by listening to the voices of those who carry this violence within themselves, by allowing them to introduce themselves and to share their ideas and dreams and by bringing the

⁷⁷ This artwork is currently undergoing modernization and is set to have a second life with more recent technologies and instruments.

recipients face to face with them. *The Enemy* does not seek to provide answers or explanations; on the contrary, its purpose is to share the experience of war and provoke discussion.

5.4.4. *The Enemy* narrative design

The narrative of this work is informed by a set of specific questions, posed by the journalist Karim Ben Khelifa: what exactly do we know about these combatants? What do we really understand about the motives that drive human beings to engage in combat—putting themselves at risk of both being killed and becoming killers themselves? And why continue to fight over the course of several generations? What does freedom look like for these warriors? What is their future?

These inquiries culminate in a single question concerning war: Could I be you if I was on the other side?

The Enemy includes two interactive experiences:

- ◆ A face-to-face museum exhibit that makes use of virtual-reality headsets to place recipients between the enemies, at the point where their gazes intersect;
- ◆ An application for smartphones using augmented and mixed reality techniques that enables recipients to recreate the face-to-face experience in their own environments.

The virtual fighters are photorealistic, yet they are placed in an anonymous space, decontextualized and literally deterritorialized.

The script that plays out during the experience depends on the recipient's answers to a questionnaire. The recipient's behavior is recorded throughout the installation and determines the epilogue (National Film Board of Canada 2023c).

The exhibit section can accommodate up to 20 simultaneous visitors (recipients). Each visitor is also a player who appears to the other players as a combatant. The recipients are equipped with a 'backpack', a kind of battery-operated gaming computer (MSI VR One computer) and a virtual reality headset. They may then enter three rooms, each one representing a different conflict. Here, the recipients are introduced to six fighters, two for each conflict zone. The fighters talk to the recipients and look at them. Each fighter behaves differently and has a small component of artificial intelligence, making him seem very lifelike. An OptiTrack motion-capture system is used with the VR headsets to track the recipients' movements. This requires

positioning a number of infrared cameras around a large space (National Film Board of Canada 2023c).

The application is in Augmented reality (AR) and may be downloaded by anyone. It is also interactive and the fighters are placed in the same environment as the recipient (National Film Board of Canada 2023c).

5.4.5. Final remarks

In this context, I have chosen not to delve into the stories of the fighters or into the interactive storytelling that they lead. Rather than the journalistic or hypertextual aspect, what interests me is the wide range of components that converge in a complex system like *The Enemy*. Although the concept of storytelling and character is very much present, the variables given by a multitude of active and dynamic elements compose and re-compose the work around the medium in an uncontrollable manner. The system has the capacity to 'teleport' fighters who the recipients would likely never have met, giving rise to a spatio-temporal collision. By virtue of this mechanism, reproduction, simulation and identification are nullified to make way for the cognitive/perceptual effect generated by the overlapping of different planes and dimensions.

6. Conclusion

In the ever-changing digital world that shapes our existence, molding our reality and redefining our social connections, even our identity becomes liquid (Baumann 2020/1999), shifting and multiplying, sometimes under our own control, at other times autonomously and unpredictably. Thus, in this thesis, I felt the need as an artist and scholar to reclaim the term 'narrative'. Not so much to lament a deviation caused by the digital world, but rather to reappropriate a structural and associative capacity of the mind that in my view – as I mentioned in the preface and frequently throughout this thesis – conditions our actions in the world as individuals and as a collective and, therefore, also shapes our identity. Today, this capacity cannot fail to consider cyberspace, to use a term that is outdated yet remains clear, or the fateful metaverse, now also outdated, or – should we wish to use a more all-encompassing label – artificial intelligence.

Hence, I have positioned narrative within the space of convergence between documentary and media art, constructing a framework in which to situate practices, concepts and theories. This framework also extends to my own artistic work and to other works that emphasize the narrative dimension.

Obviously, it is not easy to discuss narrative without recourse to classifications or chronologies. Nevertheless, I believe that the narrative ecosystems composed of multiple nodes and germinations that I have presented here cannot be too closed; they must remain fluid, in order to truly become living organisms capable of articulating reality. The problem is that the elements of digital narrative systems, which may be likened to the words composing language, require continual literacy development and this represents a challenge for the art world I have discussed in this thesis, where the idea of openness can be intimidating and cause a strong sense of disorientation among artists.

Such disorientation does not only concern the artists. It also affects their audiences, about whom I have no definitive answers to offer, only questions that I am sure will accompany me in my future reflections. Specifically, I wonder whether these narratives of engagement, in order to truly function as an active engine of critical thought and action in the world, shaping reality and rebuilding social ties, also need a literate audience capable of responding to the stimulus that they offer. Thus, my question is: can we be certain that there is a broader audience ready to become an engaged audience?

In conclusion, this thesis forms a mosaic of inquiry into the transformative potential of narratives at the intersection of documentary and media art, inviting artists to understand the role of narrative and how important it is to include audiences with the capability to navigate narrative ecosystems. These audiences should not be passive observers but rather active participants in the ongoing construction of reality – a reality that, through the interplay of engaging narratives, emerges as a canvas for imagination, engagement and meaningful change.

References

Adams, Matt. 2017. "Matt Adams. Blast Theory – Lecture in Politecnico di Torino". Vimeo December 24, 2017. Accessed August 3, 2023. vimeo.com/248636559.

Adams, Matt. 2020. "Karen's back. In your app store". Blast Theory. Accessed August 3, 2023. blasttheory.co.uk/karens-back-interactive-storytelling.

Antúnez Roca, Marcel.lí. 2005. *Sistematurgia*. Marcel.lí Antunez Roca. Accessed July 3, 2023. marceliantunez.com/texts/sistematurgia/sistematurgia.pdf.

Antunez Roca, Marcel.li. n.d. "Antúnez Roca, Marcel.lí". Marcel.li Antunez Roca. Accessed August 3, 2023. marceliantunez.com/work/epizoo/.

Arendt, Hannah. 2017/1958. *Vita Activa. La condizione umana [The Human Condition]*. Translated by Sergio Finzi. Milano: Bompiani.

Arzate-Mejía, Rodrigo G., and Isabelle M. Mansuy. 2022. "Epigenetic Inheritance: Impact for Biology and Society – recent progress, current questions and future challenges". *Environmental Epigenetics* 8 (1): dvac02. doi.org/10.1093/eep/dvac021.

Aston, Judith, and Sandra Gaudenzi. 2012. "Interactive Documentary: Setting the Field". *Studies in Documentary Film* 6 (2): 125-139. doi.org/10.1386/sdf.6.2.125_1.

Balletto Teatro di Torino. 2023a. "Tiny Uppercase". Vimeo January 26, 2023. Accessed July 30, 2023. vimeo.com/793027607?share=copy.

Balletto Teatro di Torino. 2023b. "Tiny Uppercase". Balletto Teatro di Torino. Accessed July 30, 2023. ballettoteatroditorino.it/tiny-uppercase-2/.

Ballo, Andrea and Vanessa Vozzo. 2018. "Apnea. The eternity of absence". Vimeo April 20, 2018. Accessed July 30, 2023. vimeo.com/265735485.

Balzola, Andrea. 2004. "L'utopia delle sintesi delle arti. Dai romantici alle avanguardie storiche". In *Le arti multimediali digitali Storia, tecniche, linguaggi, etiche ed estetiche delle arti del nuovo millennio*, edited by Anna Maria Monteverdi and Andrea Balzola, 26-53. Milano: Garzanti.

Barthes, Roland, and Paolo Fabbri. 2019. *Sul racconto. Una conversazione inedita con Paolo Fabbri*. Genova: Marietti 1820.

Barthes, Roland. 1986/1964. *Elements of Semiology [Éléments de Sémiologie]*. Translated by Jonathan Cape. New York (US): Hill and Wang.

Bauman, Zygmunt. 2020/1999. *Modernità liquida [Liquid Modernity]*. Translated by Sergio Minucci. Bari-Roma: Laterza.

BeAnotherLab. 2023. "BeAnotherLab". BeAnotherLab. Accessed July 30, 2023. beanotherlab.org/.

Berkman, Natalie. 2014. "The OuLiPo Group". The Literary Encyclopedia. Accessed August 4, 2023. litencyc.com/php/stopics.php?rec=true&UID=19387.

Bishop, Claire. 2020/2012. *Inferni artificiali: La politica della spettatorialità nell'arte partecipativa [Artificial Hells: Participatory Art and the Politics of Spectatorship]*. Translated by Cecilia Guida and Mariagiorgia Ulbar. Roma: MML srl/Luca Sossella editore.

Blast Theory. 2023. "Blast Theory". Blast Theory. Accessed July 30, 2023. blasttheory.co.uk.

Blast Theory. 2015. "Karen". Blast Theory. Accessed July 30, 2023. blasttheory.co.uk/projects/karen/.

Bolter, Jay David, and Richard Grusin. 2003/1999. *Remediation. Competizione e integrazione tra media vecchi e nuovi [Remediation. Understanding New Media]*. Translated by Benedetta Gennaro. Milano: Guerini e Associati.

Bourriaud, Nicolas. 2010. *Estetica relazionale [Esthétique relationnelle]*. Translated by Marco Enrico Giacomelli. Milano: Postmedia Books.

Budai, Bálint, Maša Jazbec, Aleksandra Mitic, Martìn Nadal, Jürgen Ropp, and Vanessa Vozzo. 2023 “VR in Wonderland#1”. Ars Electronica. Accessed July 30, 2023.
ars.electronica.art/outofthebox/de/wonderland/.

Bush, Vannevar. 1945. “As We May Think.” *Atlantic Monthly* 176: 112-124. Accessed June 20, 2023.
[worrydream.com/refs/Bush%20-%20As%20We%20May%20Think%20\(Life%20Magazine%209-10-1945\).pdf](https://worrydream.com/refs/Bush%20-%20As%20We%20May%20Think%20(Life%20Magazine%209-10-1945).pdf).

Caronia, Antonio. 2004. “New Media e Narrativa.” In *Le arti multimediali digitali Storia, tecniche, linguaggi, etiche ed estetiche delle arti del nuovo millennio*, edited by Anna Maria Monteverdi and Andrea Balzola, 240-247. Milano: Garzanti.

Cai, Huimin, Li, Q., Fang, X. et al. 2019. “A draft genome assembly of the solar-powered sea slug *Elysia chlorotica*”. *Sci Data* 6, 190022.
doi.org/10.1038/sdata-2019-22.

Chatzichristodoulou, Maria. 2016. “Karen by Blast Theory: Leaking Privacy.” In *Digital Bodies: Creativity and Technology*, edited by Susan Broadhurst and Sara Price, 65–78. London, New York, Shanghai: Palgrave Macmillan.
doi.org/10.1057/978-1-349-95241-0.

Comitato 3 Ottobre. n.d. “Memoria, dialogo e accoglienza”. Comitato 3 Ottobre. Accessed July 30, 2023. [comitatotottembre.it/](https://comitatototottembre.it/).

Davies, Char. 2004. “Virtual Space”. In *Space: In Science, Art and Society*, edited by François Penz, Gregory Radick, and Robert Howell, 69-104. Cambridge MA: Cambridge University Press. immersence.com/.

DCRC (Digital Cultures Research Centre Bristol). 2011. “i-Docs 2011: a short documentary.” Video. Accessed January 22, 2023.
vimeo.com/38224838/embedded=true&source=vimeo_logo&owner=6477006.

de la Peña, Nonny, P. N. Weil P., J. Llobera, E. Giannopoulos, A. Pomé, B. Spanlang, D. Friedman D., M.V. Sanchez-Vives e M. Slater. 2010. "Immersive Journalism: Immersive Virtual Reality for the First-Person Experience of News". *Presence: Teleoperators and Virtual Environments* (MIT) 19 (4): 291–301. doi.org/10.1162/PRES_a_00005.

de la Peña, Nonny. 2017. "Towards behavioral realism. Experiments in immersive journalism". In *i-Docs. The Evolving Practices of Interactive Documentary*, edited by Judith Aston, Sandra Gaudenzi, Mandy Rose, 206-221. New York, Chichester: Columbia University Press.

De Marinis, Marco. 1982. *Semiotica del teatro. L'analisi testuale dello spettacolo*. Milano: Gruppo editoriale Fabbri, Bompiani, Sonzogno, Etas S.p.a.

Deleuze, Gilles and Felix Guattari. 2017/1980. *Mille Piani [Mille Plateaux]*. Translated by Giorgio Passerone. Napoli-Salerno: Orthotes.

Dinkla, Söke. 2002. "The Art of Narrative. Towards the Floating Work of Art". In *New Screen Media. Cinema/Art/Narrative*, edited by Martin Rieser and Andrea Zapp, 27-41. London: British Film Institute Publishing.

Dovey, Jon. 2002. "Notes Toward a Hypertextual Theory of Narrative". In *New Screen Media. Cinema/Art/Narrative*, edited by Martin Rieser and Andrea Zapp, 135-145. London: British Film Institute Publishing.

Eco, Umberto. 2020. *Lector in fabula. La cooperazione interpretativa nei testi narrativi*. Milano: La nave di Teseo.

Eco, Umberto. 1997/1962. *Opera Aperta [Opera Aperta]*. Milano: Bompiani.

Ehrssonlab. 2012. "The Barbie-doll illusion featured on Discovery Channel". Youtube October 4, 2013. Accessed July 30, 2023. youtube.com/watch?v=ZRAHJt8YMMY.

Event Lab (Mel Slater)."Home". Event Lab. Accessed July 30, 2023. event-lab.org/.

Export, Valie. 2003. "Expanded Cinema as Expanded Reality". Peter Tscherkassky & the Austrian Avant-Garde. Accessed April 14, 2023. sensesofcinema.com/2003/peter-tscherkassky-the-austrian-avant-garde/expanded_cinema/.

Fida, Rosella. 2016. "Futur antérieur" Accessed July 30, 2023. rosellafida.com/futurant%C3%A9rieur.

International Rescue Committee. 2015. "What's in my bag". Medium. Accessed July 30, 2023. medium.com/uprooted/what-s-in-my-bag-758d435f6e62.

Galloway, Dayna, Kenneth B. McAlpine, and Paul Harris. 2007. "From Michael Moore to JFK Reloaded: Towards a working model of interactive documentary". *Journal of Media Practice* 8(3): 325-339. doi.org/10.1386/jmpr.8.3.325_1.

Galloway, Dayna. 2013. "Establishing Methodologies for the analysis and development of interactive documentary". Doctoral Thesis, University of Abertay Dundee. core.ac.uk/download/pdf/141567585.pdf.

Gaudenzi, Sandra. 2013a. "The Living Documentary: from representing reality to co-creating reality in digital interactive documentary". Doctoral Thesis, Goldsmiths (Centre for Cultural Studies), University of London. doi.org/10.25602/GOLD.00007997.

Gaudenzi, Sandra. 2013b. "The Interactive Documentary as a Living Documentary". *Doc On-line* 14: 9- 31. doc.ubi.pt/14/dossier_sandra_gaudenzi.pdf.

Grau, Oliver. 2003. *Virtual Art. From Illusion to Immersion*. Cambridge, Massachusetts – London: The MIT Press.

Grierson, John. 1960/1946. *Documentario e realtà [Grierson on Documentary]*. Translated by Fernaldo di Giammateo. Roma: Bianco e Nero.

Grosz, Elisabeth. 2008. *Chaos, territory, art. Deleuze and the Framing of the Earth*. New York: Columbia University Press.

Haraway, Donna J.. 2018/1991. *Manifesto cyborg. Donne, tecnologie e biopolitiche del corpo [A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century]*. Translated by Liana Borghi. Milano: Feltrinelli.

Haraway, Donna J.. 2015. "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin". *Environmental Humanities* 6: 159-165. doi.org/10.1215/22011919-3615934.

Haraway, Donna J. 2019/2016. *Chthulucene. Sopravvivere su un pianeta infetto [Staying with the Trouble: Making Kin in the Chthulucene]*. Translated by Claudia Durastanti and Clara Ciccioni. Roma: Nero Editions.

Haraway, Donna J.. 2019/1992. *Le promesse dei mostri. Una politica rigeneratrice per l'alterità inappropriata [The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others]*. Translated by Angela Balzano. Bologna: DeriveApprodi.

Herzog, Werner. 1999. "Minnesota Declaration: Truth and the Documentary Cinema 1999". Walker Art Center. Accessed January 22, 2023. walkerart.org/magazine/minnesota-declaration-truth-documentary-cinema-1999.

Heylighen, Francis, and Cliff Joslyn. 2001. "Cybernetics and Second-Order Cybernetics". *Encyclopedia of Physical Science & Technology (3rd ed.)*, edited by R.A. Meyers, 1-24. New York: Academic Press. kriso.ee/db/9780122274107.html

Jarry, Alfred. 1911. *Gestes et opinions du docteur Faustroll, pataphysicien*. Paris: Eugène Fasquelle, Éditeur.

Jenkins, Henry. 2007. "Transmedia Storytelling 101". Henry Jenkins. Accessed July 25, 2023. henryjenkins.org/blog/2007/03/transmedia_storytelling_101.html.

Jenkins, Henry. 2011. "Transmedia 202: Further Reflections". Henry Jenkins. Accessed July 25, 2023. henryjenkins.org/blog/2011/08/defining_transmedia_further_re.html.

Kac, Eduardo. 2023. "Eduardo Kac". Eduardo Kac. Accessed July 30, 2023. ekac.org/.

Kac, Eduardo, ed. 2009. *Signs of life. Bio Art and Beyond*. Cambridge, MA: MIT Press.

Krauss, Rosalind. 1979. "Sculpture in the Expanded Field". October 8:30-44. doi.org/10.2307/778224.

Kwastek, Katja. 2013. *Aesthetics of Interaction in Digital Art*. Cambridge, MA: MIT Press.

Manovich, Lev. 2001. *The Language of New Media*. Cambridge, MA: MIT Press.

Mazali, Tatiana, and Vanessa Vozzo. 2019. "Immersiveness and interactivity in documentary storytelling. The Apnea case study." *DigitCult, Scientific Journal on Digital Cultures* 4(3): 27–38. [doi:10.4399/97888255301554](https://doi.org/10.4399/97888255301554).

Mignonneau, Laurent and Christa Sommerer. n.d. "Home page". Interface Culture UFG. Accessed July 30, 2023. interface.ufg.ac.at/christa-laurent/.

MIT Open Documentary Lab. 2012. "3/12/12 The new arts of documentary summit". MIT Open Documentary Lab. Accessed January 23, 2023. opendoclab.mit.edu/new-arts-of-documentary-summit/.

MIT Open Documentary Lab. n.d. "About". Accessed January 25, 2023. opendoclab.mit.edu/about-3/.

Molecular Biotechnology Center (MBC). 2023. "The Centre". Università di Torino Molecular Biotechnology Center (MBC). Accessed July 28, 2023. mbc.unito.it/en/centre.

Murray, Janet H. 2020. "Virtual/reality: how to tell the difference". *Journal of Visual Culture* 19(1): 11-27. doi:10.1177/1470412920906253.

Murray, Janet H. 2012. *Inventing the medium. Principles of Interaction Design as a Cultural Practice*. Cambridge, MA: The MIT Press.

Murray, Janet H. 1997. *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. Cambridge, MA: The MIT Press.

Nano Supermarket. n.d. "Nano Supermarket". Nano Supermarket. Accessed July 30, 2023. nanosupermarket.org/.

National Film Board of Canada. 2023a. "This is not a ceremony". National Film Board of Canada. Accessed August 3, 2023. nfb.ca/interactive/notaceremony/?interactive-hp_en=feature_1&feature_type=w_interactive.

National Film Board of Canada. 2023b. "The Enemy". National Film Board of Canada. Accessed August 3, 2023. nfb.ca/interactive/the_enemy.

National Film Board of Canada. 2023c. "The Enemy". National Film Board of Canada. Accessed August 3, 2023. mediaspace.nfb.ca/epk/the-enemy/.

National Film Board of Canada. 2017. "The Enemy". National Film Board of Canada. Accessed August 3, 2023. theenemyishere.org/.

Nelson, Theodor Holm. 1982. "A new home for the mind." *Datamation* (28): 168-173. librarytechnology.org/document/3136/.

Nelson, Theodor Holm. 1965. "Complex information processing: a file structure for the complex, the changing and the indeterminate." *ACM '65: Proceedings of the 1965 20th national conference*, 84-100. doi:10.1145/800197.806036.

Nishida, Jun et al. 2019. "Egocentric Smaller-person Experience through a Change in Visual Perspective." *CHI Conference on Human Factors in Computing Systems* 696: 1–12. doi:10.1145/3290605.3300926.

Noema Staff. n.d. "Surprize 4 – What is life?". Noema. Accessed August 3, 2023. noemalab.eu/memo/events/surprize-4-what-is-life/#eng.

Officine Sintetiche. "About". Officine Sintetiche. Accessed August 3, 2023. officinesintetiche.it/?page_id=3605&lang=en.

Pinotti, Andrea. 2020. *Alla Soglia dell'immagine. Da Narciso alla realtà virtuale*. Torino: Einaudi.

Pizzo, Antonio, Vincenzo Lombardo, and Rossana Damiano. 2021. *Teorie e pratiche del racconto dagli ipertesti all'Intelligenza Artificiale*. Roma: Dino Audino Editore.

Przybylski, Andrew K., Murayama, K., DeHaan, C. R., and Gladwell, V. 2013. "Motivational, emotional, and behavioral correlates of fear of missing out". *Computers in Human Behavior*, 29(4): 1841-1848. doi:10.1016/j.chb.2013.02.014.

Rancière, Jacques. 2022/2000. *La partizione del sensibile. Estetica e politica [Le partage du sensible: Esthétique et politique]*. Translated by Francesco Caliri. Bologna: DeriveApprodi.

Rieser, Martin, and Andrea Zapp. 2002. "Foreward. An Age of Narrative Chaos?." In *New Screen Media. Cinema/Art/Narrative*, edited by Martin Rieser and Andrea Zapp, xxv-xxvii. London: British Film Institute Publishing.

Rose, Mandy. 2017. "Not media about, but media with: co-creation for activism" In *i-Docs. The Evolving Practices of Interactive Documentary*, edited by Judith Aston, Sandra Gaudenzi, Mandy Rose, 49-65. New York, Chichester: Columbia University Press.

Rueb, Teri. 2017a. "Teri Rueb in Politecnico di Torino". Vimeo November 24, 2017. Accessed July 29, 2023. vimeo.com/244339085.

Rueb, Teri. 2017b. "Of land and dreams". Teri Rueb. Accessed July 29, 2023. terirueb.net/of-land-and-dreams-2017/#.

Slater, Mel. 2009. "Place illusion and plausibility can lead to realistic behavior in immersive virtual environments". *Philosophical Transactions of the Royal Society B* 364: 3549–3557. doi:10.1098/rstb.2009.0138.

Solé, Ricard. 2011. "Biological complexity". In *Christa Sommerer and Laurent Mignonneau. Living Systems*, 14-27. Barcelona: ACTAr/Arts Santa Mònica.

Sonnen, Caspar. 2022. "Our main focus is to explore the art of reality" by Mathieu Gayet. XR Must Magazine. Accessed January 25, 2023. xrmust.com/xrmagazine/caspar-sonnen-idfa-doelab/.

Spyridou Lia-Paschalia and Dimitra L. Milioni. 2019. "Interactive Journalism". *The International Encyclopedia of Journalism Studies*, 1-5. doi: 10.1002/9781118841570.iejs0133.

S+T+Arts. 2021. "STARTS prize for social good". S+T+Arts. Accessed July 28, 2023. starts.eu/article/detail/starts-prize-for-social-good/.

The Odin. 2023. "The Odin". The Odin. Accessed July 30, 2023. nanosupermarket.org/.

Tsao, Evangeline. 2019. "Telling refugees' stories: artistic representations of and engagement with migration experiences". Discover Society. Accessed July 28, 2023. archive.discoverociety.org/2019/11/06/telling-refugees-stories-artistic-representations-of-and-engagement-with-migration-experiences/.

Uricchio, William. 2022. "MIT Open Documentary LAB: William Uricchio". YouTube December 20, 2022. Accessed January 23, 2023. youtube.com/watch?v=TsSTppmjc0o.

Uricchio, William. 2017. "Things to Come: The Possible Futures of Documentary from a Historical Perspective". In *i-Docs. The Evolving Practices of Interactive Documentary*, edited by Judith Aston, Sandra Gaudenzi, Mandy Rose, 191-205. New York, Chichester: Columbia University Press.

Uricchio, William. 2019. "Re-thinking the social documentary". In *The Playful Citizen*, edited by René Glas et al., 73-91. Amsterdam: Amsterdam University Press.
doi.org/10.1515/9789048535200-005.

Virtual Reality Laboratory (Hiroo Iwata). n.d. "Virtual Reality Laboratory". Virtual Reality Laboratory. Accessed July 30, 2023. vrlab.esys.tsukuba.ac.jp/Vozzo.

Vozzo, Vanessa. 2023a. "Vanessa V". Vanessa V. Accessed July 30, 2023. vanessav.net.

Vozzo, Vanessa. 2023b. "Booklet". Vanessa V. Accessed July 30, 2023. vanessav.net/body/wp-content/uploads/2020/10/APNEA_Booklet.pdf.

Vozzo, Vanessa. 2023c. "Missing Out"(trailer). YouTube March 30, 2021. Accessed July 30, 2023. youtu.be/Z7X0YbhgfyQ.

Vozzo, Vanessa. 2023d. "Missing Out". Circolo del Design. Accessed July 30, 2023. circolodeldesign.it/whats-on/programma/missingout.

Vozzo, Vanessa. 2023e. "Photosynthetic You". Ars Electronica. Accessed July 28, 2023. ars.electronica.art/planetb/de/kunstuni-workshop/.

Vozzo, Vanessa. 2022a. "Photosynthetic Me Photosynthetic you". In *Surprise 4 – What is Life?*, edited by Roberta Baldaro, Pier Luigi Capucci, Luca Cesari, Noa Pane, Gianluca Vita, 41-45. Ravenna: Noema Media & Publishing.

Vozzo, Vanessa. 2022b. "Tutorial Photosynthetic Me". YouTube December 6, 2022. Accessed July 30, 2023. youtu.be/j2UdWBSbHGg.

Vozzo, Vanessa. 2016b. "Apnea". RAI, Radio televisione italiana. Accessed July 30, 2023. rai.it/raicinema/news/2020/12/Between-Art-and-Virtual-Reality-ad349531-ccd2-4ec4-83ab-fe1537e5ee42.html.

Weibel, Peter. 2003. "Expanded Cinema, Video and Virtual Environments", in *Future Cinema: The Cinematic Imaginary after Film*, edited by Jeffrey Shaw and Peter Weibel, 110-125. Cambridge, MA: The MIT Press.

Weibel, Peter. 2002. "Narrated Theory. Multiple Projection and Multiple Narration (Past and Future)". In *New Screen Media. Cinema/Art/Narrative*, edited by Martin Rieser and Andrea Zapp, 41-53. London: British Film Institute Publishing.

Weibel, Peter. 1997. "Jeffrey Shaw: A User's Manual". In *Jeffrey Shaw—A User's Manual: From Expanded Cinema to Virtual Reality [Jeffrey Shaw—Eine Gebrauchsanweisung: Vom Expanded Cinema Zur Virtuellen]*, edited by Jeffrey Shaw, Manuela Abel, Anne-Marie Duguet, Heinrich Klotz, Peter Weibel, 9-19. Karlsruhe: ZKM/Zentrum für Kunst und Medien.

Wikipedia. 2023. "Interactive storytelling". Wikipedia. Accessed January 29, 2023. en.wikipedia.org/wiki/Interactive_storytelling.

Witzgall, Susan. 2011. "Art as an open system. Complexity and Interaction in Art since 1960". In *Christa Sommerer and Laurent Mignonneau. Living Systems*, 28-42. Barcelona: ACTAR/Ars Santa Mònica.

Youngblood, Gene. 1970. *Expanded Cinema*. New York: P. Dutton & Co.

Youngblood, Gene. 1989. "Cinema and the Code". In *Leonardo Supplemental Issue. Computer art in context: 1989 SIGGRAPH art show catalog*, edited by Mark Resch, executive editor, executive editor Roger F. Malina, 27-30. Berkeley: Leonardo.



CC BY-NC-ND 4.0 International
Namensnennung - Nicht-kommerziell - Keine Bearbeitung 4.0 International