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CENTRO UNIVERSITÁRIO DE LISBOA

**ESCOLA DE COMUNICAÇÃO, ARQUITETURA, ARTES E TECNOLOGIAS
DA INFORMAÇÃO**

PRODUÇÃO E TECNOLOGIA DO SOM

**CAN WE THINK BEYOND IMMERSION?
AN IN-DEPTH LOOK AT THE CATEGORIES OF
PRESENCE
PRACTICAL INVESTIGATION IN SOUND POST-
PRODUCTION**

Dissertação apresentada a provas públicas para a obtenção do grau de Mestre em Produção e Tecnologia do Som, orientada pelo Professor Doutor Luís Cláudio Ribeiro.

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Abstract

The motivation behind this thesis and its associated research stems from a personal curiosity, driven by my role as a young practitioner in the field of sound post-production, with a particular focus on sound design and the re-recording mix stages. It is a singular idea that has directed my inquiry, a concept that has matured during the analysis of diverse audiovisual works, ultimately crystallizing into a central question explored in this research endeavor. At its core, this investigation emanates from a sense of perceptual crisis, a phenomenon that resonates deeply with our contemporary zeitgeist—a crisis characterized by the overwhelming nature of auditory experiences. This critical exploration commenced from the premise of sound's role in shaping and exacerbating a perceptual overwhelm. The study's inception, rooted in the concept of immersion (as underscored by its etymological origins), provided a foundational point for this journey. Immersion, as a constant, adapts its nature according to individual perceivers, resulting in an all-encompassing concept that has become scattered across numerous relationships and dispersed within the realm of indeterminacy. This issue arises from the intricate theoretical complexity and practical simplicity of the immersive experience. Although the sense of immersion feels natural and embodied, the most basic questions surrounding its essence prove to be exceedingly complex. However, an essential question arises: is immersion alone sufficient to encapsulate the breadth and depth of audiovisual experiences in the realm of sound?

The proposal posits that immersion encompasses diverse categories and complexities that intertwine and sometimes contradict each other, leading to the use of the same term to define disparate concepts. The presented stance suggests that the term "immersion" is often misapplied, and in certain instances, "presence" may be a more appropriate descriptor. The argument put forth revolves around the idea that sustained and intense sensory immersion, with an abundance of stimuli and a lack of moments of stillness or floating, may lead to a point of submersion or sensory anhedonia. The study aims to delve into the notion of "post-immersion" as proposed by Chattopadhyay (2021), which serves as an investigative tool to gain a deeper understanding of the aesthetics of immersion and site presence in sound and spatial narratives. By employing this conceptual framework, the research will explore the relationship between immersion and presence, particularly focusing on how narrative elements within sound and spatial design contribute to the overall experience. To bolster its arguments, the proposal intends to incorporate case studies and a personal model that bridge the gap between practical applications and the theoretical concepts developed. These case studies will serve as unifying examples, connecting the practical framework to the conceptual framework.

Table of contents

Abstract.....	2
Table of contents	3
Introduction.....	5
Methodology.....	6

Part I - Theoretical framework

Chapter 1: Immersion, Presence and others - *unbundling and differentiation*

WHAT?

1.1 The Three dimensions of immersion and presence.....	8
1.1.1 System immersion.....	10
1.1.2 Sensory immersion.....	13
1.1.3 As a response to narrative contents.....	15
1.1.4 Other categories of immersion and presence.....	18
Concluding discussion.....	19

1.2 Theories of Presence.....	21
1.2.1 Spatial presence.....	23
1.2.2 Poetic presence.....	25

WHERE?

1.3 Case studies.....	30
1.3.1 Sonic symphony of social realities: Exploring immersive continuity in Roma (2018).....	30
1.3.2 Sonic immersion in Gravity (2013): Diegetic silence and spatial transportation phenomena.....	33

Paragraph conclusion and personal thoughts.....	38
--	-----------

Part II - Practical framework

Chapter 2: Sound as interplay - an adaptation of existing models.....40

WHY?

2.1 Sound design thinking.....	44
2.2 Post-immersion.....	46

HOW?

2.3 Sonic macro-processes: The dynamics of accumulation.....	51
and multiplication	

2.4 Spatial relations between sound “categories” in shaping narrative environment.....	54
2.5 Superimposition, clarity within density, and the interplay of macro and micro elements.....	59
2.6 Analytical integration: Bridging sonic thinking and the Immersion-Presence paradigm.....	61
Chapter 3: Practical inquiry: Exploring personal endeavours.....	64
3.1 Arrival (2016) - Re-sound Design: Resounding inner and outer space through sonic expansion and contraction.....	65
3.1.1 Narrative immersion and processes of accumulation and multiplication.....	65
3.1.2 Conceptual and practical framework blending together.....	67
3.1.3 Spatial relation and superimposition in the presence framework.....	68
3.2 O sol não nasce ao norte (2023) Monica de Miranda - Exhibition at Sabrina Amrani Gallery.....	71
3.2.1 System and narrative immersion.....	71
3.2.2 Personal endeavours: Roles, responsibilities, and hurdles.....	72
3.3.3 Spatial and Poetic presence.....	73
Conclusion.....	75
Glossary.....	78
Bibliography.....	80

Introduction

Background: In our ever-evolving reality, the pursuit of immersive experiences has become paramount. In the realm of sound, this aspiration has propelled us into the era of Digital surround technology, epitomized by Dolby's Atmos system, and Digital Theater Systems (DTS), among others. These systems, while increasingly prevalent and intricate, share a common goal: to transport us into a hyper-realistic realm. Immersive technologies are forging a new aesthetic frontier that will fundamentally redefine the human-technology relationship. Within this dynamic landscape, B. Chattopadhyay introduces the concept of "Post-immersion," which seeks to redefine the relationship between perceivers and their sensory encounters.

Problem/Hypothesis: As immersion gains traction, an array of terms emerges, including presence, involvement, plausibility, entanglement, and others leading to a dearth of a single comprehensive encompassing term. The distinction between immersion and presence hinges on the role of technology in the experience. "Immersion" encompasses four distinct qualities linked to the system, perceptual response, narrative, and challenges. In contrast, "presence" has been dissected through various dimensions, striving to define it as "the perceptual illusion of non-mediation" (Lombard and Ditton, 1997). Researchers such as Biocca F. (2003), Västfjäll D. (2003), Professors Waterworth (2001), Nilsson N.C. & Nordahl R. (2016), and Mäyrä F. & Ermi L. (2005) have conducted numerous studies to quantify presence and immersion, yet a consistent measure or method applicable across all contexts and media remains elusive. The absence of a unified theory has spawned conflicting ideas and multiple theories, shedding light on the intricate concepts of presence and immersion. Moreover, the discourse surrounding "manufactured presence" versus "poetic presence" emerges (Chattopadhyay, 2021). At its core, this critique draws inspiration from acoustic ecology, aiming to strike a delicate balance between the immersive potential of sound and narrativity. Instead of dismissing immersion, it seeks to explore its communicative prowess concerning poetic and spatial presence. The boundaries of the off screen have also always been manipulated with stereo format but with the introduction of surround sound there has been a greater amount of work using the ability of the technological system to expand the narrative even further beyond the visible and with greater precision in source location. This evolution offered audiences a more realistic representation of augmented spatiality, providing a directional and immersive auditory experience, thereby amplifying their sense of site presence within the narrative (Chattopadhyay, 2021)

Research aims: This investigation aims to analyze and elucidate the concepts of sonic presence and immersion in the cinematic domain, recognizing their pivotal role in the creative dimension of sound design and re-recording mixing. This thesis presents a model in which immersion and presence are not mere byproducts of the medium's technological properties but phenomena whose definitions transcend the presentation of densely spatialized sound content. The focus leverages an approach to immersion through the creation of spatial micro and macro articulations and compositional strategies that enhance the sound narrative. As we delve into the phenomenon of presence, we foster a discourse not solely concerned with the expansion of spatial space but also with its proximity.

This paper delves into the foundational concepts proposed by Chattopadhyay (2014, 2021), pondering the power of presence, the allure of immersive experiences, and the potential of **narrative environments**. Through an interdisciplinary exploration, this paper aims to uncover and redefine a personal approach, where the boundaries of immersion and presence intertwine.

Methodology

The research is divided into two distinct yet interrelated parts. The first part lays the foundation through a comprehensive literature review. The initial chapter within this conceptual framework investigates three diverse approaches to immersion, drawing from the latest VR literature. These perspectives include immersion as a property of the system, as a perceptual response to that system, and as a response to narrative contents. The second chapter shifts towards an exploration of presence, drawing from the theories of Biocca (2003), Waterworth (2001), Chattopadhyay (2014, 2021), and Gumbrecht (2010).

Gumbrecht's approach emphasizes the essence of presence, highlighting its bold proximity and recognizing an oscillatory movement in the creation of this state—the interplay between presence-in-density and presence-in-absence (Murch, 2005) within the formation of an immersive space.

The chosen methodology relies on cross-case comparisons, rooted in a comparative analysis of various research perspectives. This approach aims to foster dialectical pluralism by considering the diverse viewpoints on the topic and subsequently linking these research findings to the realm of sound studies. The research design is flexible and incorporates an intrinsic link between the research process and the creative journey. A triangulation approach is employed, involving the interplay between the phenomenon, context, and the interaction with the research subject. In implementing the theoretical research, a practice-based approach is embraced, executed through the re-sound design of a film scene (specifically, "Arrival" 2016 directed by D. Villeneuve) and an exhibition in which I actively participated while crafting this thesis ("O Sol Não Nasce ao Norde" in 2023).

The main methodology used is Design thinking (DT)¹. DT is a non-linear methodology that sees a human-centred process as a means of creative problem-solving. The human-centred approach that DT uses, works on the building process of ideating, determining and creating, not just a direct response (problem-solution) but a modular non-linear integration and creation. The emphasis is posed on meaningful creation with a later integration of technological or economic shape.

The thesis will follow those modules of empathise, define, ideate, prototype and test.

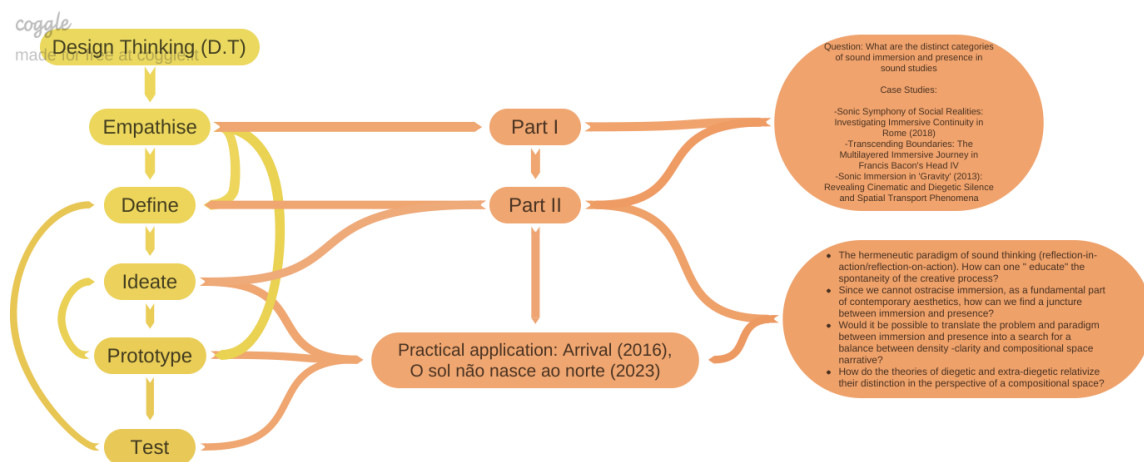


Figure 1: Methodological map (HPI D-School, n.d)

¹ HPI D-School (n.d) <https://hpi.de/en/school-of-design-thinking/design-thinking/what-is-design-thinking.html>

PART I

Chapter I

Immersion, Presence and others - *unbundling and differentiation*

“The tension between body and screen becomes an emotional and cognitive Tool” (Morse, 1999, p.64)

1.1 The three dimensions of Immersion

When delineating an encounter as “immersive”, what nuances does this term encompass? The contemporary landscape boasts an array of technologies, including VR and augmented reality, evident in the surging of experiences such as the popular Van Gogh exhibition² and augmented reality centers like Avatar Virtual Reality.³ Nevertheless, the label “immersive” extends beyond VR technologies, finding application in films, an example is the latest Avatar “The Ways of Water” (2023). But even films such as the Lumière brothers' “L'arrivée d'un train en gare de La Ciotat” (1896) possessed an immersive quality to the extent that it gave rise to legends of audiences running out of the theatre. We can define a film as immersive not only from a technological perspective but also from a narrative standpoint. Even older films can be considered immersive when viewed through the lens of narrative engagement. This observation underscores the cultural embeddedness of the term “immersion”. Thus, what defines it, and what are its various facets?

We begin our journey on the lace of the triangle where we see these two terms placed; immersion and presence. The initial definition categorized immersion in relation to technology, viewing it as an objective reality delivered by technological means. However, as we delve deeper, new questions will emerge, aim at comprehending immersion not as a technological endowment, but as a subjective experience unique to each individual. Immersion is a multi-perceptual phenomenon; the more senses engaged, the deeper the sense of immersiveness. This discovery was a significant milestone, yet it also emphasized the need for precision in terminology. Generalizing the term “immersion” proved inadequate, urging us to specify the “subject” to which it referred - be it sensory immersion, system immersion, and so forth. Alternatively, we considered the use of different terminology, such as “involvement” or “absorption,” to convey these nuanced effects more accurately. It became evident

² “Van Gogh: The Immersive Experience,” Fever, (2021), last opening 08/09/2023, "<https://www.youtube.com/watch?v=dZkQSjZYsgc>"

³ <https://roma.avatarvr.it/v2/>

throughout the journey that **we can not dissect the concept of presence without grappling with the notion of immersion**. The two concepts are intrinsically linked, but the hues in which they overlap can not define a unique phenomenon.

The utilization of Francis Bacon's painting, Head IV, as a visual example serves as a means to comprehend the intricacies inherent in those concepts. It is particularly fascinating to observe how, akin to a series of distinct frames, the painting encompasses different layers. Beginning with the outermost frame, it delimits the boundaries of the composition itself, subsequently extending its influence to delineate the **system** we are addressing. This overarching system branches out into smaller **microsystems** that intricately build upon one another. The relations of the microsystems within the painting's layers contribute to the overall experience. They encapsulate various elements such as forms, colors, and **spatial** relationships, each serving as a constituent part of the intricate visual **dialogue**. As each frame or microsystem unfolds, it contributes to the construction of a broader **narrative**, expanding the viewer's understanding of the system at hand. Through this cumulative process, the viewer is invited to delve deeper into the painting's visual complexity, unravelling its subtleties and uncovering new layers of meaning.

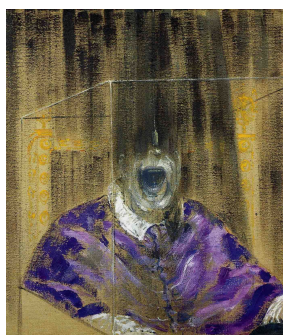


Figure 1: Francis Bacon HEAD IV ⁴

The exploration of immersion and spatial presence, particularly within Francis Bacon's painting, Head IV, reveals a dimension of artistic experience that transcends traditional boundaries. Within this artwork, three primary components emerge: the human figure, the enclosing cube, and the vertical strokes that constitute a background of sorts. The human figure within the painting is confined within the cube, a deliberate choice by Bacon to direct the viewer's attention towards the isolated figure and the framed space it occupies. However, the body lacks a clear definition, allowing the open mouth, as the most expressive element, to seize the viewer's primary focus. This strategic shift in attention towards the mouth illuminates its role as an inner point of interest. The transformation highlighted the mouth's ability to harmonize and connect with the other components and layers, ultimately

⁴ https://arthive.com/it/francisbacon/works/397752~Capo_IV

erasing any pre-established hierarchical structure among them. This resonance is generated by the expressive power of interrelation. Through the intricate interplay of visual elements, Bacon's artwork express the power of art to transport us to alternate relation and resonance between layers, challenge our perception of space, and evoke a profound sense of presence of elements that extends beyond the first 'cage'.

1.1.1 System immersion

The term "immersion" can be metaphorically interpreted as being immersed with the body in a liquid.⁵ The key distinction lies in how immersion is interpreted, particularly this first case sees immersion as a property of the technological system. To illustrate this concept, I draw upon the research of Slater (2003), whose theories frequently resurface in various other approaches. Slater employs an analogy to shed light on the perplexity surrounding the terms "immersion" and "presence":

"I am making the distinction here similar to that in colour science. A colour can be described objectively in terms of a wavelength distribution. However, the perception of colour is an entirely different matter - and includes the notion, for example, of metamers, where objectively different wavelength distributions are perceived as the same colour by human observers. So immersion is analogous to 'wavelength distribution' - in principle it can be objectively assessed (though we may not always know how to do this). Following through the analogy with metamers, different immersion systems may have indistinguishable perceptual impacts on people in terms of presence. If immersion is analogous to wavelength distribution in the description of colour then 'presence' is analogous to the perception of colour. Presence is a human reaction to immersion." (Slater, 2003, p. 2)

Immersion is presented as an objective dimension that is intrinsically tied to the technological system, it is viewed as something that can be measured and qualified based on technical specifications. Immersion, as described by Slater (2003), is essentially what the technology or system delivers from an entirely objective standpoint.

The example of different surround sound technologies illustrates this well. Watching a movie with computer speakers versus experiencing it in a cinema equipped with advanced sound systems like Dolby Atmos or DTS can result in varying levels of immersiveness. In the article "Knocking at the door of cinematic artifice: Dolby Atmos, challenges, and opportunities" by G. Sergi (2013), the Dolby white paper opens with a quote: "Dolby Atmos achieves unprecedented levels of audience immersion and engagement" (Dolby Laboratories

⁵ Bápisma, "immersion", also seen as a ritual that sees immersion in water as a symbol of purification and rebirth; through this practice the individual travels a path of awakening.

2012). This quote distinctly articulates the company's objective of revolutionizing immersive cinema technologies and delivering a "completely new listening experience" (Sergi, 2013). Atmos has asserted its presence in the industry by positioning itself as the new industry standard.⁶ In the opening pages of Sergi's article (2013), Atmos is heralded as a pioneering advancement. This revolutionary quality stems from its technological configuration, effectively resolving issues related to power, range, and directionality that had plagued previous systems. This strong impact in which "the audience can now enjoy a completely new listening experience with enveloping sound that brings the stories on screen more fully to life (Dolby White Paper: Dolby Atmos: Next-Generation Audio for Cinema, 2012)" (Sergi, 2013) modifies and expands the limits of the system, inviting a more real and authentic listening experience of everyday life. Dolby Atmos is grounded in a technical framework and possesses specific technological attributes that express Slater's concept of "system immersion" (Slater, 2003).

While on one hand, we have this significant technological revolution, on the other, another phenomenon emerges - the system's capacity to engender the sensation of 'being there'.

"In many ways, however, Atmos blows all of that particular Pandora's Box open again. The addition of overhead arrays coupled with a uniform sound field produces a soundscape that is no longer easily identifiable as emanating from a number of channels. [...] Unlike previous systems, it is extremely difficult to detect the system boundaries – that drop off point where the artifice becomes all too apparent, betrayed by the technology's limitation." (Sergi, 2013, p.113)

The phenomenon of "being there" achieved by the system is articulated through Slater's concept of "presence" (2003). Presence is characterized as the subjective and human reaction to immersion. It is the individual's perception and experience of being immersed. He metaphorically describes immersion as analogous to the distribution of wavelengths, while presence is compared to the human perception of color. This distinction highlights that even when the same immersive system is employed, the sense of presence can vary among individuals due to their unique reactions and perceptions. In essence, Slater's perspective positions immersion as the objective, system-dependent aspect, while presence is the subjective, human-centered response to that immersion. This separation helps to clarify these terms and their roles in understanding the impact of immersive experiences. It underscores that the sense of presence is not solely dictated by the technology itself but is deeply

⁶ It is important to note that Dolby was not the first within the industry to introduce such technologies. Conversely, other companies had already launched similar technologies before Dolby, including Auro 3D, Isono, and IMM sound (Sergi, 2013).

influenced by how individuals perceive and interact with that technology. From this example, it becomes apparent that the sense of presence is closely tied to immersion in a particular system.⁷ Continuing and elaborating on Slater's concept of presence, he exemplifies this by considering the experience of listening to an orchestra in a quadraphonic sound system. In this scenario, the sense of "wow, it's like being there" should not be conflated with personal enjoyment, individual interests, or emotional reactions; the former relates to the **form** of presence, while the latter pertains to its **content**.⁸ Viewed from this perspective "presence is claimed to have an objective component that is observable in the user's behaviour" (Calleja, 2014).

In the realm of virtual reality, system immersion serves as the sacred cornerstone, offering interactive engagement, 360-degree visual and auditory perception, and the sensation of transcending various challenges. VR, in essence, provides a masterclass in crafting an interactive system so seamless that it becomes a kind of "ritual transformation" (Morse, 1999). This metaphorically mirrors Plato's allegorical cave, where reality is presented as a mere shadow of the true experience.

In concert, the spectator, once chained like a prisoner in Plato's cave, has become a performer, free to make a path charged with meaning through space.[...] The screen, in turn, now marks a cybernetic frontier between the physical and the conceptual, the body and the machine, biotechnology and communications. [...] The embodied relation of screen and user effects the interactor in turn: sensimotor experience calls up "deep metaphor," that is, primary cognitive metaphors like up and down, forward and backward, that engage with the body and its orientation in space. **Mobility and the tension between body and screen becomes an emotional and cognitive tool.**" (Morse, 1999, p.64)

The technological properties of systems such as Dolby Atmos and IMM represent significant examples of the category known as "system immersion". This is an **objective property** that analyzes and incorporates a listening mode considering factors such as the range, expanded directionality, and power of sound sources to create an auditory experience closely resembling natural and **unmediated listening**. The perception of the medium's transparency is not necessarily directly correlated with the degree of system immersion. Instead, various other factors come into play, including what is previously referred to as "presence" or as "sensory immersion".

⁷ This may seem obvious, but many problems have emerged regarding this statute including the so-called 'book problem' (Biocca, 2003); how is it possible to feel immersed and present in a book or in low fidelity systems?.

⁸ Involvement and interest are different from presence because they are to do with content and not form (Slater 2003).

1.1.2 Sensory immersion

The second definition of sensory immersion delves beyond the technical attributes of the medium, it encompasses how the presented product establishes a connection with the perceivers.⁹

Researchers Witmer and Singer (1998) decode immersion as a "psychological state characterised by **perceiving oneself to be enveloped by**, included in, and interacting with an environment that provides a continuous stream of stimuli and experience". Notably, in this perspective, technology takes a subordinate role, with experience taking the forefront.

Immersion vs. Involvement:

Witmer and Singer (1998) differentiate between immersion and involvement. Immersion is described as the sensation of being enveloped by the **surrounding environment**, often more unconscious and perceptual in nature. On the other hand, involvement is characterized by the **individual's attention** and concentration on the experience. In essence, immersion leans towards the physical and perceptual aspects, while involvement is more subjective and cognitive.

Sensory immersion:

Ermi and Mäyrä's (2005) concept of sensory immersion, while initially applied to the gaming experience, offers valuable insights for cinematic and aural immersion. They emphasize the intensity of the aesthetic experience, which can be relevant when considering the role of sound. Their observations suggest that a more complete, detailed, and true-to-life representation of sound can enhance the sense of sensory immersion. This aligns with the idea that sensory immersion is rooted in the fidelity of sensory input, making the audience feel as if they are truly "there".

Factors Influencing Sensory immersion:

Ermi and Mäyrä's (2005) observation that a bigger screen and higher audio quality are often associated with greater system immersion aligns with the idea that technological enhancements contribute to a more immersive experience. Additionally, the concept that increasing the demand for working memory can enhance immersion suggests that a more detailed and complete representation of the auditory environment can lead to a heightened sense of spatial presence (Sensory immersion).

⁹ c. 1300, *perceiven*, "become aware of, gain knowledge of", Online Etymology Dictionary.

The term "audience" is derived from "audientia", which means "to hear". Hearing, in this context, is not an intentional effort; it involves a passive encounter between the person and the sound input. Therefore, I will not frequently use the term "audience" in this thesis. Instead, I prefer to use the term "perceivers". The choice is based on the etymology of "perceive", highlighting the intrinsic and active relation between individuals and their auditory experiences.

To recapitulate, sensory immersion, as described by Witmer and Singer (1998), corresponds to the concept of "presence" (Slater 2003) which relates to the feeling of "being there". From the perspective of Witmer and Singer (1998), the factors that affect sensory immersion align in part with what Slater (2003) identifies as the characteristics of system immersion.¹⁰

- An Oxymoron between sensory immersion and presence-in-absence paradigm

Given these diverse viewpoints on immersion and phenomena correlated, we encounter an oxymoron. The factors that impact sensory immersion primarily revolve around the capabilities of the system and its capacity to replicate a lifelike experience. However, it raises the question of how, in certain instances, sensory immersion can still evoke a sense of "being there" even without advanced technologies like Dolby Atmos. Furthermore, it prompts an inquiry into how the levels of presence and immersion can vary, whether the sonic environment is densely layered or sparse.

The presence in absence paradigm, translatable to the sound-silence paradigm, is seen as an evolution of silence as a sonic space and as "communicative absence" or as "eloquent silence" (Sontag, 1969, p. 11). Schafer's analysis of the role of silence provides further insight:

"Because music represents the ultimate intoxication of life, it is carefully placed in a container of silence. When silence precedes sound, nervous anticipation makes it more vibrant. When it interrupts or follows sound, it reverberates with the tissue of that which is sounded, and this state continues as long as the memory holds it. Ergo, however dimly, silence sound" (p.257).

From this quote we can derive different realities attributed to silence/absence; the First, there is the element of expectation. Second, silence amplifies or invites introspection. Lastly, silence serves as a resonant space and time for memory. In this context, "silence" assumes a significant and decisive role in the process of meaning acquisition. To reconcile this interlude on silence and absence with the insights from the scholars mentioned earlier, it becomes clear, **it is more the detail and the sonic articulation than the density/quantity or true-to-life that have a profound connection to the sense of presence** (Chattopadhyay, 2017). Further

¹⁰ Partly, the factors influencing system immersion, as described by Ermi and Mäyrä (2005), are somewhat connected to the technological property of the system. The emphasis on a "more complete, detailed, and true-to-life representation" underscores the necessity for the system to achieve a high level of fidelity in some cases.

on, these two dimensions of presence (presence-in-density)-(presence-in-absence) will be analyzed more profoundly in the following chapter.

The diverse perspectives presented, while distinct from Slater's approach, converge in how they underscore the amplification of sensory immersion. The primary divergence lies in the terminology used, but it's crucial not to oversimplify these differences. System immersion is heightened due to the immersive system qualities and the sonic articulation of the sonic space, yet the response to the level of system immersion is nuanced and multifaceted. While the earlier definition of system immersion primarily associates immersion with the technological attributes of the medium, the more recent definitions of sensory immersion shift their focus to the relationship between the medium and the perceiver. It transcends being merely a technological quality and instead delves into an intrinsic connection that encompasses various personal levels of significance.¹¹

The significance of this exploration lies in recognizing that no single dimension of immersion should be discredited; each dimension holds its own crucial role.

1.1.3 As a response to narrative content

“ The feeling of being inside a story, completely involved and accepting the world and events of the story as real ” (Adam and Rollings, 2006, p. 30)

Continuing with our discussion, an intriguing insight from Ermi and Mäyrä's research emerged when they interviewed twenty children in 2003 to determine which technological medium they found most immersive (Ermi and Mäyrä, 2005). The noteworthy discovery was that all the children felt more emotionally immersed and engaged when reading a book or watching a movie as opposed to playing video games. As pointed out by Ermi and Mäyrä, this perspective arises because in video games the plot assumes a secondary role, with the focus primarily on the actions and challenges that arise, capturing the individual's attention. Conversely, in the 'passive enjoyment' of a film or book, the plot and the ability to identify with it become the central focus. This suggests that in gaming, the level of challenge shifts the emphasis from involvement (as per Witmer and Singer, 1998) and/or absorption (as per Ermi and Mäyrä, 2005) more toward the action itself rather than the plot. What becomes

¹¹ It's crucial to emphasize that the sense of immersion is culturally intrinsic. For instance, a mono film experience in 1955 could have been highly immersive for the audience of that era. Similarly, a film from 1955 might still be immersive for a viewer accustomed to the Digital surround era. These considerations highlight that the concept of immersion is not inherently tied to the concept of system immersion. Instead, it serves as a nuanced descriptor that objectively measures a system's capacity to envelop the perceptual experience of the perceiver.

evident from these studies is the significant impact that the plot has on enhancing the sense of narrative immersion.

Moving forward, we reference the work of scholar A. McMahan (2003), who introduces another subcategory of presence, known as psychological immersion, which occurs when the audience becomes mentally absorbed in the narrative.

For stories to have the greatest impact, it is crucial for audiences to become fully immersed in them.”The listener-viewer” (Novack, 2022) should be able to detach themselves from the real world and enter the captivating realm created by the authors. This immersive experience can lead individuals to lose awareness of their immediate surroundings and become entirely engrossed in the story. This sensation of being ‘transported’ into a narrative forms the foundation of narrative transportation theory. Essentially, it involves a combination of attention, imagery, emotional engagement, and suspension of disbelief enabling individuals to become deeply absorbed in the fictional world constructed by the story.

- Point of audition

Research conducted thus far has not identified a consistent advantage for any particular medium when it comes to narrative transportation (Braddock & Dillard, 2016; De Graaf, Hoeken, Sanders, & Beentjes, 2012). These findings suggest that the content of the story itself plays the most significant role in capturing and captivating audiences. Narrative transportation shares certain similarities with other immersive experiences. For instance, both identification and transportation serve as mechanisms through which a narrative can shape readers' attitudes and beliefs. Identification occurs when readers can experience the narrative from the perspective of a specific character in the story. In audiovisual media, the importance of identification becomes evident when considering the “point of audition” (Chion, 1994), as the ability to identify with a character's perception serves as the adhesive that subtly binds the viewer to the character. Hence, narratives both audiovisual or textual that stimulate the formation of vivid mental imagery have the potential to amplify the persuasive power of a story.¹²

Current investigations not only focus on the actual emotions elicited by a narrative but also delve into the trajectory of emotional experiences readers undergo as they traverse the story (referred to as emotional flow; Nabi and Green, 2015).

¹² This sentence may be a bit perplexing, but what I intend to convey is that in scenarios where off-screen or on-screen sounds lack precise spatial localization, exhibit dramatic anticipation, or experience delays – essentially, when auditory elements do not synchronize with their visual counterparts – it can significantly impact the perceived flow of the narrative. This, in turn, affects the creation of vivid imagery and the identification of the character's point of audition presented on screen (Chion, 1990, pp. 58-61).

In alignment with Gerrig's perspective, transportation is conceptualized as a convergent process in which all mental systems and capacities converge to center on the events unfolding within the narrative. As a result, individuals may undergo a transformative experience, albeit to some extent, as they embark on the narrative journey (Melanie C. Green and Timothy C. Brock, 2000).

Sound possesses a distinct capacity to elicit emotions, establish mood, and engender a palpable sense of presence (Novack, 2022). When wielded with skill, sound can evoke vivid mental imagery, facilitate audience identification with characters, and heighten the overall narrative experience. It establishes a potent connection between the listener-viewer (Novack 2022) and the story, thereby amplifying the phenomenon of transportation. Researchers delve into the diverse aspects of sound design, encompassing sound quality, spatial audio techniques, cultural factors, spectrography and the synchronization of sound with visual elements. These factors collectively contribute to the transportation experience, exerting influence over audience engagement, emotional responses, and comprehension of the narrative.

- Interplay between sound and narrative immersion

An illustrative example redirects to sound narrative in creating a comprehensive immersive experience, encompassing psychological and perceptual dimensions.

The movie *The Ring* by Gore Verbinski, it is a horror film released in 2002. Horror films make excellent use of immersive narrative sound strategies. The scene we refer to is the initial one until the cluster moment when the television is turned on. The film begins with a melancholy and gloomy area, but the soundscape surrounding it does not fully convey this mood. The dialogue between two girls exudes playfulness, diverting our attention from the gloomy setting. As events unfold, a gradual escalation of suspense unfolds. Later in the film, during a phone conversation between the girl and her mother, the sound atmosphere is not oppressively eerie; rather, it is the visuals that evoke a sense of danger. As the dialogue progresses, ambient sounds gradually diminish, emphasizing the intimacy of the conversation. Due to the psychoacoustic reaction introduced by this strategy, we are compelled to pay increased attention to the dialogue. As a result, we are unaware that the sound environment has disappeared. In the ensuing moment of silence, tension is heightened before an abrupt switch on the television begins. The tension was built with careful evolution within the sound narrative, which allowed for an impactful emotional reaction until the end of the scene when the girl opens the door and sees the television. There is an interplay between sound spatialization and the final climax in this last scene of the prologue (minutes 7.08 to 7.13). The various sounds of the television (with non-harmonic relationships to each other) make micro oscillatory movements between the right, left centre and sideways speakers creating a strong state of disorientation. Until we reach the end of the scene with the same

sound coming from the front speakers (L-C-R) and the frame changes in tandem with the movement. The spatial movement besides creating a strong emotional impact also has the function of a spatial manipulation of the point of audition. Until that point, we were outsiders and mere spectators, but through this concise six-second strategy, we are seamlessly integrated into the diegesis, becoming the ones who are watching the television.

“Space acts as a pivotal element in this rhetorical architecture, since it provides a bridge between real and mythic spaces, such as the space of the screen, the space of the imagination, cosmic space, and literal, three-dimensional physical space. Space implies the possibility of immersion, habitation, and phenomenal plenitude.” (Dyson 2009, p.1)

The aforementioned examples serve to shed light on the intrinsic role of sound in the construction and shaping of narrative. **Sound assumes an active agency in guiding the audience's attention towards pivotal junctures within the narrative, while concurrently establishing a perceptual and spatial immersion that seamlessly integrates with the fabric of the story. Rather than being a mere filler, sound becomes an integral component, intricately woven into the narrative tapestry itself.**

1.1.4 Other categories of immersion

The work of Arsenault (2005), who, in his critique of imaginative immersion, introduces the term “fictional immersion” to describe a type of immersion that does not rely on the exercise of imagination. Particularly noteworthy is his article titled “Dark Water: Spotlight on Immersion”, where the primary goal is to "illuminate the murky, undefined waters into which we dive when we are immersed" (p.1). Cognitive psychology studies have consistently shown that engaging with a media object is never entirely passive, even in a 3D cinematic context. Our minds remain active, constructing cognitive frameworks for the "active creation of belief" (p.2). The use of 'fictional immersion' allows for a broader perspective, encompassing various art forms, from textual storytelling to VR. This kind of Immersion isn't merely a property; it's an effect that occurs. In this context, it represents a suspension, a moment of forgetfulness wherein individuals become deeply absorbed in a narrative, to the extent that the events depicted seamlessly integrate into their reality. It is a suspension and negation of the logic of reality, becoming flexible in the face of the imaginary world presented to us. Arsenault later proposes a study examining different levels of immersion, as conducted by Emily Brown and Paul Cairns (2004). This study parallels Ryan's (2001) classifications:

- Engagement refers to the audience's interest in continuing to watch.
- Engrossment delves into the emotional sphere, reflecting the emotional investment in the narrative, the characters, and more.
- Total immersion, classified under presence, particularly relates to the atmosphere and empathy created in the spatial dimension, akin to feeling as if one is truly there.

Fictional immersion is a newly coined term that can encompass various technological media but leans toward a particular aesthetic experience that doesn't rely solely on the imagination. Experiencing fictional immersion can lead to diverse effects on individuals. It offers entertainment, escapism, and emotional catharsis. Moreover, it holds the potential to cultivate empathy and forge an emotional connection with fictional characters, facilitating personal growth, broadening perspectives, and deepening comprehension of the human condition. Scholars and researchers have devoted their efforts to exploring the phenomenon of fictional immersion and investigating its cognitive and emotional implications. Todd, C. (2012) and Modena, E., & Parisi, F. (2021) and other studies have delved into the factors that either enhance or hinder immersion, including narrative coherence, realism, identification with characters, and the presence of interruptions or distractions. Understanding fictional immersion carries significant implications for narrative psychology, media studies, and the design of immersive storytelling experiences. In summary, fictional immersion epitomizes the profound level of engagement individuals experience when submerged within fictional narratives. It induces a temporary detachment from reality while establishing a profound connection with the narrative world.

- Concluding discussion

The focus carried out is recaptured in the analysis of an experience to which we are constantly drawn. All adults have a universal set of cognitive categories that may be innately determined and independent of the terms used to describe them, "Giving a name" (J. Davidoff, 2006) is, in a sense, materializing and stigmatizing the connection between speech and thought and, consequently, determines the ability to develop a greater degree of perceptual sensitivity in relation to some boundaries and the overlap of them, but also as an exosomatic medium reflecting a subjective reality. "Give a name" of various categories has provided an essential cue for destroying its putative value, which is used more as a linguistic habit than as an enquiry into what the artwork evokes in us and in which dimensions it extends.

Along the way we have dissected the terms immersion and presence (in part), and examined them in their ramifications. We have noted how in the academic field there are numerous recursive interpretations which, although they try to give more legitimacy to these two categories, in the end we have remarked on their overlapping boundaries.

Linguistic gestures of immersion (and other categories) matters because shape the

methodology for studying the phenomena (Florian Freitag, Céline Molter, Laura Katharina Mücke, Helena Rapp, Damien B. Schlarb, Elisabeth Sommerlad, Clemens Spahr and Dominic Zerhoch, 2020).

What appears most striking is not solely the ability to discern the disparities between various forms of immersion and presence, but rather to recognize how these two entities, can be legitimized in their polycentricity.

The evolution of Dolby Atmos is not solely about the immersive technology it employs, but more importantly, it lies in its standardization. The standardization of this technology arises from the necessity of major studios to adopt a system that can be universally applicable. The integration of this new standard necessitates incorporating the system's capabilities into various forms of sound discourse, marking Dolby's evolution as a standard beyond its system immersion capacities. This is the evolution of Dolby as a standard beyond the system immersion capacities - the incorporation of sound discourse from the pre-production until the post-production chain. Directors and writers now find themselves compelled to integrate the expanded spatial dimension of Atmos, establishing an "intersection of narrative planes" (Sergi, 2013) and extending the sonic domain.

“Atmos and other immersive narrative technologies are transforming auditoria into ‘environments’ to be experienced, where screens are but one dimension of a complex articulation of narrative technologies and techniques. [...] no longer just an image to look at; in its place an increasingly sophisticated intersection of narrative planes where sound provides a truly hemispheric aural environment and not simply support to the image on a rectangular screen” (Sergi, 2013)

While one might argue this sentence stating that monophonic or stereo products already provide an hemispheric aural environment and that the system immersion technology are just expanding more an already intrisicate aspect of sound. But as we state before, what makes Atmos such a ‘revolution’ is the integration, attentions, expansion and necessary of sound discourse into the whole process.

Conceptual framework

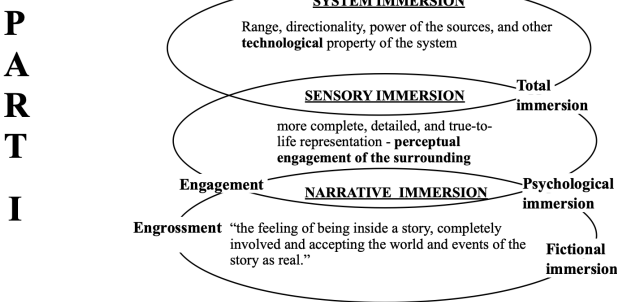


Figure 2, Part I - from chapter 1.1 to 1.5. categories of Immersion

IMMERSION	Definitions	Correlations	Correlations	Correlations
System immersion	Objective level of sensory fidelity- Property of the technology "Let's reserve the term "immersion" to stand simply for what the technology delivers from an objective point of view. The more the system delivers displays (in all sensory modalities) and tracking that preserves fidelity in relation to their equivalent real-world sensory modalities, the more that is "immersive."" (Slater, 2003)	Perceptual Immersion (McMahan, 2003) - Blocking external stimuli		
Sensory immersion	"psychological state characterised by perceiving oneself to be enveloped by , included in, and interacting with an environment that provides a continuous stream of stimuli and experience" (Witmer and Singer, 1998)	More complete, detailed, and true-to-life representation of sound can enhance the sense of presence. (Ermi and Mäyrä, 2011)	Absorption means directing attention to an experience that is brought to mind (Ermi and Mäyrä, 2011)	
As a response to narrative contents	"the feeling of being inside a story, completely involved and accepting the world and events of the story as real." (Adam and Rollings, 2006, p.30)	Narrative transportation (Braddock & Dillard, 2016; De Graaf, Hoeken, Sanders, & Beentjes, 2012).	- Emotional flow (Nabi and Green, 2015). - Psychological immersion (McMahan, 2003)	Narrative immersion into spatial, temporal, and emotional immersion (Ryan, 2003)
Fictional immersion	it represents a suspension, a moment of forgetfulness when we become deeply absorbed in a story, to the extent that the events depicted become part of our real world. It's a suspension and negation of the logic of reality, becoming flexible in the face of the imaginary world presented to us.	Involvement and Absorption (Pine and Gilmore, 2011)	Involvement is characterized by the individual's attention and concentration on the experience. (Witmer and Singer, 1998)	

Figure 3, correlation between type of immersions

1.2 Theories of Presence

“The word “presence” does not refer (at least does not mainly refer) to a temporal but to a spatial relationship to the world and its objects. Something that is “present” is supposed to be tangible for human hands, which implies that, conversely, it can have an immediate impact on human bodies. [...] “production of presence” points to all kinds of events and processes in which the impact that “present” objects have on human bodies is being initiated or intensified. [...] is a relation to the things of the world that could oscillate between presence effects and meaning effects”. (pp. 13-15).

The term Presence as it relates to cinema first emerged in academic circles in 1951 in an article entitled "What is cinema?" (translated into English in 1967) by Filmologists André Bazin in a section entitled "The concept of Presence".¹³ From the very beginning, an attempt was made to relocate the term presence concerning the dimensions of time and space, and it was Bazin who defined this term in relation to "space-time" in a depth perspective. Praesentia "prae esse" - "being at hand", refers to a relationship between two entities facing each other. Gumbrecht H.U (2010) in his book "Production of presence, what the meaning cannot convey" right from the start presses for the word presence to be spatially related:

There are numerous scholars that pursue space-centredness as a characteristic of presence, although the approaches vary. With the improvement of technology and the growth of media studies, the term presence has become part of teleoperation contexts. We refer in particular to Minsky M., who conceived the term telepresence in 1980. The concept of telepresence is not detached from the spatial concept of presence analyzed above and, to quote Minsky, the biggest challenge to developing telepresence is achieving that sense of "being there" (p.45). In 1997, Lombard and Ditton contributed to the identification of six dimensions of presence with an approach that organized presence in its multidimensional essence through systematic methods. As mentioned earlier, presence is a fundamental aspect of the experience, it can take on both convergent and divergent meanings depending on not only the application or area of study but also from one author to another. In fact, Lombard M. (1997) himself asserted that it was impossible to create a unified theory. However, their attempt resulted in the identification of six categories that can be generalised with the concept of "perceptual illusion of non-mediation".¹⁴ In the year 2000, on its website the International Society for Presence Research (ISPR) defined presence as a *psychological state* or *subjective perception* generated by an experience that is filtered through a medium in which the individual's perception fails to accurately comprehend the role technology plays in the experience.¹⁵ From the 20th century onwards, as a result of ongoing development in academia, a large number of dimensions of presence began to emerge, leading to the creation of compound terms. Examples are; "spatial, social, mediated, virtual, immersive, perceived, objective, subjective, physical, environmental, inverse, backward, forward, poetic, self and corporeal presence" (Lombard, and Ditton, 2015).

It is intriguing to observe that, in sound vocabulary, "presence" alludes to the sounds within a tranquil space. The room tone, exceedingly subtle, exposes the vulnerability of, for instance, an unoccupied house, where the "silence" resonates with a profound communicative

¹³ It is interesting to note that the theory developed by Bazin concerning the domination role of images in early cinema, was during the silent period. The Sound period was a transition and an expansion to a realism that opened a spatio-temporal ontology of cinematography.

¹⁴ Which seems to explain more an effect of presence than the phenomenon itself.

¹⁵ This categorization does not delve into the notion of "my mind is in the now, and the now is where my body is now." Self-presence or being present, while a crucial topic in analysing the concept of presence, it is not directly relevant to our research.

quality. Providing presence, as articulated in this section, involves eliciting an embodied reaction to that seemingly "static" space. The notion of presence, as manifested in room tone, is intricately linked to the concept of spatial presence, encapsulating the capacity to evoke the sensation of "being there".

1.2.1 Spatial presence

According to scholars Riva et al. (2004) and Lee (2004) spatial presence occurs when an individual's perception becomes immersed in the stimuli presented by a medium, causing them to feel situated within the environment portrayed by that medium. This perspective underscores the powerful influence of the medium itself in evoking spatial presence. However, there are differing viewpoints; Schubert (2009), and Biocca (2003) suggest that technology is not an absolute prerequisite for experiencing spatial presence. Traditionally, spatial presence is described as the phenomenon that arises in an experience facilitated by technology, often referred to as "mediated presence" (Lee 2004, Sheridan 1992, Zhao 2002). It encompasses the personal sensation of being physically present within a natural environment, which is termed "natural presence" (Steuer, 1992) or "proximal presence" (Zhao 2003). This dimension aligns with the concept of "non-mediation" discussed by Lombard and Ditton in 1997, where individuals experience the sensation of being transported to another space, despite the awareness that their physical location remains unchanged. This phenomenon is articulated as the creation of a subjective experience for the observer, characterized by the inability to **discern the illusion of non-mediation of technology**.¹⁶

The initial factor under analysis is the pivotal role of attention in the formation of spatial logic, which elicits a mechanism of reinterpreting incoming stimuli that supersedes the perceiver's inherent spatial references. In the article "A new conception of spatial presence: once again, with feeling" published in the journal *Communication Theory*, Schubert T. W. (2009) notes two different approaches to spatial presence theories:

- (a) Spatial presence or the sense of being in a place (Physical projection).
- (b) Involvement in the sense of focusing attention on the virtual environment (Psychological projection).

- Spatial attention and spatial update

The most frequently used theories in this field analyse how mental models underlie the experience of Spatial Presence, including Biocca's theory. Biocca (2003) defines the term "evolutionary primacy" to enlarge the theory of presence beyond its relationship to the medium. In order to find a solution to these conundrums, the scholar develops a model that he

¹⁶ "Inability to discern the role of the medium" is a factor very crucial to our analysis.

names "three pole model to shifts of presence", which sees presence as a spatial-centric psychological process conveyed through two movements named *spatial attention* and *spatial update*, which move along three dynamic sources that are; Mental imagery space, Virtual space and Physical space. The changes are defined by the dominant cognitive processes that enable the construction of dynamic and continuously updated spatial mental models. The first cognitive process of **spatial attention** has the function of consciously selecting and focalising the stimuli of spatial cues. If they are conveyed by the motivations, goals and contents of the perceiver, the movement is named **top down** process, if instead the focalisation of attention occurs due to sudden changes in the stimuli from the environment, the movement is named **bottom up** process. Instead, the **spatial update** is mostly unconscious and only sometimes makes use of small conscious intentional processes, it has the role of updating the inner mental model of objects's location and body movement. The spatial update makes a single movement called bottom up cognitive process that has the function of updating the various changes that occur in the surrounding.

In the context of our research, one of the most intriguing aspects is how these two processes are intimately connected with the dynamics of sound. As we further refine our model, specifically the interplay between expansion and reduction, it becomes evident that both bottom-up and top-down processes are essential prerequisites for achieving and orchestrating these movements. Drastic jumps in presence are possible (the bottom up cognitive process in spatial attention) that activate **automatic attention** which is sensitive to strong variation in intensity (Schröger, 1996). This is due to how attention functions may depend on sudden ruptures that attract automatic attention but also depend on gradual processes (**deliberate attention**) (Sá and Tanaka 2019), as Biocca's model pointed out. As we seen so far, the formation of spatial presence is deeply linked to the attentional process. The sound dynamics plays a key role in determining and converging deliberate and automatic attention. Automatic attention is the most widely used sound strategies, it operates on biophysical expectations. The fulfillment or deviation from these expectations determines the modulation of neural activity and, consequently, attentional processes. In contrast, deliberate attention is more prone to personal variations, i.e., perception and personal attentional states can increase or decrease sound detail resolution (Sá and Tanaka 2019). Moreover, the microcosmic aspect of sound dynamics significantly contributes to delineating distinct attentional states that play a vital role in defining spatial presence.

- Formation and Update of Spatial Presence: How Perceivers Construct Cinematic Space

Schubert's (2009) model presents spatial presence as a cognitive sensation that arises as a consequence of unconscious mapping processes. According to Schubert, Spatial Presence evolves within a cyclic interplay of unconscious perceptual feelings and unconscious cognitive feelings. This dynamic movement between these processes engenders the

perception of spatial presence within its spatial dynamics. Differing from the dichotomous model proposed by Slater (2000) which posits the activation of spatial presence as either on or off, Schubert's perspective suggests that the sense of Spatial Presence varies in intensity. This variation arises due to the gradual movement of unconscious process responses that structure the subjective experience of Spatial Presence.

In the context of our research, it's crucial to view Space not as a static entity but as a resonant space where the subjectivity of the observer and the emotional construction intertwine in the creation of what can be defined as cinematic space. As Yuyao Xiang (2022) elucidates, "the subject engages in a dialogue with the space," and as McLuhan (2000) asserts, "human feeling can give rise to space". This interactive, multi-dimensional construction of space possesses flexible and mutable boundaries, which, through the sonic narrative and the active involvement of the observer, engenders a sense of depth and recession, expansion and contraction within the perceptual frame. I find it fascinating to contemplate the dynamic nature of cinematic space, which constantly redefines its boundaries through its relationship with sound and images. It's truly remarkable how something as seemingly rigid as the frame can be molded and shaped by human perception, leading to a continuous ebb and flow of expansion and contraction (Gaudin, 2018). Indeed, the choice of medium undoubtedly exerts a significant influence on the dynamics of this interplay. However, what makes it particularly intriguing is the realization that the medium, while impactful, is not necessarily the foundational element at the core of this phenomenon. It highlights the complex and multifaceted nature of cinematic space, where perception, sound, and images collectively dialogue to its ever-shifting boundaries and spatial presence qualities.

1.2.3 Poetic presence

“The arts are most wonderfully rooted in substance, in the human body, in stone, in pigment, in twanging to gut or the weight of wind on reeds. [...] Which is to say, very plainly, that it is the enterprise and privilege of the aesthetic to quicken into presence the continuum between temporality and eternity, between matter and spirit, between man and ‘the other’” (Steiner, 1986, p.227).

- Presence in arts, presence through absence

Nancy's concept of "birth to presence" and "the vanishing of presence" introduces the idea that presence effects we can experience are always intertwined with absence, as highlighted by Gumbrecht (2010). This perspective suggests that even when we perceive a

strong sense of presence, it is inherently marked by the absence it contains (Gumbrecht, 2010).

This relation is profoundly connected to the intention of art, or as Hirshhorn (Smith, B. L., 2017) expresses in “What absence is made of”:

“I wanted to focus on how artists actually can create a presence through absence,” Jetzer says. “We are living in a material world and art has this incredible capacity to be on one hand material but to also point at phenomena that go beyond the material surface of the artwork”.

Gumbrecht's approach posits that meaning and presence are complementary, and meaning cannot erase the existence of presence. In contrast, the LFO theory distinguishes absence from the a-presence it brings about. This statement implies that when individuals abstract their perceptions to a deeper level of appropriation, they become less present in their perception of stimuli. However, Gumbrecht (2010) challenges this paradigm by asserting that the primary issue lies in the cultural condition of a meaning culture, where meaning tends to dominate presence “effects”. By using the term “effects”, he implies that in a meaning culture, there is an inability to strike a balance between meaning and presence. Thus, when presence does emerge, it often does so in fragmented, intense moments that condense into what he calls “effects”. As members of a meaning culture (as opposed to a presence culture), we need to reemphasize the complementarity between presence and meaning. Gumbrecht (2010) contends that art is a realm where meaning and presence effects can coexist in balance. Through this interplay between absence and presence, we gain a better understanding of the impact of these phenomena in the arts. The concept of presence in absence proves to be especially intriguing, illustrating how the lack of specific stimuli can evoke a profound sense of presence. This is exemplified in our earlier discussion on the room tone, where the absence of overt sounds contributes significantly to the creation of a palpable presence.¹⁷

Gumbrecht teaches us that embodied proximity and the refinement of these experiences are the foundation upon which presence is triggered. In art, we can, albeit with difficulty, perceive the union between presence and meaning (Gumbrecht, 2010).

“by letting them push the distance between us (the subject) and the world (the object) up to the point where the distance may suddenly turn into an unmediated state of being-in-the-world (and I would add, be in touch with it)” (p. 137).

As Chattopadhyay (2020) delves into, the analysis of the potential for multiple interpretations within a more open-ended framework leads us to the emergence of what is referred to as a

¹⁷ Practical example of the subliminal effect of room tone: <https://soundlikenoise.org/2012/03/09/room-tone-and-introjection/>

"poetic presence". This state of heightened presence takes us beyond the boundaries of immediate meaning and the readily available significance of media. It transports us to a domain where the line between the "real" and the realm of mythical entities, as eloquently articulated by Brandon LaBelle (2018), becomes increasingly indistinct. This transcendence goes beyond the realm of mere spatial presence, ushering us into an "associative" or poetic-contemplative state within the minds of listeners and audiences.

- Unveiling the Phenomenology of Presence - the Colliding Dynamics of Presence and Immersion

A fundamental aspect that continually emerges is the duality in various forms (I/space, I/collectivity, I/time, I/body, I/memories, I/medium). These dual correlations, in their dynamic interplay, collisions, convergences, expansions, and detachments, create and erase the various senses of presence.

The cinematic revolution has provided avenues for rethinking time and space. The ability to capture moments gives the illusion of freezing time, movement and proximity, presenting them from fresh perspectives. The concept of the "intensified form of present tense" (Nancy, 1933) offers two lines of thought: one slicing the temporal present into infinitesimal portions oscillating between past and future, the other extending its duration. Thinkers like Bergson point out that we practically perceive only the past (Bernet, 2010), with the pure present representing the invisible progression of the past into the future. However, the experience of presence makes the perception of temporal duration tangible. Time lacks material substance but is inherently condensed in personal perception of "being in the world" and being a part of it. Presence becomes an effect, a constant process of coming into being and becoming that impacts the senses (Nancy, 1933). The temporal fragmentation of this process ensures that presence effects cannot remain static but are determined by moments of intensity, as Gumbrecht (2010) terms them, situational and temporal insularity. It's crucial to clarify that presence is not an essential component of the aesthetic experience, but rather, the presence of "things of the world" forms the core of aesthetic experience.¹⁸ Gumbrecht skillfully excludes the universality of interpretation from aesthetic experience, challenging the structure of the dichotomy between the material and the spiritual. By deconstructing the objective/subjective paradigm, he seeks to establish a new relationship with the things of the world. A post-hermeneutic approach emerges, aiming to circumvent the hermeneutic dominance and reestablish contact with the senses as integral elements of experience.

¹⁸ A very interesting example is the case of the temple; "only the presence of certain things opens up the possibility of other things appearing in their primordial material qualities - and this effect might be considered as the one (and as a part) of unconcealing their being" (Gumbrecht, 2010, p.74)

- Aesthetic experience as a moment of intensity

In this endeavor, presence plays a hovering role precisely because its essence is profoundly linked to meaning, yet always in tension with it (Gumbrecht, 2010).

Gumbrecht, Nancy (1933), and Waterworth's (2001) theory of FSL (Felt Sense of Presence) share this same reasoning. A high state of presence is intricately connected to the duality of stimulus perception.¹⁹

To attain a high state of presence, one must pay meticulous attention to how the stimulus is perceived, representing an outward movement of propagation and observation. On the other hand, the appropriation of the given content involves a movement of compression inward, leading to a state of absence in LFS (Low Felt Sense), a meaning effect in Gumbrecht (pp. 28-40), and an imagery space (Biocca 2003). An aesthetic experience grounded in presence is, therefore, a productive tension between these two poles. It arises when presence is pushed to such an extent that the distance between us and the world is actualized in a state of non-mediation, as explicitly articulated by Gumbrecht.

- Phenomenological connection to “ ‘illusion’ of non-mediation”

In the realm of art, we encounter a delicate equilibrium between immersion, presence, meaning, and absence. Throughout our journey, discussions on the meaning of presence and immersion have unfolded. What has become evident through this endeavor is that we are dealing with two intertwined yet highly intricate concepts. Technological systems play a crucial role in determining the degree of system immersion, and this property, driven by its potent sensory impact on perceivers, unveils new subtleties that forge a phenomenological connection with the sense of presence.

In a nutshell, presence is related to malformed perception towards the unmediated, or as Lombard and Ditton define it, towards the “illusion” of non-mediation (achieved by the Locus dimension of LFO theory). But to quote Gumbrecht (2010) again; “Presence could never be perfect if the meaning was excluded”.

Aesthetic experience can be seen as continuous balance in presence-meaning oscillation. Through the embodied nature of human being, the phenomenon of “being there” makes possible the unveiling of deeper involvement that transcends the anhedonia of realities’ surfaces. When that surface is broken down, first for the proximity effect, and second for the transition from meaning to meaningful, a different hue emerges in the “presence of things”. As we continue to investigate the notion of time of presence, aesthetic experience is a rupture in our daily perception of time (and, I would add, of space). And this “intensified form of present tense” is the interaction between the perceiver and the “cinematic smack of the instant” (Gunning, 1993). According to Sobchack (1990), **presence involves our embodied engagement with the world, and the nature of this powerful involvement and**

¹⁹ The duality of presence - *prea-esse* it's the essence of this phenomenon. If βαπτισμός (immersion) is being inside, being submerged, presence is composed by *prae* (in front) *sum* (be).

engagement reaches beyond the mere feeling of being there, it materially touches and constitutes the perceiver.²⁰

To elucidate the aforementioned phenomena and their interplay, we will introduce two distinct case studies situated within an audiovisual context. These case studies serve to encapsulate the intricate dynamics between the various categories of immersion and presence.

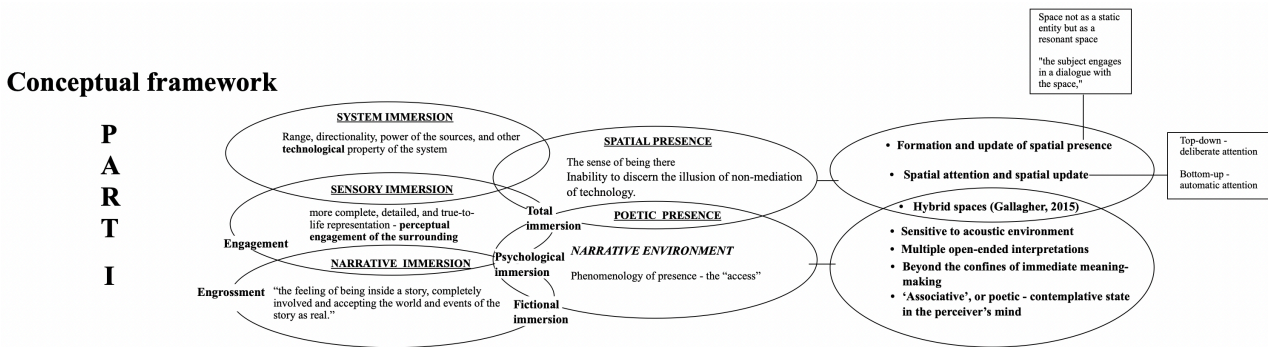


Figure 4, Part I - from chapter 1.6 to 1.9. categories of presence and the correlation to immersion.

IMMERSION	Definitions	Correlations	Correlations	Correlations
System immersion	Objective level of sensory fidelity- Property of the technology "Let's reserve the term "immersion" to stand simply for what the technology delivers from an objective point of view. The more the system delivers displays (in all sensory modalities) and tracking that preserves fidelity in relation to their equivalent real-world sensory modalities, the more that is "immersive."" (Slater, 2003)	Perceptual Immersion (McMahan, 2003) - Blocking external stimuli		
Sensory immersion	"psychological state characterised by perceiving oneself to be enveloped by , included in, and interacting with an environment that provides a continuous stream of stimuli and experience" (Witmer and Singer, 1998)	More complete, detailed, and true-to-life representation of sound can enhance the sense of presence. (Ermi and Mäyrä, 2011)	Absorption means directing attention to an experience that is brought to mind (Ermi and Mäyrä, 2011)	
As a response to narrative contents	"the feeling of being inside a story, completely involved and accepting the world and events of the story as real." (Adam and Rollings, 2006, p.30)	Narrative transportation (Braddock & Dillard, 2016; De Graaf, Hoeken, Sanders, & Beentjes, 2012).	- Emotional flow (Nabi and Green, 2015). - Psychological immersion (McMahan, 2003)	Narrative immersion into spatial, temporal, and emotional immersion (Ryan, 2003)
Fictional immersion	it represents a suspension, a moment of forgetfulness when we become deeply absorbed in a story, to the extent that the events depicted become part of our real world. It's a suspension and negation of the logic of reality, becoming flexible in the face of the imaginary world presented to us.	Involvement and Absorption (Pine and Gilmore, 2011)	Involvement is characterized by the individual's attention and concentration on the experience. (Witmer and Singer, 1998)	
PRESENCE				
Spatial presence	"being there" (Minsky, 1997)	Inability to discern the illusion of non-mediation of technology.	Sensory Immersion: Ermi and Mäyrä's (2005)	
Poetic Presence	Narrative environment (Chattopadhyay, 2021)	Total immersion (Emily Brown and Paul Cairns, 2004)	"by letting them push the distance between us (the subject) and the world (the object) up to the point where the distance may suddenly turn into an unmediated state of being-in-the-world (and I would add, be in touch with it)" p. 137). Or as Lopez F. (2004) "being inside the sound"	

Figure 5, Correlations of presence and immersion in Part I and II

²⁰ Sobchack proposes to use presence as a conceptual framework for film theory and archeology.

1. 3 Case studies

Two case studies are proposed before concluding this chapter. We analyze *Roma* (2018) by the director Alfonso Cuarón. This analysis aims to establish a connection between the conceptual and practical frameworks, constructing a dialectic and aesthetic pluralism for the concept of spatial and poetic presence in relation to immersive continuity in *Roma* (2018) and spatial sharing and depth expansion in *Gravity* (2013), both directed by Alfonso Cuarón. In particular, the analysis follows the modules of the conceptual frameworks which are:

- System (medium, technology, recording techniques)
- Sensory (the passage to the perceiver)
- Narrative - Fictional (the form and the content)
- Spatial and Poetic Presence (the aesthetic of the narrative in the space)

1.3.1 Sonic Symphony of Social Realities: Exploring Immersive Continuity in *Roma* (2018)

- Narrative immersion

Roma is a film in which the concept of point of view is disengaged from the restrictions imposed by the diegetic. The story is set between 1970 and 1971 in the Roma neighborhood in Mexico City, the film tells of two domestic workers who give service to a wealthy family. Amid various vicissitudes including the famous student and popular uprisings of June 10, 1971, *Roma* narrates a duality between social classes.

The two worlds that are depicted are set against each other in which needs, issues, crises, patterns of happiness, and sociopolitical realities are deeply malformed by the welfare state. But while the parallelism tends to emphasize these differences, along the unfolding of the story, it has an opposite effect. Sofia, the landlady, and Cleo, the protagonist, experience traumatic moments in their lives. Sofia is betrayed by her husband while Cleo carries on a pregnancy with the fear of losing her job. The fears, anxieties, and in general the various moods and the sentimental relationships that the two women experience dismantle that classist surface and become reunified in the deep relationship of female support. The interesting metaphor that the film aims to propose is not only manifested in the film's plot but also branches out in the aesthetics chosen. We consciously avoid a purely visual analysis but focus on the aural expression. The film juxtaposes two realities; it wants to bring about a double circular experience in which a third point of view is the "omniscient" observer. The camera assumes a profound role as an embodied entity, intertwining with the sound narratives of space and embodying the perspective of the listener. It becomes the vessel through which the point of audition is personified and experienced.

Immersive continuity reaches the greater expansion in this film and this is because sound and space aesthetic were thought from the first step of pre-production - production - post

-production as a coherent creative process bound between technology, aesthetic and narratives.²¹ To better comprehend how those three values are necessarily linked between them we need to make a little preamble about the dolby atmos technology.

- System immersion

The Dolby Atmos²² technology follow the standard nomenclature of 5.1 and 7.1 but it adds a number at the end to specify the overhead speakers. E.g 5.2.4 means 5 speakers (L-C-R- L surround - R surround -L rear surround - R rear surround, 1 (Subwoofer), 4 (L, top front, R top front, leLft top rear, R top rear). The Dolby technology can extends from minimum 5.1.2 to a maximus of 64 total number of speakers.²³

This consideration does not have the willing to deepen towards a technical specification of the system but to introduce to what the system is capable of. 64 speakers give the possibility to replenish a 360° of sound sphere, it is the closest sound technical system that conforms to the concept of baptism immersion. The extraordinary number of speakers permits to introduce the concept of audio object that can extents up to 118 objects. Beyond the channel-based audio (beds) so where the panning in made before the reproduction, the Object-based can be controlled independently and be played just to one of the 64 speakers. The extreme freedom and malleability to place a single sound to a precise position of the space gives a new listening experience of spatial location. As with any technological advancement, the incorporation of such new settings provides and needs a new way of thinking. The Dolby revolution imposes a global turn to other stages of production, as such recording techniques.

- Sensory immersion/Spatial Presence/Poetic Presence

In the case of Roma the soundscape has an extreme influential role, and resonates deeply with the idea of post-immersion of B. Chattopadhyay. Roma does not need any sound effects or extreme sound design to overwhelm and enchant the perceive's attention and emotional state, Roma exposes realities and the soundscape where those realities emerge.

The great and skillful ability of the full sound department chain permitted to integrate aesthetically, technologically and narratively the message, to unite the content and the form in the same direction. The connection between technology and creativity in aesthetics is a dynamic and symbiotic relationship. In Rome were implied various recording techniques, but the main challenge was to record all the background soundscape separately.

"Roma's sound design began with the dialogue tracks and Diaz's field recordings. "Sergio and his team recorded as much as they could in Mexico City," says Henighan, "and then we

²¹ The plural is intentional

²² "In terms of immersive audio, Atmos is by no means unique, with various other systems like Auro 3D, Iosono and IMM Sound all launching prior to Atmos. However, Dolby's industry reach, brand name and assets make Atmos a prime candidate to become the 'industry standard'" (G.Sergi, 2013)

²³ [Dolby Atmos Home Theater Installation Guidelines, Dec 2018](#)

embellished them. Alfonso would say to [Sergio], 'We need to find the knife-sharpener guy.' Or, 'We need to find real specific birds for the neighborhood, or real specific traffic for when they go to the cinema.' So, Skip and I had these amazing textured tracks of Mexico that were awesome and unique — sounds that had real depth.”

The attention to detail extended as well to the “walla” or background dialogue. Says Henighan, “We didn’t use any canned walla at all — everything was written specifically for these characters.” That means every bit of chatter seeping in from the corners of the frame had its own individual dialogue written and recorded. “We had a couple of laser pointers on stage, and we would track certain characters [on screen].”²⁴

The exemplary level of depth of field achieved by employing these microphone techniques allows for the distinct recording of the diverse perceptual layers of a densely detailed soundscape that resonates in shaping a socio-political understanding of the surrounding environment. Consequently, *Roma* (2018) stands as a remarkable illustration of the implementation of immersive techniques.

Roma (2018) offers an auditory means of identifying contextual elements, enabling viewers to engage with the narrative as if they were characters within the depicted events. It presents a universe where a combination of technological integration, perceptual and sensory immersion, and narrative cohesion coalesce to transport perceivers into a heightened reality. The integration of advanced technologies, such as Dolby Atmos, facilitates system immersion, enriching the overall viewing experience. Additionally, the integration of various microphone techniques enhances perceptual and sensory immersion, providing a spatial representation of the depicted locations. This seamless fusion of sound and visual elements effectively transports the perceivers into the reality proposed, blurring the boundaries between the fictional world and their own reality. As a result of these synergistic formants, *Roma* (2018) creates a compelling spatial presence, transcending the role of passive spectatorship. Perceivers are immersed in both the physical and narrative dimensions of the story, becoming active audience who fully engage with the site-presence and storyline.

- Poetic presence

The rationale behind examining this specific film stems from its remarkable capacity to accentuate poetic presence predominantly through top-down processes. It presents a fluid auditory narrative that, rather than relying heavily on pronounced dynamics (although occasionally necessary), unfolds and extends within a depth of field. This approach grants **deliberate attention** a greater degree of flexibility concerning the narrative's focal points.

The concept of Poetic presence harmoniously aligns with the film *Roma*, and it serves as a tangible representation of the potential for varied interpretations within an open-ended framework, blurring the line between the real and the mediated. The film becomes a canvas

²⁴ <https://filmmakermagazine.com/106491-skip-lievsay-craig-henighan-alfonso-cuaron-roma/>

for "poetic presence", encouraging active engagement with the narrative that goes beyond immediate meaning. The film *Roma* emerges as a cinematic embodiment of interconnected concepts. As we explore the interplay of these phenomena, the film *Roma* (2018) stands as a living example for our theoretical framework.

1.3.2 Sonic Immersion in *Gravity* (2013): Unveiling cinematic and diegetic silence and spatial transport phenomena"

The second proposed case study delves into the analysis of the film "*Gravity*" (2013), directed by Alfonso Cuarón. This choice is driven by the aim to explore, in the concluding section of the conceptual framework, how sound is employed in cinema to create a sense of presence within sound dynamics and space expansion. "*Gravity*" shares system immersion similarities with "*Rome*" (2018) in terms of using Dolby Atmos and immersive point-of-audition techniques. However, what sets "*Gravity*" apart and makes it particularly relevant for inclusion in this section is its nuanced handling of sound dynamics and its adept manipulation of cinematic silence. The perceiver is not merely observing the characters' journey through space; they are invited to inhabit that space alongside them.

From a technical perspective, "*Gravity*" successfully achieves a high level of system immersion. Yet, how does it measure up in relation to other facets of immersion and presence? One of the most intriguing aspects of "*Gravity*" is its use of offscreen dialogue. Typically, in cinematography, dialogue is delivered onscreen to ensure that viewers can connect the spoken words with the characters speaking them. However, "*Gravity*" deviates from this convention by having characters speak offscreen. When characters communicate from offscreen, it challenges the viewer's visual dominance, shifting their attention to the auditory realm and their relation to the extended space. This departure from the visual-centric norm forces the audience to rely on sound to locate the characters and follow the narrative. This audacious use of offscreen dialogue aligns with the concept of "being inside the sound", as proposed by Lopez F. (2004), this notion emphasizes that sound can envelop the viewer, creating a profound sense of poetic and spatial presence.

In essence, "*Gravity*" showcases how sound, when skillfully employed, can transcend the boundaries of the screen and blur the line between the viewer and the cinematic world. In this film, the visual and sonic dimensions are intricately interwoven, from the confined space inside the astronaut's suit to the vast expanse of outer space, the film navigates various spatial layers, each with its unique sonic characteristics. One of the remarkable aspects of "*Gravity*" is its use of subtraction techniques to heighten tension and disorientation. By selectively limiting the sensory input to primarily the auditory sense, the film intensifies the perceiver's emotional response. When visual information is reduced or obscured, the audience becomes more reliant on sound to comprehend the on-screen events. The spatial

divisions within the film's narrative and its corresponding sound design create a sense of confinement and isolation. It fosters a visceral connection between the viewer and the precarious situation the characters find themselves in.

In this case study, rather than conducting a comprehensive analysis of the entire film, the focus is on a specific scene. Our aim is to delve into the model of movement within this scene space, specifically examining the interplay of sound in shaping the expansion and contraction of the cinematic frame. The scene under scrutiny spans from minute **36:34 to 39:42**.

- Narrative immersion

The scene opens with a framing of the space, a minimally perceptible mid-bass frequency echoes, a voice far away is interfered by the radio signal. The extension of the soundscape is very diegetically large. The framing abruptly changes, our attention is now placed in the direction of the character, and her expression takes over (fig.1 - 36:34). The longer the frame stays on the character, the more we are catapulted into her image, noticing expressions, micro facial movements. Suddenly, the point on which our attention was most drawn becomes our point of view. At this point we have the first transition from section one to section two (fig. 2 - 36:40).

The abrupt change in intensity leaves us bewildered, we are overwhelmed by all those sounds; an alarm, an electronic pulse, labored breathing. We focalize all the layers, and our horizon of perception becomes slowly bigger, until the visual takes over. The visual and the auditory field do not match perfectly, we can hear the objects she touches, although very muffled. Outside the visual dynamic is silent. The scene continues in this constant evolution, our layers stratifications of sound and silence are shaped in relation to where our attention is placed. The sounds are in extreme proximity, whether the image is dynamic from the character's point of audition. The suspense arises, the breathing becomes more labored. We are catapulted outside again, the previously perceived intensity shatters, the tension diminishes, pause. Here is the second transition (fig. 3 - 37:18).

Here silence by negation reaches its maximum artifice. In fact, in this scene there are various different layers of sounds with much higher intensity than the first scene. There is no silence but we perceive it, the expectation takes over the reality. The transition to the fourth section evolves with the rise of the intensity. The silence by negation expands until it reaches the margins of the horizon of perception and the cluster of various sounds takes over, she closes the door and here is the third transition (fig. 4 - 37:36).

We return to a state of stillness. The breath emerges in the auditory plane, there are many layers of sound but we still perceive a horizon of silence that delimits the muffled perception of the character. Again we slowly recreate that countable layering in which attention is the impulse through which the horizon of perception extends, until she takes off her helmet and the layer of her point of audition amalgamates with the spaceship space.

The last transition is not as sharp as the others previously described. Figure 5 compresses while Figure 6 expands. What is remarkable about this transition (from figure 5 to 6) is its profound ability to manipulate the conception and perception of the overall space. As she closes the door and turns the knob, we are immersed within her helmet, and the space becomes synonymous with her confinement. Gradually, as she turns the knob, the space begins to expand, mirroring her actions. When she removes her helmet, the space, as if released from compression, returns to its original form.



Cuarón Image 1: Gravity
Timecode: 36:34
Drastic change - bottom up process



Cuarón Image 2: Gravity
Timecode: 36:40
Bottom-up process - high dynamic



Cuarón Image 3: Gravity
Timecode: 37:18
Top-down process - slow dynamic



Cuarón Image 4: Gravity
Timecode: 37:36
Bottom-up / Top-down process



Cuarón Image 5: Gravity
Timecode: 37:51
Slow dynamic-Top-down increase



Cuarón Image 6: Gravity
Timecode: 39:50
Slow dynamic - Top down

- Sensory immersion

In this particular segment, the film immerses the audience in the vastness of outer space, where the absence of traditional auditory cues, such as air and atmosphere, creates a unique acoustic environment. Here, sound becomes not only a narrative tool but also a means to convey the eerie silence and isolation of space.

During moments of intense action and danger, the frame seems to reduce as the audience is bombarded with a cacophony of sounds. These sounds are not limited to dialogue or traditional Foley effects but extend to the rich tapestry of mechanical noises, alarms, and the astronaut's laboured breathing. The spatialization of these sounds, utilizing Dolby Atmos technology, engulfs the viewer, creating a sensation of being inside the chaotic and perilous events on screen.

Conversely, moments of calm and reflection expand the frame through the deliberate use of silence and dynamics. The “absence” of sound is not merely a void but a strategic choice that heightens the viewer's awareness of the character's isolation and vulnerability. It is in these silent interludes that the perceiver becomes acutely attuned to the minutiae of sound, such as the astronaut's heartbeat and the subtle rustling of her suit.

This scene exemplifies the film's masterful manipulation of sound to control the viewer's sense of cinematic space, the expansion and contraction of the frame, orchestrated by sound dynamics and spatialization, mirror the astronaut's journey through the vastness of space and her internal emotional turmoil.

- Poetic and Spatial Presence

As previously mentioned, two main phenomena contribute to the emergence of spatial and poetic presence. Spatial presence is achieved through the engagement of various layers of system immersion—sensory immersion and narrative immersion—that collaborate in a continuous oscillation. The film's capacity to establish an identification with the character's "point of audition" and its surroundings allows the space to become accessible to the perceivers, enabling them to inhabit it. It goes beyond mere presentation; it transforms into a representation of the character's subjectivity in perceiving this space. Spatial presence in films like *Gravity* (2014) and *Rome* (2018) is profoundly experienced in its directionality, expansion, and contraction. What is particularly remarkable is the ability of spatial presence

not only to extend space but also to manipulate and render it "real" in a continuous interplay with the character.

Poetic presence in the other way incapsulate in both mentioned film, also if in different way, the ability to express spatial site-presence but also the ability to use the site-presence as a poetic narrative environment where the audience is in continuous entanglement with the presented reality. In Rome (2018) the **narrative environment** invite the perceiver to embark in a continuous travel that oscillate between automatic and deliberate attention. The ability of the movie to transport in such a proximity, in such an 'access' to that reality, in a depth of soundfield and extension beyond the visible.

The correlation between poetic presence and Narrative environment reside in the conception of storytelling and narrative.

The former can be seen as narrative defined by a series of events that comprise a story, while the as the event of the storytelling itself; thought to be a much older concept of narrative. [...] Thus Genette now seems to echo Aristotle in addressing both storytelling and story as part of narrative. Taken together, this expands narrative and narrative discourse to a more holistic concept of narrative, more along the lines of narrative psychology, a field that "values the stories *and storytelling* in giving meaning to individuals' experiences" (American Psychological Association, 2020)

The resonance of this citation is remarkable, emphasizing that narrative is not merely a sequence of events. This citation has a striking resonance, underscoring the notion that narrative environments are more than a series of sound events. It is through the process of attribution of subjective meaning (both of the character and of the perceiver) that a narrative is constructed (Novack, 2022).

- Paragraph conclusion and personal thoughts

The presence effect has been extensively examined in Virtual Reality (VR), and it is also recognized in film theory as the diegetic effect (Burch, 1979; Tan, 1996). Diegetic effects portray the observer as an onlooker who perceives belonging to the environment depicted in the film. Biocca (2003) has furthered our understanding by acknowledging cognition as a mediator between presence and immersion. This addition of mental representations helps elucidate the equation mentioned earlier. In any medium, the experience is shaped by the mental construction of the surroundings (Schubert, Friedmann & Regenbrecht, 2001). While content provides the raw perception, the layering of signification significantly influences the sense of presence. This perspective partially explains the paradox of presence - we can feel a

sense of presence not just in response to external stimuli but also through our own symbolic representations. By gaining a thorough grasp of how the construction of mental models and the mechanisms of attention collaborate to engender presence across diverse domains, we can embark on a more holistic analysis and comprehension of these processes. Immersion alone cannot fully unlock the doors to the realm of aesthetic experience. In contemporary cinematography, there is an increasing reliance on the sonic dimension to construct immersive soundscapes that aim to intensify the sense of spatial presence. However, **These immersive soundscapes are intended to enhance spatial presence, but due to their chaotic intensities (just bottom-up process), do not allow the importance of other phenomenon to unfold**, consequently, exist an inherent imbalance between these two categories. Simply bombarding the audience with intense sonic elements can overwhelm the viewer and hinder the full realization of poetic presence.

The top-down process, where the viewer actively engages with the narrative and constructs mental models, is critical for achieving a harmonious integration between immersion and poetic presence as intended in this research. This entails not only immersing the viewer in rich sonic landscapes but also providing opportunities for active engagement, cognitive interpretation, and personal involvement with the narrative.

Thus the realms of “inside” and “outside” can be fruitfully combined with the notion of a liminal space of imagination. For now, however, we will have to be satisfied with an unclear and incomplete image of the two spaces, the inside and the outside. The only certainty is that they overlap, and that this overlap happens in the body. The body is the space in between the inside and the outside. It is the body that feels things from the inside, which can foster awareness, and it is the body which directs its attention outside, to the world. What exactly constitutes this in-between space is unclear. According to Henry Bergson, the body is the “centre of indeterminacy”. It is the one image amongst all the images of the (outer and inner) world that remains open. It is a space of potency and creativity, where outside and inside meet. (Poortier, K., (2010)

Presence is a complex embodied form, it embraces immersion but it extends to the subjective appropriation of that experience. In this dynamic coexistence where attention, dynamic, sound narrative, and sonic space play the mediator through which presence arises. The constant wavering back and forth between the space and the body²⁵ crops up the active production role of presence in intensifying the subjectivity - in those terms presence becomes a constant process of coming-into-being and becoming.²⁶

²⁵ Bal M (1996) - Deixis, Merleau-Ponty - “interimplication” Grosz, E. (2001).

²⁶ A remarkable sentence from “Being Singular Plural” of Jean-Luc Nancy (2000), it is necessary to include; “access = “coming (venir) to presence” > presence itself is dis-position, spacing of singularities, is nowhere other than “coming to presence” > we don’t have access to thing/state, only to a coming, we gain access to an access.” (p. 14)

In our pursuit, we have followed a path that aligns with Husserl's idea of practicing phenomenology in a 'Cartesian' manner (Moran, 2018). We have approached immersion and presence in a semi-objective manner to elucidate the mechanisms that trigger it.

The case studies have facilitated the illustration of practical examples and categories, laying the groundwork for the development of personal models. Henceforth, The exploration of how distinct models and theories contribute to the emergence of these phenomena within audiovisual contexts constitutes a focal point of investigation.

PART II

Chapter I

Sound as interplay

“The border itself evaporates so the point becomes invisible” (Stilwell, R. J., 2007)

It seems that the bold discussion taken so far is rather diegetically-based, but the paradox of sound finds perfect harmony and representation in the absence-presence paradigm; it is something we notice only through the effect it has on us. Its invisible essence will become our factor of analysis from here on.

In the cinematic context, image and sound are subjected to a delicate and vacillating balance. Historically, at times movie theatres used music to counteract the disturbing hum of the projectors; this did not always relate to the content displayed on the screen. Aside from the practical need to cover the projector's hum, there was an additional phenomenological divergence; "a thing exists in a phenomenological sense if it affects at least two senses simultaneously" (Chion, 1991, p.39).

In everyday life, the movement of visual phenomena is invariably accompanied by auditory phenomena. When this relationship is disrupted, it gives rise to an unbearable tension, referred to in phenomenology as "ghosts" or "phantoms". In cinema, sound serves to complete the sensory reality and, as Roth noted in 1922, it replaces all other senses by adding depth and creating a third dimension.

The aural reality was introduced as an "antidote" (Adorno and Eisler, 1975) to images, to combat that unnatural one-sided solicitation of the visual apparatus - "music affirms and justifies silence instead of ending it" (Kracauer, 1962). Indeed, the absence of sound in cinema creates a reality that diverges from our daily sensory experiences. Sound, in its intrinsic and sublime connection to movement and space, offers a profound and sensory-rich dimension that surpasses what images alone can convey. It engenders a visceral and bodily engagement with the cinematic narrative.²⁷

-Some thoughts about the audiovisual shift: Implications for Subjectivity and Diegesis.

The narratological concept of Diegesis, as originally formulated by Gérard Genette and subsequently elaborated upon in the realm of audiovision theories by Michel Chion (1990-2001), serves as a fundamental framework for categorizing elements within the

²⁷ In the realm of psychoacoustics, extensive research has illuminated the pivotal role of low frequencies in engendering a profound sense of embodiment within auditory experiences. This phenomenon is often described as "adding body to the sound."

audiovisual space. This framework encompasses both diegetic and extra-diegetic components, including various amplifications.

The analysis of the one-sidedness of the senses, and the introduction of sound as an antidote to fill the gap left by all the other senses that are not excited, sees the body as a resonator; “the associative states with the inner or outer world can be translated into the categories developed by Chion with the tripartite circle model” (Novack 2022)

Diegesis in the cinematic context encompasses everything that exists within the frame and its immediate surroundings. It includes not only the characters, objects, and actions occurring within the visible space but also extends to elements implied or referenced by the narrative, even if they are off-screen. Diegesis essentially forms the complete world of the film that the audience engages with visually and aurally.

When it comes to sound, diegetic sounds are those that originate from sources within this cinematic world. These sounds are tied to the actions, events, and objects portrayed on screen, and they contribute to the audience's immersion in the film's narrative.

However, the landscape of audiovisual storytelling underwent a profound transformation with the advent of new aesthetics. This transformation was driven by cultural shifts and exponential technological growth, which in turn granted sound designers and re-recording mixers a remarkable degree of creative latitude in shaping narrative strategies. One of the dimension is the division between diegetic and extra-diegetic elements that became more fluid, enabling the integration of sound in ways that could intricately interweave with the narrative fabric. Surround sound was well established before the advent of immersive technology, the introduction of it in cinema marked a significant expansion of cinematic space, pushing the boundaries beyond what was visually observable on the screen.²⁸ This shift towards off-screen sound was a pivotal aesthetic transformation. The heightened spatiality of surround sound, ambient sounds gradually evolved into integral components of the narrative, allowing the audience to perceive the presence of the physical space in a more embodied and realistic mannered, and this mimetic representation of spatial reality enhanced the audience's sense of directionality and completeness within the narrative of the story-world.

As observed in both case studies, beyond the varied aesthetics of poetic and spatial presence in relation to the narrative, there is a liberation of sound from images. This liberation is actualized by redirecting the main focus of attention and determining its relation to the space.

²⁸ The transformative impact of off-screen sound was not solely reliant on the introduction of surround sound technology. Even within a mono channel setup, the potential existed to create a heightened sense of depth and expand the perceptual boundaries of cinematic space. This approach aimed to capture a more realistic perception of space, emphasizing its directional qualities.

Diegetic and non diegetic may be a simple distinction, but it need not be a simplistic one. The fact that the boundary is crossed so often should not invalidate the integrity of the distinction; indeed, the manner in which the meaning in the distinction multiplies and signifies in the crossing is indicative of its power. The border region - the fantastical gap- is a transformative space, a superimposition, a transition between stable states [...] The movies have taught us how to construct our phenomenological geography, and when we are set adrift, we are not only uneasy, we are open to being guided in any number of directions. It is the multiplicity of possibilities that make the gap both observable and fantastical - fantastical because it changes the state, not only of the filmic moment, but also of the observer's relationship to it. (Stilwell, R. J., 2007)

The cinematic space assumes a multifaceted role in erasing the boundaries between the seer and seen, diegetic and extra-diegetic. It is within this dynamic that the movement of perspective symbolises a new form of narrative - the augmented spatial representation (seen both in our case studies). With the spatial expansion, the relationship between the perceiver in relation to the screen also goes further. The multidimensionality offered by different perspectives enriches the cinematic experience, has surmounted the traditional division of the impersonal and the personal, introducing the multi-canoncity of not only spatial but also of characters' emotional states and moods.

In this context, Merleau-Ponty's phenomenology offers valuable insights into reconciling the cinematic experience with the traditional division of outer and inner space. These two dimensions are inherently linked within the realm of subjectivity. When considering a perspective that encompasses both the external and internal worlds, the body emerges as medium of subjectivity. Cinematography continually blurs the line between subjectivity and objectivity, serving both as an aesthetic tool to engage perceivers as a manifestation of embodied subjectivity. It represents a delicate equilibrium between subjectivism and objectivism, all encapsulated within a single point of view. But how can the oculocentrist analysis brought forward be applied to the sound field?

“‘Sound are as close to us as our thoughts’, then by listening we may be able to perceive the relationship between object and subject, inside and outside [...] altogether differently. In its engulfing multi-directionality sound blurs the above distinctions and enables us to re-think our relation to them.”
(Bull and Back, 2003).

The exploration of spatial presence through sound goes beyond a simple representation of the diegetic and nondiegetic world. It involves an aesthetic exploration of how sounds and the

relation with the screen and the perceiver intermingle and oscillate between inner and outer realms. This dynamic relationship between sounds from within the cinematic world (the inner) and those that extend beyond it (the outer) adds layers of complexity to the sensory experience and the phenomenological geography. It blurs the boundaries between what is perceived as part of the film's reality, what is external to it, and perceived from the character. In essence, diegesis and the sounds that inhabit it serve as bridges between the cinematic world and the audience's perception. They are not merely elements within the frame but conduits through which the audience can traverse the inner and outer realms of the cinematic experience (Novack, 2022).

Chion's categorizations of film sound, while valuable in providing a framework for understanding the role of sound in cinema, can sometimes encounter situations where these categories are not easily distinguishable or neatly separated. Some categories manage to transcend the edges between the visible and the expansion of the visible into the invisible and viceversa. This blending of diegetic and non-diegetic elements demonstrates how sound can transcend traditional categorizations. Chion's categories provide a valuable starting point for analyzing film sound, but they should be viewed as flexible tools rather than rigid boundaries.

QI second part:

- The hermeneutic paradigm of sound thinking (reflection-in-action/reflection-on-action). How can one "educate" the spontaneity of the creative process?
- Since we cannot ostracise immersion, as a fundamental part of contemporary aesthetics, how can we find a juncture between immersion and presence?

Goal present chapter:

Building a model for sketching design that can aid artistic practices in the stage of sound design and re-recoding mix (this model does not aim for extreme rationalisation of the creative process, but rather a guideline that can both serve the will and the tacit knowledge of my personal works).

The ensuing topics will be discussed in the following order:

- Construction of the model through review literature and comparison to the theoretical framework.
- Practical application of Sound Design (Ambience, SFX, foley) and re-recording mix stage of "Arrival" (2016) and "O sol não nasce ao Norde" (2022).

2.1 Sound Design Thinking

“Understanding arises by a process of constant revisions.” (Snodgrass and Coyne, 2006, p.46)

QI :

The hermeneutic paradigm of sound thinking (reflection-in-action/reflection-on-action). How can one "educate" the spontaneity of the creative process?

Sound design research is a practice of exploring phenomena through sound, investigating problems related to the practice of design "as a 'recursive' process of making and reflection" (Tracy, 2022). Sound design, which is a part of the entire sound post-production process, represents a manifestation of sonic thinking. This field highlights the intimate connection between theoretical understanding and practical application. One of the challenges we face in sound design is that much of the knowledge is tacit, ingrained in our practices, and intricately linked to the way we execute tasks. In some instances, it becomes challenging to articulate the reasons behind certain decisions and actions. This phenomenon underscores the rich interplay between theory and practice within the realm of sound design. In the world of sound practice, actions often precede conscious explanations, we engage in a recursive cycle of "reflection-in-action" as we create, followed by "reflection-on-action" as we step back to analyze our work. This iterative design process generates a unique form of knowledge. Artistic research endeavors to transform this tacit and intricately interconnected knowledge into explicit and coagulable words. Moreover, artistic research as knowledge-making practice is relevant not only for transferring creative knowledge but also for providing a "psychoanalysis" tool for the artist's own processes, encouraging them not to fall back into certain dynamics, which can act as implicit constraints rather than a truly creative process that is free from instinctive interchanges. The creative process between instant and memory is an architectural process, and in order to educate the cycle of design practice, what can be done?

To nurture and enrich the cycle of design practice, a few key steps can be taken:

Reflective Practice: Encourage artists and designers to engage in ongoing self-reflection throughout their creative journey. This involves regularly examining their own processes, decisions, and thought patterns. As Schön (1983) emphasizes in his seminal work on reflective practice, it is crucial to encourage artists and designers to engage in ongoing self-reflection throughout their creative journey.

Interdisciplinary Exploration: Promote cross-disciplinary collaborations and explorations. By exposing sound practitioners to diverse fields and approaches, they can draw inspiration and

insights from unexpected sources, breaking free from established norms (Cross 2006).

Mentorship and Peer Review: Establish mentorship programs and encourage peer review within creative communities. Constructive feedback and guidance from experienced practitioners can help emerging artists refine their processes (Sennett 2009).

Research-Based Design: In his seminal work (Lawson, 2005), Bryan Lawson advocates for a research-centered approach to design, underlining the significance of designers engaging in investigative exploration, experimentation, and meticulous documentation of their processes. This approach serves to enrich their comprehension of their creative methods. Sound practitioners should be encouraged to investigate, experiment, and document their processes rigorously. This fosters a deeper understanding of their own creative process.

Continual Learning: Pink (2009) underscores and emphasizes the importance of continual learning and professional development both in aesthetic terms and technological advancement. Sound practitioners should remain open to new tools, technologies, and methodologies to keep their creative practices fresh and adaptable.

Critical Engagement: Paul and Elder (1997) discuss and promote critical thinking and analysis within the creative process. Encourage artists to question assumptions, challenge conventions, and consider alternative perspectives.

Incorporating these elements into the educational and professional development of sound practitioners can help cultivate a creative process that is both dynamic and mindful, fostering innovation and preventing the stagnation of instinctual interchanges. This approach empowers artists to continually push the boundaries of their own creativity and contribute to the evolution of their respective fields.

“We do not see practice-led research and research-led practice as separate processes, but as interwoven in an iterative cyclic web.”
(Smith and Dean, 2009, p. 2)

The thesis delves into artistic research, wherein the concepts derived from the conceptual framework dynamically interact with three primary models to help the sound post-production chain (Reflective Practice). This composition takes into account the central phenomena of system, sensory and narrative immersion, as well as poetic and spatial presence (Interdisciplinary Exploration). In a more detailed analysis, we explore the notion of post-immersion introduced by Chattopadhyay (2021), extending the ideas of spatial and

poetic presence previously examined. The concept of post-immersion repositions our analysis towards an alarm mechanism designed to sustain attention on specific phenomena. As a complementary model responding to Chattopadhyay's concepts, Sciarrino (1998) is introduced. Sciarrino's model, distinctively characterized by two opposing forces – one expanding and the other contracting.

It is important to highlight the shared ideology between Sciarrino and Chattopadhyay concerning the crafting of sonic dialogues, closely linked to the activation of spatial and poetic presence, as elucidated in the earlier discussion on bottom-up/top-down processes seen in Chapter 1.7. Progressing further, the third model, proposed by Hillman (2021) and Murch (2005), broadens the analysis from a macro to a micro perspective. Specifically, the focus shifts to the relation between 'categories' as explored by Hillman (2021), and subsequently delves into the intricacies within each 'category'.

The model proposed by Hillman (2021) undergoes critical examination due to its categorization, but serving as a pivotal element to transition the discourse to Murch's (2005) methodology. Once a 'line' of the sound narrative, supported by the earlier mentioned models, has been formulated, the focus moves to the intrinsic relationships between the various sound layers and compositional strategies. The third stage, also known as the top-down process, pertains to the re-recording mixer's role. In this stage, upon receiving the project with its various superimpositions, the re-recording mixer engages in a perceptual cleansing process. This involves precisely determining how much and where to follow the main line of the sonic narrative constructed through the conceptual idealization of the processes of accumulation and multiplication.

The objective of this second part is to formulate a personalized model with practical applicability, recognizing the effects of presence and immersion as fundamental components in the practical discussions. This section consistently adheres to the idea and *modus operandi* of avoiding a sound composition that overwhelms the content of the story and the perception of poetic and spatial presence in their various dimensions (Critical Engagement).

2.2 Post-immersion

“Ambient sounds can affect the sense of presence by instigating a sense of “being there” in the embodied auditory setting experience [...] I intend to distance myself from the norm in search of more freedom, subverting industrial standards [...] Abundant freedom, personality, playfulness makes an artwork more engaging and vocative” (Chattopadhyay, 2021, p.155)

Immersion has consistently been a subject of academic debate and analysis. However, over time, the concept of immersion has risen to prominence as a central and even fetishized aspect of creative endeavors across various domains, ranging from sound installations to augmented reality experiences. This heightened focus on immersion, particularly during its zenith, was characterized by a standardization of what can be described as an "overwhelm and overpower" aesthetic, as aptly noted by Chattopadhyay (2021).

Chattopadhyay's concept of "Post-immersion" emerges as a response to the ever-shifting equilibrium in this discourse. The scholar's critique delves into the profound interplay between consumers and producers, who, driven by consumerist motives and a desire for pure entertainment, actively guide the audience towards "falling into a sensual and indulgent experience" (p.180). This process has created increasingly immersive worlds where the overwhelmed audience locks itself into states of anhedonia. B. Chattopadhyay proposes a model that shifts the focus from immersive environments to **narrative environments**, where the audience is free to detach itself from predetermined ontological relationships. According to him, one can experience phenomenological freedom that is not derailed, suppressed, and influenced by accepted aesthetic dogmas crystallised by a consumeristic context but, rather, a fertile ground providing the required ruptures for the perceiver's subjectivity to emerge. These issues can be condensed into several questions; how can we recover the sense of poetic and spatial presence? Is it possible to create a sonic narrative that maintains both sensory and emotional attention without averting sonic realism? In other words, is it possible to develop an immersive aesthetic that takes into account the sense of presence as a narrative tool?

The answer, at least partial, is proposed through the conceptualization of presence "as a contribution to the sense of embodied experience through a perceived notion of realism [...] Presence can be the key to understanding the process of embodied experience" (Chattopadhyay (2021)).

- Triggers of poetic presence

Presence, as already stated numerous times in previous chapters, whether from the perspective of Gumbrecht (2010), Nancy (1993), various scholars of virtual reality, and Chattopadhyay (2021), posits that its revolutionary impact is due to the direct materiality of the phenomenon, which results in an aesthetic experience that transcends pure symbolic orders of immediate meaning-making, but that is created between the oscillation of associative, poetic-contemplative, and bodily states of the perceiver, giving the possibility of multiple interpretations. The basis for this interpretation is established within our research, emphasizing the importance of refining **top-down processes**. Through this integration at both micro and macro levels, it fosters not a singular, uniform interpretation or response, but rather encourages a personalized and subjectively appropriated understanding of the content.

We have been shown to have an unexpected openness to interpretation when we engage in, and this has been led to by the work of LaBelle (2015):

“Listening that wanders across thresholds of presence and absence, the immediate and remembered to create all sort of association” (LaBelle, 2015, p.319).

According to Chattopadhyay, "manufactured presence" refers to the intensification of presence for engagement purposes, regardless of manipulating and artificially creating a relationship with the intricate and profound sounds of the world. At the antipode, we find "**poetic presence**", constructed through ethical thinking that invites the perceiver to a contemplative and associative state of the proposed world, and a creative model of producers that encourages "inclusiveness and sensitivity to the site-specificity of sound" (Chattopadhyay, 2021). The academic endeavors, via this meticulous investigation, aspire to underscore discursive over immersive environments.

In order to encourage subjectivity and “break down” immersion, Chattopadhyay proposes four factors to consider:

1) Presence of environment sounds as an alarm mechanism for site-awareness - Cognitive connection and association with work's site. In the context of cinematic experience, the presence of environmental sounds serves as an alarm mechanism, alerting the audience to the awareness of the physical and spatial attributes of the depicted site. By incorporating sounds specific to the location or setting, such as background noises, echoes, or ambient sounds, the cognitive connection and association with the work's site are strengthened. This sonic engagement prompts a heightened sense of presence, drawing the audience into a more immersive and site-specific experience.

In "Roma" (2018), a masterful blend of technological integration, sensory immersion, and narrative coherence transcends traditional filmmaking. The film transports viewers from passive spectators to active perceivers, immersing them fully in the story and its surroundings. Through a nuanced auditory narrative, "Roma" goes beyond pronounced dynamics, allowing the narrative to unfold and extend within a rich depth of field. This approach provides deliberate attention with flexibility, accentuating site-presence through top-down processes and offering a unique cinematic experience. The film's exceptional capacity to engage viewers on multiple perceptual levels makes it a compelling example for this category.

2) Asynchronism - a divorce of sound and image in the audiovisual experience - Disentangles the sound from the images, giving it autonomous agency.²⁹

This deliberate disjuncture can create intriguing artistic effects, such as emphasizing the emotional or psychological impact of sound independent of the visual narrative. Asynchronism allows for a more nuanced exploration of sonic possibilities, enabling sound to evoke its own meanings and provoke unique responses from the audience.

“Gravity” (2016) introduces a captivating element by deviating from the conventional use of onscreen dialogue in cinematography. Unlike traditional films where dialogue is visually tethered to characters, “Gravity” takes a bold step by featuring offscreen communication. This choice plays a pivotal role in shaping a truly unique immersive experience. By diverging from the visual-centric norm, the film challenges the viewer's reliance on sight and redirects attention to the auditory realm and the expansive space it encompasses. This departure prompts audiences to rely on sound as the guiding force, enhancing the spatial experience and creating a narrative engagement that transcends the typical visual expectations of mainstream cinematography.

3) Poetic intervention (Chattopadhyay, 2021) - Narrative flow is disrupted by discursive elements such as poetic utterances (textual) and contemplative moments. These moments of poetic contemplation interrupt the linear progression of the narrative, introducing a reflective and introspective quality (Top-down attentional process). By incorporating poetic elements, the artwork opens up space for interpretation, reflection, and a deeper engagement with the underlying themes and emotions being conveyed. This intervention adds layers of meaning and invites the audience to delve into their own subjective responses and interpretations (eg. pauses, silence, continuous and non-linear dynamics, narrative and abstract interviewed sounds).

- Acoustic ecology and Chattopadhyay

Spatial and poetic presence, intended by Chattopadhyay, underlie the scholar's critique in the field of acoustic ecology, a discipline pioneered by Murray Schafer. Central to this discourse is the concept of the acoustic “territory” or soundscape, which holds significant contemporary relevance. This perspective celebrates the art of field recordings, for it possesses the unique capacity to transport the audience into both distant and nearby realms and realities through a profound sense of proximity. Recordings crafted with the intention to faithfully represent reality in its unfiltered authenticity, as exemplified by projects like “Cities

²⁹ “Audiovisual counterpoint will be noticed only if it sets up an opposition between sound and image on a precise point of meaning. This kind of counterpoint influences our reading, in postulating a certain linear interpretation of the meaning of the sounds”. M. Chion.(1994). Audio-Vision: Sound on Screen. New York: Columbia University Press. p. 38.

and Memory” (2022), stand as powerful embodiments of this “ethical” approach.³⁰ Essentially, Chattopadhyay's message urges us to break free from the implicit constraints imposed by a consumer-driven aesthetic. He calls for a departure from certain standardized practices. His words resonate with a powerful message: "No more effects, more sensible content! "(at least as I understand it). This perspective can be seen as a socio-political vision applied to the realms of soundscapes and sound thinking. Within the framework of post-immersion concept, which posits an orientation towards fertile auditorium scenarios (Chattopadhyay, 2021), one of the viable solutions lies precisely in the incorporation of ambient sound and the socio-political implications they convey. When the perceptual manipulative technique of immersion fractures, that is when post-immersion conditions can come into play, emphasizing a consideration for the listener's subjectivity.

- Post-immersion - Presence(s) - Immersion

Within these pages, a creative methodology emerges, one that advocates for contemplating the notion of poetic presence. This approach transcends mere sound immersion by emphasizing the importance of narrative and the presence of the site itself.

To truly promote the subjectivity of the perceiver, it becomes crucial to consider the interplay between the narrative being conveyed and the presence of the site in which the audiovisual experience unfolds. This integration allows for a more embodied engagement with the artwork, going beyond a superficial sensory investment.³¹

Works of art serve us more for the problems they raise than for the problems they have solved; they serve for what they make possible, and not for what they have defined [...] an airiness detached from social utopias is always a companion to a strong anxiety about change. Anxiety, in the aesthetic field, is matched by fear and rejection of the new. The uncultured and traditionalists thus end up relegating music to the same innocuous function, continually masqueraded as celebration, the function of entertainment. But this is really too little in comparison with the pleasure that music [I would expand it to all the arts] could give us; we want artistic language to passion us. (Sciarrino, 1998, p.28)

Similarly, in his work "Figure della musica", Sciarrino engages with this issue from a musical standpoint. However, rather than critiquing the established norms, he underscores the significance of transgression within musical language. This transgression involves the evolution of established systems to become more personal and communicative, emphasizing the value of pushing boundaries and transcending convention to achieve greater

³⁰ <https://citiesandmemory.com>

³¹ It is important to note that not all the audiovisual product have this goal, there are some product that

expressiveness and individuality in artistic endeavors.

No matter how radical a transgression may initially seem, it inevitably involves a process of transformation. Yet, why should we confine the concept of immersiveness, which has become a significant contemporary canon, exclusively to the realm of entertainment and tether it solely to playful purposes?

The communicative power of immersion has led to an aesthetic transformation, encompassing both "effect" and "communicative" phenomena, as we previously discussed. This immersive quality is a sensitive facet of contemporary cognition, the waters that immersion has stirred can be compared to the agnition of the ugly. Initially, the aesthetic canon of the ugly was subject to generalizations and exemplifications. However, its integration into aesthetics offered a fresh paradigm for understanding the inherent possibilities of the polycentricity within artistic representation. The parenthesis is closely related to the concept of immersion, a concept that in its saturation has resulted in an annihilation. Nevertheless, we cannot ignore how some films are being devoured by eccentric immersion at the expense of narrativity.

What we propose is not to ostracise immersion, but to find a balance that can reclaim the communicative power of it. The intention will lead to thinking about presence and immersion as aesthetic canons that represent the paradigm of an aesthetic thinking that uses narrative environments to elevate the sense of presence, not only in the sense of "being there" but also as sonic thinking that repurposes the manipulation of the diegetic and extradiegetic as movements of proximity and estrangement as representation of the narrative movements.

In this specific scenario, the process of sound design will encompass several key elements, including special effects (SFX), ambient sounds, foley, and the re-recording mix stage. It's essential to emphasize that this excludes any work related to dialogue and music when it comes to sound redesigning of the film "Arrival" (2016). However, when we shift our focus to the exhibition, the scope of sound design widens. Here, we include dialogue and music in addition to the previously mentioned elements.

2.3 Sonic Macro-Processes: The Dynamics of Accumulation and Multiplication

Sciarrino's theory rooted in music explores various techniques of stratification, which can be classified into two fundamental processes: accumulation and multiplication (Sciarrino, 1998). While Sciarrino primarily applies this discourse to the realm of music, we can extend its relevance to the practice of sound design as musical construction of the sound-world. In the context of soundscape construction, we can conceive it as a microscopic manifestation of sound. It exhibits moments of rarefaction and compression as its defining characteristics.

Moments of compression manifest with higher sound density, where sound particles closely converge, creating heightened tension (increase in dynamics/ bottom-up process/ break in presence). Conversely, moments of rarefaction are marked by reduced tension, with sound particles spaced further apart (decrease in dynamics/top-down process). The parallelism between acoustics, musical form, and design thinking is based on the physiological need for two opposing forces; tension and resolution.

The discourse taken so far does not deviate from the analysis of attentional processes discussed above, tension involves internal changes in dynamics, which through processual discontinuity alters attentional states toward greater neural activity, i.e., greater attention (Sá, and Tanaka, 2019).

Considering an audiovisual product not merely as a mimetic representation of the visual elements, but as a dynamic model that develops through moving forces responsible for the narrative potential of sound, enables us to construct a framework that aids in the design process. We can understand the practice of sound post-production as a musical composition by observing how such moments of contraction/tension and expansion/resolution resonate. Movements of contraction/tension and expansion/resolution are applicable to a wide range of systems ranging from harmonic relationships between parts (harmonic and non-harmonic counterpoint) to the application to whole systems.³²

Returning to Sciarrino's (1988) concepts, we can expand upon the movements described earlier, considering both macro and microforms.

Accumulation processes, in a broader context, can be seen as a macroform. They exhibit characteristics of entropic systems where diverse elements accumulate, leading to a rise in energy density until reaching the points of saturation. Tension refers to the heightened intensity of these accumulations, which, when saturated, amalgamate into a colossal sound entity, causing a perceived *compression of time*. The tension generated in such processes is characterized by its heavy intensity and impact. However, if prolonged for an extended duration, it can lead to an extreme saturation of the sensory apparatus.

An intriguing phenomenon to consider is the manner in which sensory saturation, when prolonged over time, gradually diminishes its capacity to apprehend alterations in stimuli. Consequently, even in the presence of highly dynamic auditory input, what becomes perceptible is a continuous stimulation that cannot adequately process the wealth of information, leading to a perceptual decrease in dynamism.

³² This pattern can be analyzed from two perspectives: a microscopic examination of individual elements (such as note-to-note or sound-to-sound), or a macroscopic view of entire sections (whole sections can either progress towards greater intensity and dynamics, thereby inclining towards tension, or they can move in a direction of reduced tension).

On the other hand, there are the processes of multiplication that are part of both micro and macro forms. This process is a multiplication woven into stasis, where the elements are homogeneous and tend toward orderly growth. On the perceptual level, it is a liminal system where the counterpoint of elements follows a harmonic line of evolution.

These two processes, accumulation and multiplication, can serve as valuable tools for delving into sound phenomena, facilitating the exploration of creative ideas that traverse the spectrum from the micro to the macro scale. Specifically, these processes are inherent to the realm of sonic cognition, prominently emerging during the sound post-production stage. Within this stage, a sequence of sound layers is artfully woven into the initial silence, orchestrating a perceptual counterpoint that intricately creates the narrativity.

- Integration conceptual framework.

Importantly, these two processes exhibit a resonance with the earlier proposed models, namely the LFO model and Biocca's model. The *accumulation processes* inherently construct a dynamic and perpetually shifting sonic panorama, frequently characterized by abrupt fluctuations in intensity. The perceived discontinuities within this soundscape engender a notably intricate and multifaceted cognitive perceptual process (resembling Biocca's *bottom-up and automatic attention*). In contrast, the *multiplication processes*, with their sinuous and harmonious nature, do not lean towards abrupt sensory stimulation. Instead, they unfold with internal modulations and inherent sound evolution that adhere to a more harmonious pattern. Cognitive processes will tend more toward a *top-down movement* (Biocca) and *deliberate attention*. However, it's noteworthy that extended exposure to either of these processes, whether they lack sufficient stimulation or become excessively stimulating, can lead to a gradual erosion of both attentional processes.

These movements and their correlations will serve as analytical tools to establish the initial layers of the sound design “score”.

- How do these movements align with the concepts of poetic and spatial presence?

Spatial presence is fundamentally linked to site-presence, making it a phenomenon closely tied to the reception of the soundscape. It involves the creation of a rich fertile environment where deliberate attention is free to select focal points. On the other hand, automatic attentional processes are also integral to the experience of spatial presence. As analyzed earlier, the ambivalence in the continuity of sound densities (both higher or lower) can lead to the decay of both attentional processes. In essence, spatial presence is intricately connected to the movements of accumulation and multiplication in their interplay—they represent two facets of the update mechanism of spatial presence.

2.4 Relations between sound “categories” in shaping narrative environment

The first demarcation of our model has a macro-level application on the sound narrative and the corresponding attentional processes that delineate two realities of spatial presence. However, if we zoom in within these movements, what are the corresponding relations?

The second layer of our model begins with a critique of "the four sound areas" developed by Neil Hillman in his book, "Sound for Moving Picture" (2021). The proposed model is intended to support both the creation, selection and editing processes of sound design (processes the author will refer to as bottom-up), and the re-recording stage (top-down process) by creating four categorization.

- Hillman's categories

Four different areas are outlined that specify certain types of categories: Narrative, Abstract, Temporal and Spatial. The narrative area is defined by sounds that are fundamental and significant to the evolution of the narrative. It also includes those sounds that represent the inner and emotional world of the characters, as well as sound effects that communicate and convey clear meaning. Examples are dialogue, foley, and many of the sounds that represent the diegetic story-world. The narrative area is determined by these points:

- i) confer significance to a narrative point or event
- ii) conspicuously draw attention to a plot point
- iii) describe an action or an event
- iv) be meaningful to plot progression, with its significance readily understood by the listening-viewer. (p.45)

Abstract Sounds convey signifiers that are less codified in their meaning, music is part of this category as well as soundscape, room tone and musical sound effects. They may reflect a certain type of emotionality of the characters or act as emotional triggers for the audience.

The temporal area is concerned with rhythmic structure. From a less rhythmically complex structure to one with a higher polyrhythmic and rhythmic density, it the model extends in a straight line. The temporal area has direct access to the perception of temporality that the audience will experience; the more accelerated the rhythm the more temporal contraction will be perceived, and vice versa.

The last category is the spatial area, which has an arc of point sources of sound that covers from monophonic to various surround settings. Hillman points out how all sounds have a spatial reality but the spatial area is “when this characteristic is their most important sound design aspect” (p.47).

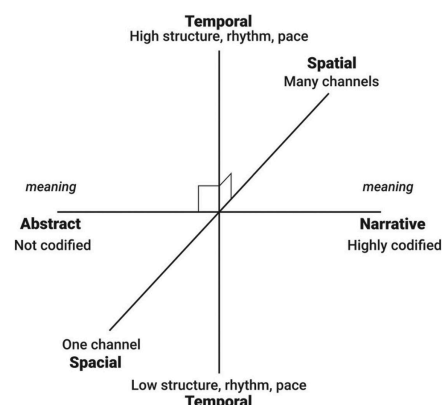


Figure 6 A simple 3-axis model representing the Four Sound Areas - Hillman (2021)

Hillman (2021) raises a fundamental question in his work: how are emotions elicited by each category, and how do these areas impact the emotional experience of the perceiver during the sound mix? His model is constructed based on the semicircle developed by Murch in 2005.

- Murch's categories

Walter Murch aptly categorizes sounds as “cold” or “warm” (Murch, 2005). It's important to note that this term doesn't pertain to emotional connotations but rather reflects the intrinsic characteristics of the sound itself.³³ Conversely, on the opposite end of the spectrum, he posits the “warm” sounds. These encompass sounds that defy easy decoding, including soundscapes, atmospheres, musical sound effects, and ultimately music. The defining characteristic of these “warm” sounds is their pronounced spatial quality, allowing them to be situated across the entire surround spectrum, if aesthetic considerations opt such placement. Murch's model is built upon the concept of brain lateralization, where the two hemispheres of the brain have distinct tendencies in information processing. The left hemisphere leans towards analytical, mathematical, logical, and linguistic activities, while the right hemisphere operates with interconnected modules, emphasizing intuitive and creative functions. However, it's important to note that Hyde, K. L., Lerch, J. P., Norton, A., Forgeard, M., Winner, E., Evans, A. C., & Schlaug, G. (2005) have shown that neural processing, especially in music, often involves both hemispheres simultaneously. In the case of music, the left hemisphere handles the understanding of musical structure, while the right hemisphere focuses on melody. This suggests that the brain's activities often engage both hemispheres, although their specific functions may differ.

³³ The connotation associated with “cold” sound is tied to the spatial expansion of the source, whether the sound possesses an identifiable position or envelops “all around and here on my body”.

- Challenging the dogma of categories and the connection to narrative environment

An inherent challenge emerges within this sectorization—when categorizing a sound as belonging to a specific domain, it implies exclusion from the other domain. Herein lies a contradiction, as for example both monophonic and spatially distributed sounds can play pivotal roles in the narrative. The dichotomy of deciding whether a sound primarily contributes to the spatial experience or serves a narrative purpose may reduce the intricate interplay of these elements. It's not solely about delineating which area is more "narrative" but rather about discerning how the intensity of each component follows a narrative trajectory in their relation. Similarly, the uniform process can be extended to encompass all four categories. These elements don't exist in isolation; sound, particularly transcends rigid categorization. It does not conform to being confined solely to one category but rather demonstrates its efficacy across all the dimensions concurrently.³⁴

Expanding the conceptual framework developed around the immersion-presence paradigm, a noteworthy aspect in the model proposed by Murch (2005) lies in the intricate interplay between space, sound, and the perceiver.

Murch's model envisions a semicircular representation with dialogues (encoded) on one end and music (embodied) on the other.

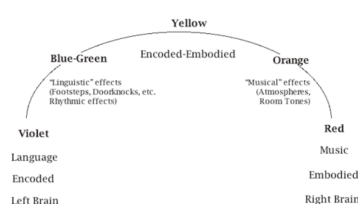


Figure 7, Murch Model, (2005), "Womb Tone", p.6.

The two theories presented, encompassing abstract, narrative, temporal, spatial, and encoded-embodied sounds, both focus on spectral reactions. Within the juncture between these theories, we encounter two contrasting aspects, which can be likened to opposing sides of a semicircle; Narrative /encoded, and Abstract/embodied.

In the realm of sound design, "Materializing Sound Indices (M.S.I.)" (Novack, 2022) serve as essential tools for crafting the auditory dimension of moving images. These indices, comprising subtle sonic elements, have the unique ability to either bring forth the material and concrete aspects of sounds. Materializing Sound Indices enable sound designers to

³⁴ Nevertheless, it is crucial to note that Hillman (2021) acknowledges this criticism but navigates around it by prioritizing the emotional response in a given sound state. To achieve this, it becomes necessary to delineate and differentiate these states. Hillman's response to this criticism involves giving precedence to the most influential area. For instance, a sound that plays a fundamental role in narrative evolution, even if it is projected throughout the surround, is defined as narrative beyond its significant spatial quality.

convey specific material characteristics, enriching the auditory world by providing information about substance and the space around, shaping auditory worlds that resonate with the sensory dimensions of the audiovisual experience (M.S.I sounds are most frequently part of the narrative encoded section, but as earlier mentioned, any one category of sound can, at times, operate elsewhere in the spectrum).

Hillman and Murch's theories, within the left semicircle, primarily delve into sounds that operate as M.S.I, often characterized by linguistic elements, such as dialogues, footsteps etc.. For example, dialogue and foley sounds have a mono or stereo spatial setting because of their diegetic characteristics, which drive the audience's attention away from the visual if used in the surround. However, the significance of a mono channel extends beyond its relation to the diegesis; it pertains to the direct meaning conveyed by the sound, whether it is on or off-screen. The concept of positioning sound in either a mono or stereo format lies in its capability to draw automatic attention to a specific direction, emerging prominently from the background and attributing a clear sense of directionality. Conversely, when sound is integrated into the diegesis, it directs the focus to a specific point within the frame (eg. tracking a character's footstep trajectory).

What I find truly remarkable is the capacity of automatic and deliberate attention to extend the frame's boundaries, establishing connections with elements beyond the screen's immediate view, and deepening the frame's spatial dimensions. However, what's even more crucial, and this harkens back to the concept of post-immersion and poetic/spatial presence, is that due to the compelling allure of these sounds, their utilization becomes of paramount significance. Both Hillman and Murch underscore the unequivocal meaning inherent in linguistic sounds, as, for instance, the sound of footsteps often conveys a single, unmistakable message. However, when we integrate Chattopadhyay's notion of poetic presence, these sounds, intrinsically linked to the world around them, wield a potent and compelling influence within a narrative environment. *They actively contribute to the poetic presence of the site and its surroundings*, enhancing the overall narrative experience. Even though linguistic effects may carry a more direct meaning, this does not necessarily equate to a higher degree of narrative transportation coding in what is perceived. Chattopadhyay (2021), in contrast, highlights how abstract sounds, encompassing deep sound design effects and impactful atmospheres, often possess a more pronounced narrative coding, evoking a comparatively subdued emotional response (for example, a low rumble atmosphere conveying tension, as articulated by Chattopadhyay through the term "manufactured presence").

Rather we do not agree with a rigid definition between the various categories, we see the functional aspects in understanding mostly how the two “oppose” categories of encoded and embodied work within our framework.

- “Being-inside” and “Being-in-front”

Encoded and embodied sound, when considered in relation to the perceiver, manifest two distinct qualities:

1) The encoded sound, comprising linguistic effects and M.S.I, employs spatial qualities to provide the perceiver the ability to comprehend and construct a material representation of the presented world. This comprehension is not contingent on visual cues; for instance, the reverberation of a footstep can evoke an imagery of the space without relying on visual information. So, through their characteristics, they are fundamental in two of the points expressed by Chattopadhyay in the mechanism for activating poetic presence, as they influence site-awareness and the asynchronism of space expansion.³⁵

2) Embodied sounds exhibit a spatial expansion wherein the sounds of the presented world envelop and encircle the body of the perceiver. This results in a fluidity of boundaries between the presented world and the perceiver. These sounds also express qualities that enchant poetic presence through the asynchronism of image and sound, causing disruptions in the narrative visual flow.

These two qualities encapsulate the essence of the model, emphasizing the integral aspects of "being-inside" and "being-in-front". As articulated by Ryan (2001), these poles significantly contribute to the analysis, asserting that “we could not feel immersed in a world without a sense of the presence of “object”. And the object cannot be present if they where’t part of the same space of our body”. In this perspective, "distance" and "proximity" play a fundamental role in understanding how the "being-in-front" and the "being-inside" are seamlessly integrated, shaping "the tension between body and screen [as] an emotional and cognitive tool" (Morse, 1999).

A key takeaway from this section is to underscore the significance of both encoded and embodied sound. When constructing an audiovisual discourse, it becomes essential to acknowledge the profound narrative and emotional impact it can wield and the multiplicity of interpretations it can demand for a particular scene. The versatility, emotional resonance, and attribution of meaning of abstract and linguistic sounds should not be underestimated, as they play a vital role in their interplay. The narrative environment encompasses all these spectra. At one side, it goes beyond categorizations of being more narrative or linguistic; it is presented as "being-in-front" in relation to the perceiver, creating a symbolic connection to the world that those sounds emanate through their specificity in that space. On the other hand, sounds like music, atmosphere, room tone, and impactful sound design effects do not create

³⁵ By "asynchronism of space expansion," I mean that even when the visual is not clearly defined, these sounds may express the quality of the surroundings by creating their own meanings and provoking unique responses from the perceivers.

this dual correlation but directly impress on the body. These sounds have a stronger impact on emotional connotation due to their direct influence (Hallam, S., Cross, I., & Thaut, M., 2017). Hillman's and Murch's categories have been fundamental in shaping our personal approach, mainly in recognizing the relationships that coexist between various sound “realities” and the perceiver. However, in light of the concept of post-immersion during the sound mix, how can these movements integrate and contribute to the creation of a fertile acoustic environment?

2.5 Superimposition, Clarity within Density, and the Interplay of Macro and Micro Elements

- Harmonic and Non-harmonic superimposition

“ The space where to evoke and inspire, rather than overwhelm and crush the imagination of the audience” (W. Murch.2005)

Murch's (2005) approach involves a division of sound based on wavelengths and frequency ranges. He draws a compelling analogy between the perception of sound complexity and the way we observe colors in an image. Just as we can identify different colors in an image to discern edges and shapes, the harmonic relationships between different sound frequencies can create a spectrum of perceived sounds. To illustrate this concept, Murch uses the analogy of a C major chord, composed of C, E, and G. When played together, they form a harmonious cluster that presents a new sonic quality. Similarly, in a soundscape, if winds have the same pitch, they may not be perceived as diverse. However, when various pitches are present, the soundscape becomes more acoustically varied and a fertile acoustic environment. This harmonic complexity in sound plays a significant role in our ability to identify sound sources. Listeners are adept at comprehending the evolution of musical narratives and distinguishing between different sound elements through selective listening. However, when harmonic relationships break down, the complexity can devolve into chaos, making it challenging to discern individual components. These principles of stratification and harmonic relationships extend beyond music and apply to various non-musical structures. An illustrative example of this is Murch's approach to sound design in "Apocalypse Now" by Coppola, F. F. (1979) where he opted to record individual crickets rather than a field of them, constructing the soundscape much like composing a melody from individual notes. This approach showcases the significance of thoughtful sound design in creating immersive audio experiences and a specific site-presence.³⁶

³⁶ https://www.youtube.com/watch?v=LXL5_tc8UyY. Last opened on 26/11/22

- Clarity within density in a fertile sound environment

We further explore Murch's concept, this time introducing the "law" of two-and-a-half. This "law" is exemplified in the stacking of footsteps sounds, one layer of footsteps can be easily discerned and visualized, as can two layers. However, when a third layer is added, the individual layers merge into a group, making it challenging to distinguish individual parts. In this context, the "law" suggests that for a spectrum of sounds to maintain clarity within density should not exceed two and a half layers. Attention cannot respond uniformly to all stimuli and the perceptual counterpoint offers a potential solution to this issue. In a cinematic scene characterized by the exclusive presence of a musical effect area, particularly one featuring a singular soundscape such as the wind, it is conceivable that the auditory experience may be dominated by the sound of the wind itself. However, within the ostensibly simple sonic profile of the wind, numerous underlying tones can be discerned, owing to various processes like the application of bandpass filters and modulation of the fundamental frequency. In this specific context, the creation of a musical counterpoint involving multiple superimpositions remains feasible while preserving clarity amidst sonic density. Conversely, should one introduce more than three distinct types of wind sounds *without establishing* a counterpoint, the result may be an auditory landscape characterized by density but lacking in perceptual clarity.

Continuing in line with Murch's theoretical framework, the incorporation of multiple premix layers introduces the challenge of orchestrating the balance between these diverse stratifications to facilitate the narrative's progression. While the original "two-and-a-half law" pertained to a single spectrum of sound elements (music, dialogue, music effects, linguistic effects, and sound design), its extension becomes imperative when seeking equilibrium among these distinct spectral components.

Taking into account the lateralization of cerebral hemispheres, it is possible to extend this framework from three to five spectra, thereby ensuring that perceptual engagement maintains a delicate equilibrium between clarity and density. These five spectra are strategically distributed across the audible spectrum, following a hierarchical structure that is contingent upon the narrative relevance of each stratification over the others. This approach facilitates the creation of a sonic landscape that prioritizes clarity within a fertile sonic environment.

After delineating the wide range of the semicircle, we proceed to explore the internal dynamics within each category. Specifically, we delve into the concepts of harmonious/not harmonious relationships and the superimposition of layers. This exploration is driven by the imperative to not fall into "the overwhelming " perceptual crisis over the dimension of sonic discourse.

2.6 Analytical integration: Bridging sonic thinking and the immersion-presence paradigm

- Since we cannot ostracize immersion, as a fundamental part of contemporary aesthetics, how can we find a juncture between immersion and presence?

Defining the approach to narrative environment.

Editing

- Accumulation and Multiplication
- Presence of environment sounds
- Asynchronism
- Poetic intervention
- “Being-inside” and “Being-in-front” environment

Mix

- Harmonic and Non-harmonic superimposition
- “Being-inside” and “Being-in-front”
- Clarity within density in a fertile sound environment

“We see sound design, therefore, as the music that drives a dance between the real and imaginary, enabling the embodiment of the imaginary of both image and abstract sound, carrying the willing spectator through the flow in and between phenomenological engagement and objective cognition. *Surrendering* to the dance, to the ebb and flow, is what filmmakers and sound designers hope audiences will do, and sound’s flexible position between real and abstract, we posit, seduces the *surrender*” (Novack, 2023, p.71-72)

The concept of presence through various literature reviews has been more influential as is the duality of this process. **Presence wields the capacity to reconfigure the spatial relationship between perceivers and the frame, generating a complex web that manifest through various strata of engagement.**

The cinematic point of view developed “as having an inherent tendency to blur distinctions between personal and impersonal, external and internal, visible and invisible, ordinary and extraordinary, and viewer and viewed.” (Raviv, 2016, pp.163-164), is the role of spatial and poetic presence as intended in this investigation.

This requires a delicate interaction between the layers that make up the narrative flow, avoiding an excessive and overwhelming sensory experience. In this context, presence is synonymous with clarity within the dense immersion, is the interrelation between “being-in-front” and “being-inside”.

The relationship between bodies, seen as resonators, and the cinema screen becomes increasingly dynamic, transcending the boundaries of the visible realm.

The second segment delved into the identification of pre-existing models that can aptly encapsulate these concepts. Primarily stemming from the exploration of 'crafting the sound narrative', the processes of multiplication and accumulation emerge as dynamic forces that delineate two fundamental concepts:

- 1) The two 'forces' are directly proportional to sound dynamism, not intensity per se. Our exploration revealed that different intensities can yield the same effect of continuity and discontinuity, as evidenced in the Presence-in-Absence paradigm. For instance, a room tone can possess high sound intensity yet maintain continuity.
- 2) Beyond their connection to sound dynamism, the forces of accumulation and multiplication also mirror the intricate relationship between poetic presence and spatial presence. Spatial presence is predominantly activated through two primary processes: spatial update and spatial attention. The stimuli within a given soundscape play a pivotal role; when the discontinuity of certain input diminishes, spatial presence is no longer directly updated, and automatic attention wanes accordingly. In its place, deliberate attention takes center stage, embodying the essence of multiplication processes. However, their most significant representation lies in facilitating access between the inner and outer realms.
- 3) Encoded and embodied sound are intrinsically connected, expressing two spatial qualities and emotional resonance. Encoded sound confines the cinematic space to specific focal points of attention, while embodied sound possesses greater spatial expansion but a stronger impact on emotional connotation.

Having identified the two primary 'forces' and their interconnections, we can now delineate the trajectories of sound narrative evolution:

Where do we desire heightened automatic attention, directing focus toward the actions unfolding on the screen?

Where should deliberate attention prevail, fostering a more introspective state?

How do the embodied and encoded sounds interact within these demarcations?

Having defined the macro processes and their interactions, the creative top-down process (re-recording mixer) ensues. At this stage, once the focal points of the sound narrative are established, a fundamental process of perceptual "cleansing" takes place.

The central emphasis during the re-recording mix stage encompasses a broad spectrum of responsibilities. However, our primary focus centers on a specific type of interaction: how the sound stems interplay and contributes to the evolution of the narrative.

Starting with a heightened emphasis on poetic presence, my approach has evolved to articulate a necessity for "clarity-within-density".

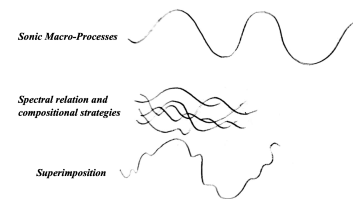


Figure complementing Figure 6, a visual example.

Compositional strategies

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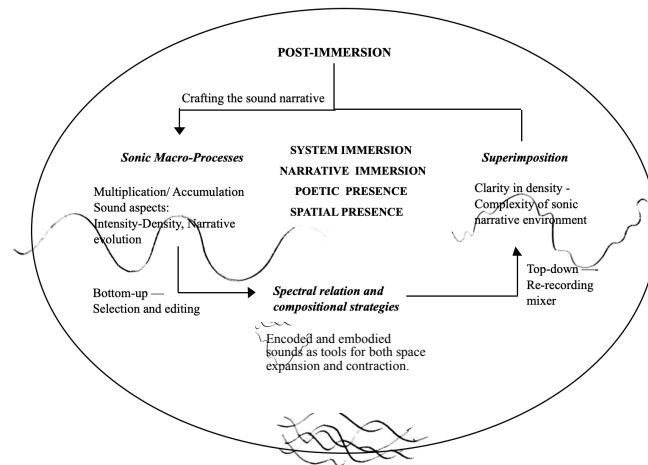


Figure 8, Compositional strategy cycle

Part II - from chapter 2.1 to 2.6

Crafting the sonic narrative

Editing

- Accumulation and Multiplication
- Presence of environment sounds
- Asynchronism
- Poetic intervention
- “Being-inside” and “Being-in-front”
- Clarity within density in a fertile sound

Mix

- Accumulation and Multiplication
- Harmonic and Non-harmonic superimposition
- “Being-inside” and “Being-in-front”
- Clarity within density in a fertile sound environment

Chapter III

Practical Inquiry: Exploring Personal Endeavors

This research should not be construed as a critical analysis; instead, it serves as a comprehensive and multifaceted endeavor, encompassing both theoretical inquiry and practical application. The driving force behind this curiosity is a fundamental desire to explore the realms beyond the conventional notion of immersion. Furthermore, it seeks to shed light on how these theoretical insights can be effectively translated into practical creative endeavors. This pursuit is conducted from a deeply personal standpoint, motivated by an intrinsic passion for the exploration of sound, space, and narrative within the cinematic realm. The proposed approach encompasses a compositional strategy designed to harness two distinct senses of presence: the poetic and the spatial. These senses of presence are conceptualized as sonic strategies employed to convey narrative elements within the context of an immersive 7.1 audio environment and an exhibition comprising six screens but with a stereo setting.

Prior to discussing the audiovisual works, we should describe how the analytical section was approached. It is organised into three stages that follow the compositional strategy cycle of figure 6. Each section is approached by explaining how those process are applied and what is the effect desired.

Link: https://drive.google.com/drive/folders/1tjHhRHX6UwZPrbIWfAqG-OMFUcUoPL0i?usp=share_link

3.1 Re-sound Design: Resounding Inner and Outer Space Through Sonic Expansion and Contraction

The re-sound design project involving a scene from the film "Arrival" directed by D. Villeneuve was initially undertaken during the first year of my master's program at Lusofona University. Initially, the project was executed in a stereo format but was subsequently adapted to a 7.1 audio configuration as part of my ongoing thesis project.

The rationale behind revisiting and reworking this project was rooted in the profound thematic depth of the film. As the course of my thesis research advanced, it became increasingly apparent that the film's narrative and auditory components resonated strongly with the conceptual framework I was developing within my academic research. This alignment offered a valuable opportunity to harness the film's narrative and sonic elements as powerful tools for effectively conveying the theoretical aspects.

- Overview

As Ford C. (2010) express, in the tapestry of human experience, there exists a profound encounter with a dimension of reality that defies conceptualization. This nonconceptual realm, inherently elusive and resistant to linguistic description, manifests itself through the medium of sound. Sound serves as a bridge, enabling the character to traverse the chasm between the conceptual and the nonconceptual.

It is within the precincts of musical presence that entirely novel and unfamiliar modes of existence come to light. These modes are inherently tied to the unique temporality of the nonconceptual world that music unveils. In this temporal dimension, the boundaries between subject and the space blur.

The endeavor of this re-sound design sought to achieve a sonic translation, a metamorphosis of spaces wherein the sounds and the beings that dwell within them share a profound connection transcending fragmented times and memories. It is akin to a "river" of sound that weaves its narrative not only in tandem with what unfolds on the screen but also extends beyond those visual confines. This sonic metamorphosis aimed to immerse the audience in a rich tapestry of auditory experiences, seamlessly merging disparate temporalities and memories to create an evocative natural soundscape. Within this environment, spaces expand and contract in a continuous oscillation, blurring the lines between the real and the imaginary.

3.1.1 Narrative immersion and processes of accumulation and multiplication

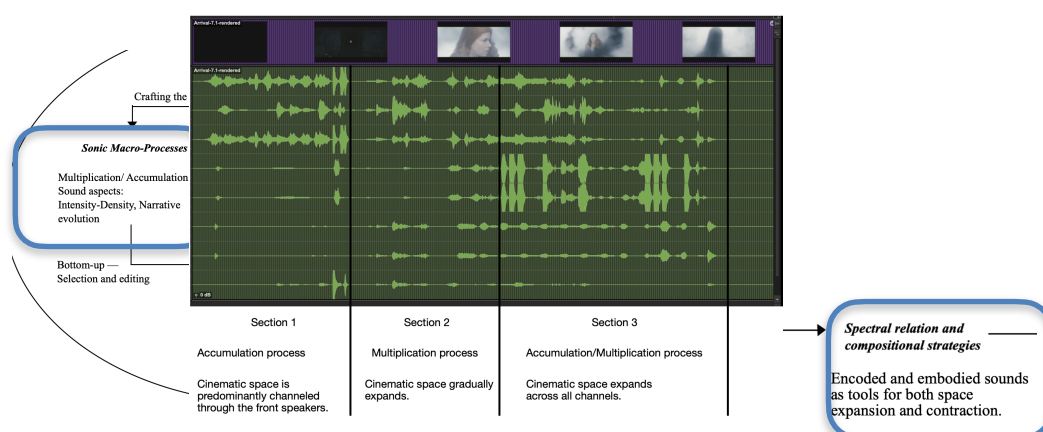


Figure 9: “Arrival” 2016 directed by Villeneuve

As the scene unfolds, the initial moments are marked by the emergence of the first accumulation process. In the midst of this transformative event, a sense of confusion permeates the air. A subtle commotion can be heard, resembling the hurried movements of a child scuttling about. Simultaneously, a breath, originating from behind our backs, passes over us, carrying with it a sense of anticipation. She opens the eye. Accompanying this commotion, an enigmatic sound, mysterious and unfamiliar, embarks on a spatial journey akin to that of the breath. It pursues the breath, weaving through the air, as if driven by an inherent curiosity. This merging of the undeciphered sound and the breath creates an intriguing union, as if they have become entwined. Their spatial journey intertwines, evoking a sense of unity and interconnection. The once separate entities blend together, transcending their individual qualities to form a symbiotic relationship. In this fluid symphony of sound and breath, the boundaries between them become blurred, generating a sense of mystery and wonder. Their spatial convergence serves as a metaphorical gateway, beckoning us to embark on a journey of exploration and discovery. In this nuanced soundscape of the diegesis, the off-screen sound, while divided and following a distinct movement, remains distant but clearly present. As our protagonist gazes upon the enigmatic figure. The soundscape itself seems to transform, with various winds expanding the spatial dimensions, creating a mesmerizing symphony.

The off-screen sound, though divided, dances through the narrative, maintaining its distance yet holding a significant role in the unfolding dialogue. It becomes a narrative thread, weaving through the tapestry of this auditory journey, underscoring the complexity of this multi-dimensional exchange.

As the figure and our protagonist engage in this dialogue, it transcends mere words or conventional communication. It's as if their exchange occurs on a profound, almost metaphysical level, resonating with the very essence of the surrounding winds. These winds,

each distinct in its movements, expand the spatial boundaries, enveloping the conversation in a grand symphony of natural sounds.

A burrow, human sounds coming from afar. Silence. A muffled but loud sound manipulates the space, we are falling. (High point of the accumulation process). The gate closes, the nothingness.

A new soundscape, denser and more extended. Breaths come together, and an intense ambience embraces us, it is the same sound as before, but this time we are in it, embedded in it. The floor is stiff, it feels like ice. Sounds reverberate in an extended liminal space but the space resonates too close to us. Layers of sound that come from all around us. We look for the source but only fog. Silence. (Maximum point of multiplication).

A massive figure passes by, the source. We find it behind us. It exposes itself with tones that we don't understand if they are from the space we are in or come from that figure. It begins to move, and the sounds that constituted the space unify with the movement, now we understand the source. A dialogue begins, the circles that are formed widen and shrink the surround, it shapes in relation to them. (Point of accumulation, though of lesser intensity than the previous ones). Some sounds too real, too close to us begin to emerge. The space shrinks in harmony with the indecipherable sounds, dancing in an oscillation of ever-tightening compression. We are transported to another world, and future memories or reminiscences present themselves through dry, close, real sounds. Real sounds evolve along with the unreal sounds of the reality in which we find ourselves. We oscillate between the two worlds, and through this initially detailed oscillation, the edges of the two worlds begin to become more blurred. Where are we? (Maximum point of multiplication). But The unreal sounds have predominance and transport us back into the diegetic; "weapon opens time."

3.1.2 Conceptual and practical framework blending together

Attempting a phenomenological description of the arrival scene helped us unify the three stages described above (macro form - microform and unification). As a first step, we developed a picture of the narrative's evolution, using the attentional processes of bottom-up for the processes of accumulation, and top-down for the processes of multiplication as guidelines for drawing the steps. In this first stage, we discovered that even if these two processes tend toward opposites (higher and lower sound density), they still don't despise the intensity of narrative and attentional processes. Attentional processes become milder in the transition between the two processes and this is due to the more constant presentation of certain stimuli. Continuity and discontinuity are two separate forms but when discontinuity is present in a longer time fades into continuity, while continuity when looked at in microscopic processes, has internal discontinuity evolutions.

Multiplication processes are often marked at their highest intensity by silence, drastically

raising the level of suspense. But the communicative and emotional power of silence perfectly vindicates the meaning of the sense of poetic presence. There is a profound sense of presence even when there are no sound stimuli, only expectations. The presence of silence is very difficult to ignore and plays a significant role in creating focal points for the development of this particular sound narrative.³⁷

To conclude the first stage, we understand how narrative continually oscillates around these two antipodes, and their interplay is inert in sonic thought as an expressive tool.

The second stage narrows down to the analysis of the microform. The different layers can have harmonic and non-harmonic relationships. What emerged from this analysis is that the processes of accumulation often consist of non-harmonic, more jagged superimpositions, which in their dynamism increase a sense of agitation. **The heightened discontinuity and intensity of these superimpositions cause bottom-up processes to take priority, causing them to experience an intense sense of spatial presence that channels attention to the detailed perception of the world presented (LFO theory sense of presence). Multiplication processes, however, follow a more harmonious development that allows attention to be distanced from pure, direct perception. They distract attention from the screen and bring out the subjectivity of the perceivers (Absence state of LFO theory but which we will name in this case poetic presence), but they are nonetheless fundamental in the unfolding of the narrative.**³⁸

3.1.3 Spatial relation and superimposition in the presence framework

This stage shows us how the sense of presence can be divided into two ramifications; a **poetic presence** which is often in conjunction with **multiplication processes**, and **spatial presence** which is often in concomitance with **accumulation processes**. Subsequently, the harmonic and non-harmonic relations, in turn, create a certain type of engagement that depends on the tension that exists between the different superimpositions.

The last stage is characterized by unification. Poetic presence states are open to inter-subjective experience, while spatial presence states require more attentional processing to deal with the site. With these relationships in mind, how were they applied in "Arrival" (2016)?

³⁷ "One of the infant's first discoveries about the outside world is silence, which was never experienced in the womb. In later life, the absence of sound may come to seem a blessed relief, but for the newly-born, silence must be intensely threatening, with its implications of cessation and death. In radio, accordingly, a gap longer than the distance between a few heartbeats is taboo. In film, however, silence can be a glowing and powerful force if, like any potentially dangerous substance, it is handled correctly." *ibidem*. Murch p.4.

³⁸ It is important to note that at maximum moments of multiplication, the impact of silence can have very different nuances from one perceiver to another.



First, I would like to note what I perceived about this scene, which inevitably influenced my choice and editing. She is in a liminal space, a place between, neither here nor there. Where perspectives merge and modify linearly in constant suspended evolution. It is unclear what is real and where reality is. The spaces presented are intrinsic and deeply related, one inextricably linked to the other. As time and space change, what is presented appears in a revised form. *Arrival* is a film where the symbolic and the imaginary compete in a continuous oscillation that warps its narrative. When analysing the film as a whole, the timeline of events is not linear, but circular, in which we are unable to understand the beginning or the end, the future or the present, and the real or the unreal.

These notations made me conceive of a sonic space where the barriers of the diegetic and extra-diegetic continuously merge. The sonic narrative that oscillates between points of poetic presence and spatial presence evolves into a diegetic and extra-diegetic space that is acoustically transparent. As a result, we encounter unrealistic qualities of resonance, evoking perceptions of unrealistic diegetic representations that shift interpretations of sounds toward extra-diegetic functional interpretations. The harmonic and non-harmonic relationships and the spatial narrative use of different superimpositions go beyond. The continuous mutation of sounds that occur between disembodied and embodied penetrate the diegesis and expand to extra-diegetic. Sound trajectories have often been developed in opposite directions e.g., as soon as the scene begins, we hear the breath from behind making a spatial trajectory, passing through the centre of the room and ending up at the centre speaker, but at the same time, the sound of the alien makes an opposite trajectory, i.e., from the front speakers, passing to the centre speaker and projecting behind us. This technique has been used numerous times. These are spatial harmonic superimpositions, which through not only tonal but also spatial interaction, have malformed the limitations imposed by the screen, fluidly creating certain changes.

Initially, from minute 00.00 to minute 1.51, the aliens' space is condensed into a 2D reality behind glass. The soundscape of the aliens although predominant is always placed on the front speakers. This is to create a "distant" and separate sense of space. While from minute 1.51, the soundscape expands to the whole surround and we are completely immersed, almost weighted down. The acousmatic spatial articulation of the soundscapes, again allowed us to significantly shape and expand the boundaries of the screen, which in the opening minutes and as if a screen within the screen was created, and then completely reversed

perspective, us within the screen.

In the initial phase, the distinction between these two spaces was pronounced and clear-cut. However, as the narrative progressed, they began to blend together in an ongoing and dynamic interplay. It wasn't until nearly the conclusion, when the character was projected into an alternate reality or a different present moment, that the crisp, unadulterated foley sounds shattered the liminal boundary. These sounds carried with them precise meanings, creating a stratification of spaces: one that enveloped the entire surround in a form of extra-diegetic sound design, and another, significantly smaller, enclosed within the diegesis.

In conclusion, encoded sounds were often concurrent with the maximum points of accumulation or multiplication. They played a crucial role in directing attention to specific focal points of the narrative amidst the densely spatialized embodied sounds. The interplay between Narrative (encoded) and Abstract (embodied) sound assumes a pivotal role. Notably, there are scenes, exemplified by a pivotal moment toward the film's conclusion when the protagonist delves into her memories, wherein Foley sounds assertively infiltrate the narrative with their highly codified meanings. These sounds not only contract the cinematic space but also profoundly permeate the narrative flow. On the opposing end of the spectrum, we encounter the abstract sounds, which maintain a consistent presence throughout a substantial portion of the film's duration. The meanings of these sounds are not immediately evident; rather, they demand a measure of temporal engagement before their significance becomes apparent. Over time, it becomes discernible that the entire sonic landscape serves as a vehicle for the aliens' method of communication. While many of these abstract sounds are firmly rooted in the diegetic realm, their spatial expansion results in a more indirect alignment between the viewer and the auditory elements. This deliberate strategy of expanding the abstract sounds to such an extent, as previously mentioned, seeks to engross the viewers not by merely positioning them in the presence of these sounds, but by immersing them within the very spatial context of these sonic elements.

3.2 O sol não nasce ao norte (2023) Monica de Miranda - Exhibition at Sabrina Amrani Gallery

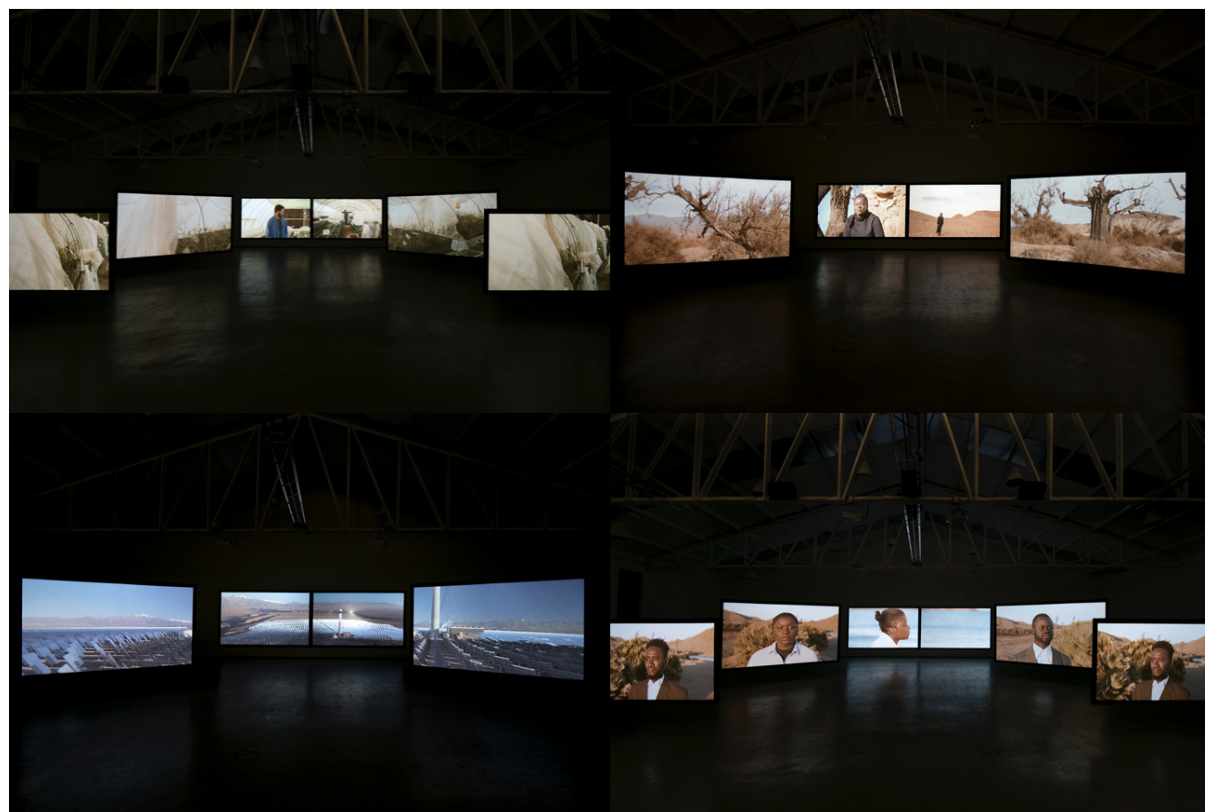


Figure 8. Sabrina Amrani, Madrid ³⁹

- Overview

Monica de Miranda's exhibition, "The Sun Does Not Rise in the North," portrays characters deeply connected to natural landscapes, embodying hope during migration between Africa and Europe. The exhibition delves into complex migrant and diaspora histories, emphasizing belonging and the reinterpretation of post-colonial memory. The exhibition and the film presents narratives of solitary individuals navigating the blurred boundary between fiction and reality within the emotional realm of borderlands.

3.2.1 System and narrative immersion

In contrast to the prior case study, the exhibition "O sol não nasce ao norte" (2022) employs a stereo audio format despite the video content being designed for a six-channel system. The decision to utilize additional speakers was necessitated by the spaciousness of the exhibition venue. Within this context, the visual component assumes a significantly

³⁹ <https://dailyartfair.com/exhibition/16233/monica-de-miranda-sabrina-amrani>

heightened role in shaping the immersive system experience. As spectators navigate the exhibition space, their attention becomes intricately divided among the six distinct screens that command their gaze.

In this multisensory journey, one's faculties are inundated by the awe-inspiring and expansive landscapes that unfold visually, imbuing the viewer with a profound sense of spatial expansion. However, this journey is not a solitary one. Rather, it invites the viewer to navigate a tapestry of sensory stimuli, with attention shifting from one screen to another in a fluid and dynamic manner. The winds, footsteps, rustling leaves, and waves collectively form an intricate auditory landscape that interweaves narratives across the presented images. The sound-world, which encompasses dialogues, environmental sounds, and music emerges as a potent driving force. It not only directs and refocuses attention but also shapes the overarching narrative trajectories that guide the exploration of two intertwined yet indivisible stories.

Within this exhibition, the synergy between audio and visual elements creates an immersive tapestry that embrace the spectator in an evocative experience, where poetic and spatial presence are in continuous dialogue.

3.2.2 Personal Endeavors: Roles, Responsibilities, and Hurdles

At the outset of this project, my focus was primarily on audio editing, which involved handling a substantial archive of live-action sounds. Following the initial stage of conventional editing, which entailed refining the direct recordings, I delved into an in-depth exploration of the diverse soundscapes within the archive.

One of the central challenges I encountered was the imperative to refrain from substituting sounds with cleaner and higher-quality alternatives from my personal library or online resources. This decision was motivated by the desire to preserve the authentic sonic character of the original location. Upon completing the editing of effects and environmental sounds, I discerned a deficiency in the desired balance of clarity and density.

To address this issue, I embarked on a research for specific environmental and natural sounds that were emblematic of the Moroccan region featured in the film. Subsequently, my efforts were directed towards enhancing the effects to engender a heightened sense of proximity for the audience.

Having gained a deep understanding of the essential "marker" sounds that exerted a significant influence on the narrative's ebb and flow, my next step involved the post-production of dialogues. This phase demanded precision and attention to detail to ensure that the spoken words seamlessly blended with the sonic tapestry I was crafting. Following the dialogue post-production, I embarked on the creative journey of composing the film's musical

elements. This was a crucial aspect of the project, as music has the power to evoke emotions, set the mood, and enhance the overall cinematic experience.

While both the dialogue post-production and music composition played vital roles in the final audiovisual product, I must emphasize that this thesis primarily focuses on the intricacies of sound design and its role in shaping the narrative and enhancing the audience's immersive experience. Therefore, I will not delve into the specific details of how dialogues and music were handled in this project.

Indeed, one of the most challenging phases of this project can be attributed to the re-recording mix. This pivotal step marked the culmination of extensive work on individual sound elements, as it entailed the intricate task of harmoniously amalgamating these diverse sonic components.

After refining and fine-tuning each stem, the time had come to weave them together into a cohesive auditory experience. Achieving the desired balance between the various layers of sound was a delicate and demanding process that required a nuanced understanding of how these elements interacted with one another.

The re-recording mix represented the pinnacle of sonic craftsmanship, where the disparate parts converged to create a harmonious whole. It was during this phase that the intricate dance between soundscapes, effects, dialogues, and music reached its crescendo, ultimately shaping the final sonic landscape of the project.

Upon the completion of the film, my involvement extended to an exhibition project, collaborating with another colleague. This exhibition took distinct segments of the movie and seamlessly fused them into a cohesive whole. The primary emphasis here was not on extensive editing but rather on making minor adjustments to harmoniously meld the various visual sections. However, the most demanding aspect of this endeavor once again resided in the re-recording mix stage. Here, the imperative was to ensure that the sound seamlessly bridged the transition from one screen to another, preserving the narrative coherence. In this context, dialogues assumed a pivotal role, strategically directing the viewer's attention among the six screens. Simultaneously, the crafted soundscapes and music served as potent tools to establish a robust and precise site-presence. Through these sonic elements, the exhibition effectively amalgamated the distinct images, creating a unified and immersive experience taking into consideration the poetic and spatial presence of the site.

3.2.3 Spatial and Poetic presence

Monica de Miranda's exhibition, "The Sun Does Not Rise in the North" (2023), serves as a captivating canvas where poetic and spatial elements intertwine. The artistic narrative unfolds with characters integrated into natural landscapes, their presence becoming a poetic

reflection of hope amid the migratory journey between Africa and Europe. The exhibition deliberately explores the depths of poetic presence. The characters, embody a poetic essence, a narrative that goes beyond, inviting viewers into an emotional dialogue with the depicted spaces. Simultaneously, spatial and poetic presence takes center stage within the exhibition. As viewers engage with the art, they navigate not only the visual dimensions but also a spatial journey that mirrors the emotional and psychological narrative environment of the characters. Moreover, the audiovisual components within the exhibition further amplify the spatial and poetic dimensions. As perceivers traverse the exhibition space, the auditory landscape becomes a guiding force, shaping their emotional connection with the poetic essence embedded in the visuals. The characters' resonance and the deliberate orchestration of spatial elements transform the exhibition into an immersive journey, where viewers engage not just with art but with an evocative experience that lingers in the realms of both the poetic and the spatial presence.

- concluding discussion

The researcher embarked on crafting a model by delving into the multifaceted nature encapsulated in the term “immersion”. Within the practical framework, three pivotal categories emerged: system, sensory, and narrative immersion. Delving into the contributions of these distinct phenomena, the conceptualization was expanded to embrace narrative environments, where poetic and spatial presence organically unfold. The efforts culminated in a narrative environment that leverages the embodied experience of site-presence, acknowledging the occasional inadequacy of presenting a “sonic place” to fully capture the intended emotional content. The intentional manipulation of sound perception, involving the identification or representation of a specific viewpoint, aligns seamlessly with Chattopadhyay's notion of manufactured presence (2021). While precision in reflecting a sound reality remains paramount, the necessity to “prefer” one perspective over another introduces a dichotomy between presenting or mediating an individual's singular perception or as expressed by Chattopadhyay's concept of phenomenological non-freedom. Distinct challenges arise when different product types adhere to distinct “rules”, and the applicability of conceiving, for instance, a “fantastic” sound environment is contingent upon the subjectivity and viewpoint of the “creator”. The two proposed case studies navigate this ambivalence. “O Sol Não Nasce ao Norte” (2023) express a direct materiality of soundscape, authentically mirroring a specific place and the unfolding stories within it. Conversely, in a fantastic environment (as for instance *Arrival* 2016), personal sound composition inherently challenges Chattopadhyay's phenomenological freedom.

Post-immersion is the fundamental aspect of this research, evaluating and incorporating a contemporary crisis. What the journey revealed is that the demarcation proposed by Chattopadhyay is not fully applicable in all context. First of all, the generalisation within the concept of immersion that do not take into consideration the plurality of the various dimensions of immersion. The phenomenon of immersion, even in its generalization, stands as a potent tool, not to be discredited for stylistic inclinations and choices. However, it is imperative to focus on the communicative power inherent in such immersive phenomena. What I observe, whether in products more inclined towards the integration of poetic and spatial presence or those less inclined, is that various forms of immersion and poetic presence are both indispensable in fostering communication between the observer and the observed. These represent the dual aspects of “being-inside” and “being-in-front” in the realm of sound communication, wherein their interplay profoundly influences these propensities throughout the process. The personal model I have developed takes these considerations into account and endeavors to integrate them into sound practice.

The compromise of phenomenological freedom prompts consideration of how to uphold a specific notion of 'poetic presence'. In our context, poetic presence arises through a multitude of studies and models, embodying practical properties.

More specifically, the editing stage initially involves identifying processes of multiplication and accumulation, with sonic "narrative lines" delineating heightened intensity points. Subsequently, attention shifts to the presented space and its intrinsic characteristics, exploring how, on the sonic level, it serves as a conduit for spatial presence. There are three additional properties that are discussed in detail, each of which is responsible for dissociating and amplifying the relationship of sound from image. These properties—Asynchronism, Poetic Intervention, and 'Being-inside' and 'Being-in-front'—aim to transform the divergence between sound and image into a mode of expression.

The mix stage is further influenced by additional properties. Reviewing the macroscopic processes of accumulation and multiplication, the focus is narrowed to each individual process. The density-in-clarity dynamic and harmonic/not-harmonic relationships are two key characteristics that contribute to the formation of various superimpositions. Perceptual counterpoints can be constructed using these elements, this counterpoint not only fosters a rich and fertile sonic narrative environment but also safeguards against lapsing into perceptual overwhelm.

This framework strives to foster an understanding of, and proficiency in, recognizing and developing these fundamental concepts of presence.

Concluding reflection and personal insights

Art possesses a remarkable capacity to unveil aspects of the world that we may not typically encounter in our daily lives, or even realities that are close but we do not have access to them. Art's ability to present alternative realities enables individuals to engage with them, eliciting a broad spectrum of emotional responses, such as wonder, contemplation, shock, tears, laughter, and, importantly, deep thought. In essence, it brings individuals closer to new perspectives, to new openness. In my modest role as a young sound practitioner, it is my responsibility to embody and manifest some of these realities and the sonic narratives woven within them. This research recognizes and acknowledges the aspect of personal endeavour to enrich and broaden my knowledge in a field and topic that will undeniably gain greater prominence in the future. The research is driven by the ambition to explore these topics deeply and understand their potential implications, not only on my own artistic development but also on the human experience on a broader scale. Despite the fact that my research does not include a quantitative analysis of the interaction between these phenomena and the perceivers, this is an area of study I consider to be critical for my personal understanding of the significance of these phenomena.

“Contrary to what Chion had envisioned, today’s multi-channel universe of film sound builds surround environments, assuming that audiences will understand that sounds originating in the surround channels are part of the same diegetic space as those originating onscreen (Kerins 2011), expanded with elaborate details beyond the screen. Innovative practices with sound in the digital realm lead to new experiences in which audiences engage with cinematic sites through immersive listening, employing a spatial cognitive engagement with sound. These practices need new theoretical models and approaches to expand those already existing (e.g. Chion). **These new approaches should include studies of sound that look and listen beyond the domination of the moving image**, with its screen-centric tendencies. (Chattopadhyay, B. (2017) Audible absence: searching for the site in sound production, Leiden University, p 92)”

Glossary

System immersion	Immersion as the objective, system-dependent aspect, that incorporates a listening mode considering factors such as the range, expanded directionality, and power of sound sources to create an auditory experience closely resembling natural and unmediated listening.
Sensory immersion	the sensation of being enveloped by the surrounding environment and psychological state characterised by perceiving oneself to be enveloped by, included in, and interacting with an environment that provides a continuous stream of stimuli and experience.
Involvement	individual's attention and concentration on the experience.
Absorption	Absorption means directing attention to an experience that is brought to mind.
Narrative immersion	The feeling of being inside a story, completely involved and accepting the world and events of the story as real.
Fictional immersion	It represents a suspension, a moment of forgetfulness when we become deeply absorbed in a story, to the extent that the events depicted become part of our real world. It's a suspension and negation of the logic of reality, becoming flexible in the face of the imaginary world presented to us.
Engagement	Refers to audience's interest in continuing watching, hearing etc..
Engrossment	Delves into the emotional sphere, reflecting the emotional investment in the narrative, character, and more.
Spatial presence	Individual's perception becomes entangled in the stimuli presented by a medium, causing them to feel situated within the environment, and create a state of non mediation of the site.
Manufactured presence	Intensification of presence for engagement purpose.
Poetic presence	Contemplative and associative state of the proposed world, and a creative model of producers that encourages "incisiveness and sensitivity to the site-specificity of sound".

Narrative environment	Fertile auditory environment, where the phenomena of poetic and spatial presence unfold.
Perceivers VS Audience	The term "audience" is derived from "audientia", which means "to hear". Hearing, in this context, is not an intentional effort; it involves a passive encounter between the person and the sound input. Therefore, I will not frequently use the term "audience" in this thesis. Instead, I prefer to use the term "perceivers". The choice is based on the etymology of "perceive", highlighting the intrinsic and active relation between individuals and their auditory experiences.
Psychological projection	Involvement in the sense of focusing attention on the virtual environment.
Physical projection	Spatial presence or the sense of being in a place.
Evolutionary primacy Deliberate attention	The theory of presence beyond its relationship to the medium Applied to sound sphere, involves a conscious and controlled focus on specific audio elements. It encompasses intentional cognitive efforts directed towards the purposeful listening and analysis of sound, highlighting a heightened awareness in the process.
Automatic attention	In sound context, it involves the involuntary and spontaneous directing of cognitive focus in response to unexpected external stimuli. This occurs without conscious effort on the part of the listener, highlighting the capacity of certain sounds to capture attention without intentional engagement.
System immersion technologies	It is fundamental to note that this term is deeply cultural, the immersive technology of the 900 are not the same of nowadays. What we mean by system immersion technology as intended in this thesis is correlated to the concept of system immersion of chapter 1.2.

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