Master Thesis

Culture, Communication, Globalization

Aalborg University

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From photojournalism to social semiotics: a study on how A.R.T.-based research reveals patterns of talking about sustainability

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Abstract

Since its publication in the Brundtland Report, the sustainability discourse has largely occupied international debates. Within the scientific, political, and economic domains, scholars have studied this issue with uneven emphasis depending on the direction of other global affairs. Yet, although this topic is interdisciplinary per nature, the existing literature on sustainability is quite polarized. It is only recently that it has registered contributions from a broader pool of academic fields. In this scenario, the thesis argues that there are hybrid ways of doing research that can offer critical insights into sustainability. Therefore, the present work harbors arts, social semiotics, and multimodal investigations to help bridge the mentioned gap in the study of durable development. Ontologically framed by post constructivism and post-humanism, it is relevant to underline that the thesis' concepts (for instance, the very notion of art) are not intended as objectively definable entities but rather as ongoing social practices. In this optic, the epistemological roots of the investigation consisted of interpretivism and hermeneutical phenomenology, and Actor-Network Theory was chosen as the overall iterative strategy. Considering these fundamental pillars, the present research identified Aqua Mater, an art exhibition for 2022 Word Water's Day, as its case study. In detail, after that a micro ethnography of practice has collected the data, starting from Salgado's photographs, the analysis has blended multimodality and semiotics. More specifically, to approach the dense dynamics of the signification of the exhibition, the research designed an analytical route that connected, among others, Lemke's (1993) study of the three aspects of meaning-making (namely the Presentational, Orientational, and Organizational one), with Iedema's (2003) understanding of resemiotization, and Van Leeuwen and Jewitt's (2004) 'Handbook of visual analysis'. In this respect, the first phase of investigation of photo 23 was followed by a second phase focused on picture 24 and, finally, a concluding one deeming the two photos together. As a result, the findings revealed that the *actors* of the photographic representations (i.e. light, water, etc.) interacted with each other, at times, to invite the viewers to react to specific messages and, at other times, to present powerful cultural symbols triggering critical thinking. Besides, from a semiotic perspective, the research has explored and described how meanings were not homogeneously negotiated, thus, made indisputable, but rather they remained open to change and were mediated by the overall dynamicity of the communicative space. In conclusion, the thesis argued that, although events like World Water's Day create inspiring spaces for social and critical reflection, creative or art-based (re)actions to sustainability issues are yet to be socially agreed upon.

Keywords: photojournalism, sustainability, ANT, resemiotization, spatialities

1. Introduction

Understanding sustainability is like painting a cubist picture: you need to consider different perspectives, make observations from various angles and lights, and recognize the subject in analysis as multidimensional. In the same way that the artist had to move around the room equipped with multiple brushes and pencils to complete this process, sustainability studies should move from one field to another and interchange responsibilities among different experts. In brief, if cubism was a "new way of representing three-dimensional reality on a two-dimensional surface" (Wilson, 1983 as cited in Olive-Thomas & Harmeling, 2020, p.820), sustainable development is the study of a multidimensional issue that depends on and results in interdisciplinarity.

Recognizing the issues aforementioned, in 1984, the UN decided to open a commission to design a common strategy that approached development as shared, viable, respectful for the environment, and prompted by equal objectives. The work of the consequent World Commission on Environment and Development culminated in 1987 with the publishing of the report 'Our common future' which, besides influencing global environmental politics, took the unprecedented step to define this 'new' form of growth as *sustainable*, to wit, as "meeting the needs and aspirations of the present generation without compromising the ability of future generations to meet their need. It is a form of progress for social and economic development that enhances the resource base rather than degrades it. It requires a more equitable distribution of wealth (…) and it aims at (…) keeping options open for the future." (Brundtland, 1987, p.292). As such, this was and is an international and intercultural issue that, per definition, goes beyond geographical or temporal boundaries, and fosters shared objectives and solutions.

To a certain extent, the Brundtland report anticipated the 'fluid' nature of contemporary problems that do not concern only how issues originated or their resolutions, but also how they should be approached. In this regard, Shrivastava, Ivanaj, and Ivanaj (2012) claimed that to achieve sustainability, it is crucial to "go beyond science and (…) combine science with arts (...) to gain a holistic and passionate implementation" (Shrivastava et al., 2012, p.25). On a more theoretical level, this specific combination can be explained by considering the arts as fuels for emotions and, therefore, more personal and passionate forms of commitment (Shrivastava et al., 2012). However, this link has been analyzed but rarely by interdisciplinary studies: it is a challenging and stimulating field of research that calls for a delicate balance between academic validity, and emotional and intersubjective dynamics, and it constitutes the starting point of this thesis (Chen, 2018).

Scholars already agree on the influential position of culture within social, economic, and

environmental phenomena. However, when it comes to sustainable development specifically, the analysis of 'cultural sustainability' and 'art sustainability' are yet to have been exhaustively discussed (Petti, Trillo, & Makore, 2020). Notably, this thesis will study the role of art and its social impact as it assumes that "the naïve notion that science seeks truth, while art seeks beauty, is wrong on many counts" (Goodman, 1976 as cited in Shrivastava et al., 2012, p. 27-28). Indeed, for years, philosophers labelled arts-driven analyses as isolated and (unnecessarily) complex methods due to their dense concentration of intersubjective experiences and emotional variables (White & Hede, 2008 as cited in Walmsley, 2018). Yet, by recognizing that art is not simply a synonym of aesthetics, this research acknowledges the production, consumption, marketing, and media dimensions of it but focuses on art as a cultural *practice*.

In this optic, it is crucial to stress that, if on the one side, human agency, customs, and traditions are constant components of this social process, on the other, their mutual interaction or reaction to present circumstance is relatively flexible. In other words, "practices sustain and abet change while remaining the same practice" (Carroll, 1988, p.143).

Taking a step further, within these ongoing social actions it is fascinating to explore their tendency of creating meanings and symbols through aesthetic engagement and investigation. The former relies on the creation of shared thoughts and feelings that prompts a reinforced sense of community based on common perspectives (Dewey, 1934 as cited in Shrivastava et al., 2012). The latter consists of an emotional inquiry and thus awareness of reality, resulting from thinking and studying with colors, images, sounds, feelings, taste, olfaction, and physical reactions (Fox & Amichai-Hamburger, 2001 as cited in Shrivastava et al., 2012). In brief, according to Halliday (1978, as cited in Lemke, 2009), this critical role of aesthetic makes art a *means for* and an *actor of* communication or, in other words, a "semiotic resource system" (Lemke, 2009, p.283).

1.1 Problem formulation

During his sociological research, Bourdieu (1968) drew the attention on the rules of readability of the arts: every movement and period have indeed a distinct language that differs according to, for instance, genres, or codes. In this regard, as the thesis will not consider art as 'passive' tools of communication nor conduct a targeted study on communication, to read the artifacts in analysis, it will be necessary to remember that they are ongoing processes (Lemke, 2009). Notably, it will not be a matter of focusing on them as *social* elements but rather as *associating* elements, thus, applying Latour's 'sociology of associations' (Latour, 2005). In this concern, the

readability of artifacts will depend on a dynamic interrelation, or in ANT terms, *translation* of human and non-human activities that results in multimodal processes of signification (Carroll, 1988; Moxey, 1991).

In light of these considerations, this research will start from Aqua Mater[1], the photo exhibition of Sebastião Salgado in collaboration with UNESCO for the 2022 World Water's Day. This event consists of a series of initiatives aiming at bringing the international public debate on sustainability through different forms of engagement including forums, webinars, and artistic exhibitions. Significantly, the involvement of Salgado, who is considered a legend in his field, will *associate* (Latour, 2005) the thesis with the genre of photojournalism (Mraz, 2002). Accordingly, this thesis will question the *associations* (Latour, 2005) between photojournalism and social semiotics, and how are meanings and patterns of talking about sustainability created or represented by Aqua Mater. More specifically, the problem formulation consists of the following research questions:

● Starting from the photos of Sebastião Salgado, how can a multimodal semiotic analysis trace back the *associations* (Latour, 2005) between sustainability and the art of photojournalism?
● How are these associations *translated* (Latour, 2005) in processes of meaning making and resemiotized[2] within the exhibition Aqua Mater?
● Which patterns of talking about water are produced by the 'semiotic resource system' of Aqua Mater's photographs (see Lemke, 2009)?

1.2 Plan

To address this problem formulation the thesis unfolds according to the following structure: firstly, chapter 2 informs on the ontological and epistemological roots of the research, as well as describes the overall research design, and the specificity of the methods of data collection and analysis.

Afterward, in the third chapter, an overview of the theories and, more in general, the existing literature on sustainability, place, aesthetics, photojournalism, and semiotics provides the reader with a solid understanding of key topics and concepts.

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[1] Opening on the 1st of April 2022 and lasting until the 22nd of September 2022.
[2] The concepts of *translation* and *resemiotization* will be clarified throughout the following chapters. However, resemiotization can be synthetically understood as a process that enables the thesis to question semiotics by 'moving' from one *association* to the other and from one semiotic mode to the other (Iedema, 2003).

In light of those considerations, chapter 4 consists of the heart of the thesis - the analysis. Notably, the multimodal semiotics investigation examines the exhibition Aqua Mater to outline its associated processes of meaning-making.

Then, chapter 5 articulates a targeted discussion on the findings of the analysis to *translate* them with the thesis' key concepts and, ultimately, to return to the leading research questions.

Finally, the research will end with a conclusive revision (chapter 6).

2. Methodology

2.1 Philosophy of science: ontological and epistemological considerations

Drawing back to the metaphor opening the introduction, the first step to approach a cubist picture (and thus a multidimensional issue like sustainability) is to choose the proper set of brushes and pencils with which it is then possible to start sketching the subject (MoMa, 2017). Similarly, the first step of this thesis consists of identifying a method that can both frame and orient this vast area of research.

In this regard, Lyotard (1979, as cited in Shank, 1993) stated that, in the postmodern world of today, there is no such thing as a single perspective or a fixed and ideal way to conceive an investigation. Ontologically speaking, nowadays, understanding multilevel interactions presupposes accepting that the world is not composed of limited and immutable entities but rather of "dynamic process of intra-activity" (Barad, 2003, p.817), in which systems and structures are continuously reconfigured and (re)negotiated. In this ongoing flux, what matters and, therefore, constitutes a relevant subject of analysis is "not a thing but a doing, a congealing of agency" (Barad, 2003, p.828). In the same way as cultural practices are changing but consistent entities, the social world is constructing and interacting. In other words, the ontology of the thesis is post constructivism.

Moreover, within post constructivism, a post humanist- influenced way of thinking questions the limits of social structures and how they are categorized (Wallace, 2010). Notably, the distinction between human and non-human entities or agencies becomes not automatic nor acritical as they all concur to these iterative exchanges (Barad, 2003). Therefore, artists, artifacts, and artistic processes are all influent *actors* (Latour, 2005) under this perspective.

As emerges, choosing a way to approach such complex reality and, thus, epistemologically orient the thesis is not a simple task. Indeed, it is a matter of establishing a methodical reading of social and, therefore, intersubjective actions (Schwandt, 1994). In this regard, the research will follow an interpretive path of inquiry. To elaborate on this choice, it is necessary to explicit a first connection between the academic framework and the practical side of the present research: studying social sciences and art can and will be a similar operation. As a matter of fact, an art-based inquiry has an emphasis on contextualization and interdisciplinarity and so does social analysis (Sullivan, 2006): Notably, moving through the multiple stages of understanding practices, it is at first the artist that produces a personal interpretation of a topic. Later, critics and audiences discuss the artifacts and produce another kind of interpretation. Finally, social scholars delineate a form of

knowledge of the 'social' that could be seen as an academic debate between different interpretations based, in turn, on interpretations (Taylor, 1971 as cited in Schwandt, 1994).

It is relevant to underline that, this web of interpretations does not translate into essential unreliability or nihilism. Rather, it results in the need for a detailed and structured method of analysis and methodology overall that, hence, provides a firm basis for research.

In this concern, together with interpretivism, epistemologically speaking, the thesis embraces a hermeneutical-phenomenological position (Della Porta & Keating, 2008). 'Historicality', context, and linguisticality³ are paramount as they primarily create and construct meanings. Accordingly, Bleicher (1980, as cited in Schwandt, 1994) argued that a *hermeneutical circle* is the "condition of understanding […] [it] provides the link between […] theory and praxis" (p. 267). Furthermore, the hermeneutical-phenomenological attention to 'meanings' and 'meaning-making' is crucial for the present research because, on the one side, it reflects the interest in semiotics aforementioned in the problem formulation and, on the other, it orients the process of interpretation (Bryman, 2012).

Besides, Barthes' (1981, as cited in Pearson, 2019) phenomenological analysis of photography further clarifies this last consideration. While scrutinizing engaged photographs, he concluded that there are two constant elements in pictures: the *studium* and the *punctum*. The former is the "vague [dis]interest" in that specific cultural artifact (see Pearson, 2019, p.10) deriving from the audience's education (in Latin 'studium') or, for researchers, existing knowledge on the matter. The latter, instead, is "that accident which pricks me […] [and] that was not strictly intended by the Operator […] but resonates with the Spectator" (see Pearson, 2019, p.11). Paraphrasing and elaborating on Barthes' terminology, the *studium* is the ratio behind the thesis' choice of hermeneutics and phenomenology, while the *punctum*, which is subjective or intersubjective, motivates the interpretive perspective.

Finally, as the philosophical stances of the research have been discussed, to continue structuring the methodology, the logic of inquiry will be presented in the following section.

2. Research approach

The combination of post constructivism, interpretivism, phenomenology, and hermeneutics results in a dynamic approach towards the existing literature and the data which, therefore, requires

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³ This thesis will not deal with linguistics specifically but will acknowledge the importance of terms by discussing and, thus, defining the leading concepts in the following chapter.

a further elaboration. In particular, this thesis adopts inductive and deductive logics in a complementary way, thus following an iterative approach. More specifically, the induction starts from raw data and intends to go beyond restraints dictated by theories, or a (highly) rigid methodology. In other words, "the researcher begins with an area of study and allows the theory to emerge from the data" (Corbin, 1998 as cited in Thomas, 2006, p. 238). On the other side, the deduction begins by blending the existing theories or assumptions on a topic to identify some leading hypothesis for the successive analysis (Thomas, 2006). Thereby, the two components of the iterative process respect and mirror the ontology and epistemology frames of this work.

Moreover, in the present case, where art practice is conceived as a subject and method of research, the resulting investigation involves "creative action and critical reflection" (Sullivan, 2006, p. 28), cognitive processes and interpretations, and flexible "act[s] of reading" (Shank, 1993, p.920) *signs*.

Thus far, before deepening this last terminological choice and entering the contextualization of social semiotics, it is relevant to proceed with another kind of contextualization, namely the one concerning the origins of the data of the thesis: the exhibition Aqua Mater.

2.3 Aqua Mater

In the forecourts of the Parisian Defence district, a monumental Pavilion hosted the photo exhibition Aqua Mater. From the first of April 2022 to the 22nd of September 2022, within the initiatives of World Water's Day 2022, UNESCO has collaborated with Simon Velez and Stefana Simic to rebuild the 'Pavilion Contemplation[4]' to "make the invisible visible" (Turcat, 2021), thus, to raise awareness on the importance of groundwater thanks to the combination of Salgado's photos with Guadua bamboo's architecture, and François-Bernard Mache's "phonographies[5]" (Delage, 2021).

In the main hall of the building, 42 black and white pictures shot all over the planet visually informed the visitors about the power and fragility of water: By showing this element in all its forms, the aim was to create a "communicative space" (White, 2014, p.338), where the public could creatively learn about sustainability. Significantly, by starting to discuss specific terminology, an exhibition intended as a *communicative space* translates into the idea that the Pavilion hosted

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[4] Used for the first time in Arles in 2018 during the event "Rencontres de la photographie" (Pic, 2021).
[5] During an interview for the magazine of Beaux-Arts in 2021, the French composer described the *phonographies* as the natural voice of images (Delage, 2021).

meaning-making processes and consisted of "a site of engagement within which a message is mediated" (White, 2014, p.337). Therefore, Aqua Mater, overall, was a semiotic subject.

However, for this thesis, the analysis will not focus on the entire exhibition, but rather on some parts selected accordingly to a targeted method of data collection.

2.4 Methods of data collection

From the beginning of this thesis, terms like 'actor', 'flux', 'mirror', 'movement', and 'fluid' have been a constant throughout the pages. This is not a coincidence, but they linguistically represent the chosen theoretical approach for the present research: Actor-Network Theory (ANT) (Latour, 1994, 1996, 2005; Law, 2009). It is crucial to stress that ANT is not a theory, but a descriptive strategy composed of meaning-making tools, material elements, and analytical perspectives linked by their questioning and resemiotization of the very concept of 'the social' (Law, 2009). In particular, Latour (2005) invites us to trace back to the Latin roots of this word to understand it in a post constructivist way, thus, indicating "a doing" (see Barad, 2003, p.828) and a "type of connection" (Latour, 2005, p.9) or, to embrace ANT terminology, an *association* (Latour, 2005). Accordingly, the core elements of ANT are to be found in "semiotic relationality […], heterogeneity […], materiality […], insistence on the process and its precariousness […], attention to power as an effect […], to space and to scale" (Law, 2009, p.146).

Combined with posthumanism and the iterative logic of inquiry, the *sociology of associations* (Latour, 2005) addresses the issue of *how* to collect and comprehend data. In this regard, after reading Serres (1974) and his studies on order and disorder and their mutual influence, Latour (2005) dwells on and expands the metaphor of *translation* (Law, 2009). This latter implies a relation that is not governed by causality but, rather, by the principle of making two (or more) elements comparable, coexisting, yet changing because of their very interaction (Latour, 2005; Law, 2009). In other words, the concept of *translation* is a way of weaving through the dense network of the social reality to underline and focus on its dynamic, connected, and connect-ing layers.

Thus far, to frame a method of data collection, it is crucial to comment and then identify the knots and the direction(s) of this associating web. Notably, as well as posthumanism, ANT does not value the distinction between non-human and human entities because they are all involved: On the contrary, objects, people, and relations are called *actors,* and they have a relational agency (Law, 2009). In this concern, Mattozzi (2019) stresses how the concept of *actor* is to be separated from the one of *actant*. This latter defines ANT entities that "for the action they perform […] are the same

[…]: [for instance] They occupy the same position within the network […] [and provides] the latter with a certain competence […]" (Mattozzi, 2019, p.146). Thereby, an *actor* is the source of action, and, when it *associates* and *translates*, it becomes an *actant* (Latour, 2014 as cited in Mattozzi, 2019).

By *translating* ANT concepts into the present case study (Latour, 2005), the chapter can now discuss how ANT organizes art-research and, thus, start focusing on the data.

Aqua Mater is a communicative space (White, 2014) and a semiotic object. It is part of the "realm of performativity" (Law, 2009, p.151) conceived by ANT together with the precedent philosophical assumptions. Here, data emerges after following *actants* and their "traces left behind by their activity of forming and dismantling groups" (Latour, 2005, p.29). More specifically, to collect them and to be able to consider *actants* as *actors* (thus, analyzable entities) is an operation resulting from assuming the visitors' perspective (Latour, 2005). In other words, the data were selected after taking the exhibition's visitors' viewpoint, therefore, through a qualitative ethnography (Atkinson, 2008). Indeed, the public is, in all respect, an *actor* in the communicative space and the one whose understanding is more accessible for the researcher (Yearley, 2004).

On the subject of access, as the role assumed was the one of visitor, the access was granted after having paid an entry ticket either online, or directly at the forecourt hosting the Pavilion. Thereof, there was no need for figures like the gatekeeper, as the exhibition had no limited duration or other obstacles in entering it, nor there was any need for key informants (Bryman, 2015).

Overall, this method of data collection implies commitment to investigating the multimodal composition of Aqua Mater. Notably, this form of investigation is produced and producing social interactions and, therefore, can be conceptualized as a 'practice', intended as a group of "social actions […] mediated through a variety of semiotic resources and the modes" (Klausen, 2011, p.56). This notional *association* is necessary to frame this methodological strategy as ethnography of practice.

In this regard, data consists of various *associations*[6] and not solely of pictures or phonographies.

Nevertheless, because of time and space constraints, the present ethnography is a micro-ethnography of practice: it focuses only on specific *actors* of the exhibition, selected by the

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[6] That can be called also 'traversals', following Lemke's terminology (2009).

fieldnotes[7] and the pictures taken during the various visits[8]. Indeed, the thesis acknowledges that, in a reality such as this, the *associations* would have been countless and on numerous layers and media. For instance, there are websites, offices, and posters all over the city and beyond that participate in these multimodal *traversals* (Lemke, 2009). Therefore, within the data observed during the micro-ethnography, the chosen primary unit of analysis is Salgado's pictures.

To have photography as entering point answers, on the one side, the academic requirement of building an investigation around orienting research questions which, in the present case, address the role of photojournalism. On the other, it shows coherence with the art-based inquiry here conducted and the ontological intersubjectivity (or subjectivity) that comes within. Indeed, even if my role as researcher was covert, the thesis acknowledges that, as an interpreting *actant* in art inquiry, my impact is not completely invisible. In other words, this refers to what Pink (2004) called 'reflexive position to visual materials' (Bryman, 2015), thus the "awareness of and sensitivity to the ways in which the researcher as a person has an impact on what a photograph reveals" (Bryman, 2015, p.452). This matter is related to the epistemological roots in interpretivism and needs to be made explicit to ensure that, although subjectivity is involved, this method of data collection stands sound because it remains open to different interpretations.

However, the data thus collected are not simply visual materials: Nair (2011) underlined how a photograph transcends its physical frames and asks the viewer to go beyond the first layer of aesthetics. "[I]f the photograph is by definition a medium with migratory potential [...] then it [...] force on the viewer a migration [...] To so force a displacement [...] is to engage them in the course of a different light" (Nair, 2011, p.124). In brief, Salgado's pictures are more than visuals: they are "an open place, a portal [,] [...] a transportation system" (Douek, 2013, p.4) and, in all respect, *actors* (Latour, 2005) of the processes of meaning-making, thereby, they are multidimensional data.

Moreover, together with the photographs, the physicality of Aqua Mater and, therefore, the pictures and the fieldnotes about the Pavilion are part of the data. Indeed, the *association* between the photos and the bamboo structure was quite impactful and insightful for the experience of the exhibition overall.

Finally, while conducting the micro-ethnography of practice, before exiting the Pavillon, the itinerary of the visit led to a small boutique with various materials related to the exhibition. For this research, here was bought the journal published by Beaux Arts in 2022 specifically for Aqua Mater

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[7] The fieldnotes can be found in **Appendix 1**.
[8] These visits were conducted over a 2-week period starting five days after inauguration.

and entitled "AQUA MATER Sebastião Salgado_ L'exposition dans un Pavillon monumental en bambou de Simon Velez". This magazine has been collected to present the the data.

In light of these considerations, it is now necessary to delineate a reading strategy for these materials, hence, discussing a method of data analysis.

2.5 Methods of data analysis

Nair (2011) helped us defining photographs as more than visuals and, therefore, to proceed in a similar manner to what was carried out by Van Leeuwen and Kress in the early 2000: "Gunther and I – wrote Van Leeuwen (2014) - now moved away from writing only about images, and began to focus on what we called 'multimodality' […] [as] we increasingly realized that many of the things we have studied as image features applied across different modes of communication" (p.22). Likewise, this art-investigation starts from the interest of digging into aesthetics to creatively and critically discuss the elements involved in art-*associations* (Latour, 2005; Sullivan, 2006). Accordingly, the method of data analysis chose for the purpose of this research is multimodal semiotics (Van Leeuwen, 2005; Van Leeuwen & Jewitt, 2004; Bezemer & Jewitt, 2010; Durrani, 2021; Leon, 2017; Lemke, 1993, 2009).

At first, the thesis understands multimodality as a system of investigation that addresses all the resources or *modes* of communication (Jewitt, 2014). Here, the context is fundamental as these resources are modeled by both the coeval social norms, and the characteristics of the *traversals* (Lemke, 2009) they operate in (Jewitt, 2014; Bezemer & Jewitt, 2010). However, it is crucial to stress that, as this is not a study on communication, the focus is not on the *modes* per se, but on *modes* conceived as *actants* of meaning-making processes. Indeed, following the work of Halliday (1978, as cited in Bezemer & Jewitt, 2010), modes concur in the categorization of significations:

> "[E]very sign tells us something about 'the world' (ideational meaning), positions us in relation to someone or something (interpersonal meaning) and produces a structured text (textual meaning). Multimodality sets out to explore how these meanings are realized in all modes" (p.184)

Thereby, multimodality analytically reflects post constructivist's emphasis on multidimensionality while targeting the readability of social signs (Shank, 1993).

Drawing from Halliday once again (1978, as cited in Jewitt, 2014), the thesis *traverses* towards the framing of social semiotics. Notably, this method aims at interpreting and understanding how social actors develop and react to processes of meaning-making in each social setting (Harrison, 2003). As it is both a theoretical and analytical approach, semiotics is prone to

interdisciplinarity to innovatively investigate the dynamics of signification (Jewitt, 2014; Jakobsen & Tønnessen, 2018). In this optic, the present study presents, on the one hand, a combination consisting of multimodal social-semiotic methods of analysis and, on the other, a combination concerning semiotics and theories of sustainability and the arts. In brief, the point is to adopt a toolkit capable of dealing with the "multi-semiotic complexity of a […] practice" (Iedema, 2003).

Before describing the analysis step by step, it is crucial to dwell on the entities primarily involved in meaning-making, thus, to extend the multimodal understanding of 'resources' with the definition proposed by van Leeuwen (2005, as cited in Pirini, Matelau-Doherty & Norris, 2018): "semiotic resources are […] actions and artefacts […] produced both psychologically, through the body, and technologically, through object, tools, and environments" (p.646). Accordingly, this definition concerns Salgado's picture that, now that they have been methodologically identified, will be analyzed as follows.

Because of how the data were collected, the investigation will mirror my experience as an ethnographer and will thus proceed guided by the field notes. Accordingly, once entered the core room with the photographs hanging on the wall, the public (thus the observation) moved clockwise (see Appendix 1). 'Arrived' in front of picture number 23 the overview of the visit pauses because the descriptive writing will make way for the analytical one: notably, the analysis of picture 23 will be followed by the one of picture 24 and, lastly, by the scrutiny of the two photographs together, to be able to consider how they were *associated* to one another in the communicative space of Aqua Mater (Latour, 2005).

These three investigations will be all rooted in Lemke's (1993) categorization of the three aspects of meaning making, namely the Presentational, Orientational, and Organizational one. However, although the scrutiny of pictures number 23 and 24 will go through all these layers of interpretation, the analysis of them together will have a different focus. Indeed, in the final step, only the Organizational aspect of meaning making will constitute the method of analysis.

Thus far, before describing the investigation step-by-step, it is necessary to make a technical remark on the design of this section. For copyright reasons, some of the data presented in the following chapters are a reconstruction of the data analyzed: in particular, on the one hand, the investigation has been made directly on the photographs as they were hanging on the walls of the Pavilion, to value their physicality within the communicative space. On the other hand, to present them in detail, in some cases, the figures in chapters 4 and 5 will be a reconstruction of the original

data, obtained by combining the pictures from the magazine of Aqua Mater, and the photos taken during the ethnography (see the example of **Figure 1**).

Figure 1: Methods of data presentation

Reconstruction of picture 23
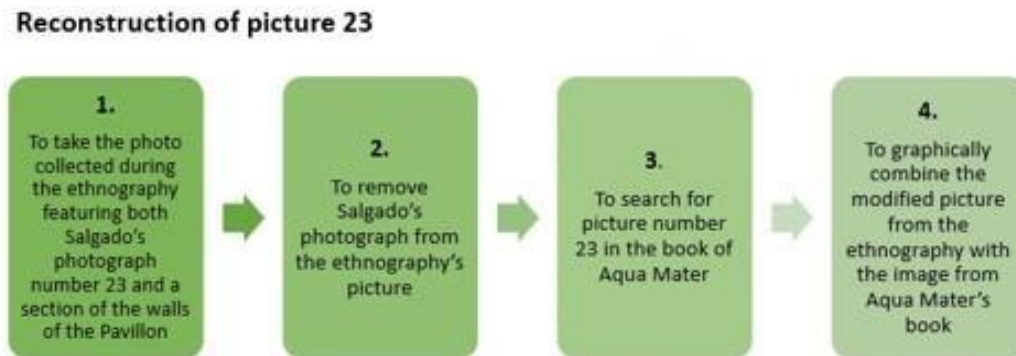
In brief, to respect the copyright, the magazine of the exhibition will not be the subject of analysis but will be used during the investigation to recreate and present the data under scrutiny. This considerer, the analysis will unfold in this way.

"Every meaning-making act constructs a Presentational "state-of-affairs" that construes relations among semiotics participants and processes" underlined Lemke (1993) while framing the initial stage of interaction. Indeed, when given a picture, the first question following one's observation is: what am I looking at? Accordingly, the notion of *presentational meaning* organizes this answer by reflecting on the understanding of how things are presented (Lemke, 1993).

In this concern, the analysis will be articulated in terms of modality: differently from how it has been defined above, modality here indicates the "truth value or credibility" of representations of the world (Durrani, 2021, p. 138). It concerns 'how' (the *mode* in which) elements under investigation are presented, and it can be appreciated by, for instance, considering the degree of colors' saturation, or the use of a black and white palette. More specifically, the modality of presentational aspects of meaning making can be naturalistic, scientific (or abstract), and technological (Van Leeuwen & Jewitt, 2004; Van Leeuwen, 2005).

The former values visual reality according to the correspondence between what one could observe by naked eye, given the same context and point of view of the photographer (Van Leeuwen & Jewitt, 2004) and what can be observed in the picture. The greater the correspondence, the higher the modality. Moreover, scientific or abstract modality refers to the connotative aspect of what is presented: significantly, the greater the congruence between the image and its 'conceptual

identity', the higher the modality (Van Leeuwen & Jewitt, 2004; Van Leeuwen, 2005). Finally, as for the technological presentation of meaning-making, visual credibility depends on utilitarian principles: "the more an image can be used […] for action, the higher its modality" (Van Leeuwen, 2005, p. 168).

Furthermore, Kress and Van Leeuwen (1996, as cited in Van Leeuwen & Jewitt, 2004) stress that, when observing a photograph, there could be some elements that are more noticeable than others. This translates into the analysis of the 'salience' or visual weight of the components of an image (Van Leeuwen & Jewitt, 2004; Van Leeuwen, 2005).

Finally, there are three additional key concepts related to the reading of the *presentational meanings*. Significantly, the notions of symbol, index, and icon were proposed by Pierce (1965, as cited in Van Leeuwen, 2005) to value the relationship between signified and signifiers within one sign. If in the first situation, this intra-relation within the symbol is conventional, the index and the icon are "motivated signs" (Van Leeuwen, 2005, p.49), to wit, signs whose link between signifiers and signified is causal (for the index[9]), or aesthetical (for the icon[10]).

In light of these considerations, this initial section is followed by a second one analyzing *orientational meanings*.

"At the same time, every meaning-making act constructs an orientational 'stance' towards that state-of-affairs […] which positions the viewer in relation to the scene [and] establishes […] evaluative orientations of the producer/interpreter" (Lemke, 1993, p. 7). Drawing from Lemke (1993), Leon (2017) studied this aspect of meaning-making by proposing the metaphor or the reader: While observing photographs number 23 and 24, the viewers could indeed 'read' the pictures emotionally and/or conventionally. On one side, the audience could focus on the so-called "emotive identity of the signs […] or figures" (Leon, 2017, p.640), thus noticing a joyful, dramatic, nostalgic, etc. aesthetics. On the other side, the attention could catch the denotative, connotative, interpretive, or commanding function of the visual codes used by the photographer (Leon, 2017). This latter presupposes a conventional agreement, therefore, it results in an intersubjective interpretation that depends on one's cultural group.

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[9] Van Leeuwen (2005) explains the index with the example of the footstep: "if a footstep signifies the recent presence of a person, it does so because it was actually made by that person" (p.49).
[10] It is aesthetical because the signifier resembles in a way to the signified (Van Leeuwen, 2005).

Moreover, these readings will be mutually influenced by the presence of 'interactive meanings' (Van Leeuwen & Jewitt, 2004). In particular, Van Leeuwen and Jewitt (2004) underlined how, in this stage of the analysis, three aspects participate in the process of meaning-making: contact point, distance, and point of view. By, respectively, demanding or offering something to the viewer, regulating the degree of empathy, and establishing power dynamics, these three factors shape a unique connection between the audience and what is depicted in the photographs (Van Leeuwen & Jewitt, 2004).

Lastly, it is necessary to remark that the point of view will be understood by applying the 'system networks', originally formulated by Halliday' M.A.K. (1978, as cited in Van Leeuwen & Jewitt, 2004), and illustrated in **Figure 2**.

Figure 2: The meaning making potential according to the system networks
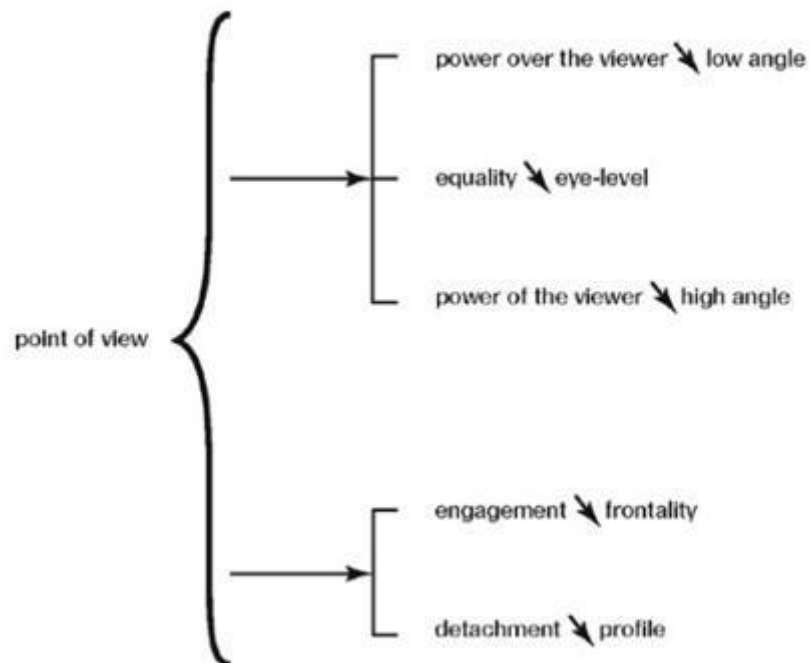
Source: Van Leeuwen & Jewitt, 2004, p.14

Moving towards the last stage of the analysis, "every meaning-making act – claimed Lemke (1993) – constructs a system of Organizational relations defining wholes and parts of those wholes […] in the semiotic space […] and in the […] interactional space […] itself" (p.7). Said differently, the final section of this scrutiny will dwell on the concept of 'composition', intended as the visual 'architecture' of the photographs (Durrani, 2021); It is a matter of "spatial relationships" (Van Leeuwen & Jewitt, 2004, p.10), and "internal […] [and] contextual [or external] cohesion" (Durrani,

2021, p.138). In this regard, from a linguistic point of view, Durrani's (2021) term 'composition' will be alternated with Van Leeuwen and Jewitt's (2004) notion of 'representational meaning', as these two will be considered equipollent.

Hence, in the practice, *organizational meaning* will be firstly investigated by understanding how visual elements are connected or disconnected, thus, by examining their 'depiction' (Lemke, 1993) or 'framing' (Van Leeuwen & Jewitt, 2004). Notably, Van Leeuwen (2005) stressed that this operation provides some information on the semiotic potential of the photographs as "disconnected elements will be read as […] separate and independent, […] even contrasting units of meaning" (p.7), and vice versa.

Another aspect emerging from this phase will depend on how each visual component is disposed and will be conceptualized by the notion of 'information value' (Van Leeuwen & Jewitt, 2004). Specifically, this relational form of scrutiny will value left-right, top-bottom, polarized or centered, horizontal or vertical, and foreground or background placements, as well as the presence of criteria of symmetry (Van Leeuwen & Jewitt, 2004; Van Leeuwen, 2005).

In sum, the aforementioned method of analysis will outline the research findings that will then be critically discussed to develop a deeper understanding of Aqua Mater semiotic nature, and its *associations* with the understanding of water.

2.6 Research design and final methodological considerations

Regarding the research design, this thesis proposes a combination of descriptive and exploratory research. Indeed, on the one hand, it aims to "discover associations or relationships between or among selected variables" (Dulock, 1993, p.154), and describe the practice of art within sustainability studies. On the other hand, according to the aforementioned inductive logic, it "generate[s] significant findings without appealing to a theory about these phenomena" (Waters, 2007, p.279). Besides, its explanatory inclination derives also from the fact that the association of art-based research together with social sciences and sustainable development is relatively new (Petti et al., 2020).

Furthermore, ethical issues should now be addressed. As described in the previous subchapter, some of the data presented will be a reconstruction of the data analyzed. As explained, this is to respect copyright and ownership rights, and will be further emphasized by systematically refer to Salgado, or to the Pavilion's architects throughout the pages. Alongside, the micro

ethnography and, thus, the collection of fieldnotes or pictures regarding the interaction with the other visitors, calls for a short comment in terms of consent respect (Warr, Waycott, Guillemin, & Cox, 2016). Notably, no human actor will be subject of analysis, nor will feature in any key pictures taken during the observation: in the rare case where the other visitors appear in the photos, anonymity has been ensured by photographing (1.) from an adequate distance so that details are blurred, (2.) from the back, and/or (3.) by altering the image in post-production so to have bidimensional elements instead of real people.

Finally, on the subject of interaction with the other human actors, although the other visitors' *associations* will not be under analysis (for instance, no interview or questionnaire was conducted), the fact that the ethnography was conducted under a covert role made it so that reactivity was not a problem. Without knowing that a researcher is present, indeed, visitors are less and were "less likely to adjust their behaviour" (Bryman, 2015, p.427).

3. Moving through the existing literature

Referring back to the process of producing a cubist picture, once the brushes and tools have been selected, the next step consists of moving around the subject one wants to paint (MoMa, 2017). In parallel, in the following chapter, the thesis is enabled to reflect this process thanks to ANT claiming that definitions of terms are but names of "a movement, a displacement, a transformation" (Latour, 2005, p. 64). Methodologically, this was already synthetized by the choice of the iterative approach, which, indeed, is a matter of blending inductive with deductive logics to build the understanding of the topic investigated.

In this optic, it is now time to 'move' along the deductive path and, therefore, through the existing literature on sustainability, spatiality, art, and semiotics. In this phase, the aim of putting into debate scholars and theories is to identify the key concepts and their meanings in the context of the present thesis. However, what follows is not a compartmentalized reflection because, this thesis conceives the world, and thus the texts, as relational: "they come from somewhere and tell particular stories about particular relations" (Law, 2009, p.142). Accordingly, the first story is about sustainability.

3.1 Understanding sustainability

Drawing from what was discussed in the introduction, Wu, Guo, Huang, Liu, and Xiang (2018) reaffirm that sustainable development is so if it allows the current generation to develop without compromising the growth of the future ones. However, Wu et al. (2018) move one step forward from the Brundtland Report, and think in terms of implementation: Indeed, "[t]o achieve the sustainable development, people have to find essential ways to turn it from general concept into reality" (p.2390). To focus on implementing, thus, constructing sustainable development, is interesting for this thesis because it enables framing its understanding as a matter of post constructivism and Actor-Network Theory. Notably, the fact that, scholars still start from the very same definition formulated in 1987 means that the way sustainable development is generally conceptualized has not changed dramatically. Rather, what is interesting is how sustainable development as *associating actor* has evolved and how its ongoing process of mattering has been implemented (Latour, 2005). To sum, this first 'story' is about the reality, therefore, ongoing historicity of sustainable development (Law, 2009; Barad, 2003).

3.1.1 Tracing the origins of the current objectives of sustainability

The report 'Our Common Future' had a strong impact in the international arena. In the years following its publication, on several occasions, international organizations and institutions designed various ways to implement these principles. In this concern, in 1995, the OECD (Organization for Economic Co-operation and Development) proposed the International Development Goals (IDGs) which could be considered, in all respect, the precedent of the contemporary Sustainable Development Goals (SDGs). However, the resonance of IDGs was relatively weak, mainly because they had been formulated solely by Western countries (Hulme, 2009).

Hence, later on, while planning the 'Millennium Assembly of the United Nations', considered at the time the "mother of all summits" (Hulme, 2009, p.25), for the UN Secretary-General, it became clear that those meetings were an opportunity to reconsider the progresses made with the IDGs and formulate a more efficient set of targets for sustainable development (Hulme, 2009). Differently from the IDGs, the consequent Millennium Development Goals (MDGs) manifested from their creation stages their belonging to Law's 'realm of performativity' (Law, 2009): As Hulme (2009) observed, "the making of the MDGs was an ongoing process with no precise beginning and end" (p.43). Nonetheless, despite and (/or) thanks to their post constructivist nature, the eight MDGs inaugurated a new era of global public policy.

On this subject, Battersby (2017) reflects specifically on the MDGs enablers, namely the group of objectives, intentions, and indicators identified for their achievement. Accordingly, he criticizes how indicators have transformed into goals instead of remaining instruments of measurement, thus affecting the change-potential of the MDGs (Fukuda-Parr & Orr, 2014 as cited in Battersby, 2017). Overall, Battersby's (2017) critique does not stand alone, but it is one of the numerous points discussed in the 2012 forum 'Rio+20', during which sustainable development has been, once again, the leading theme.

In this concern, shortly after the Rio+20, in 2015, the process of transforming the notion 'sustainable development' into a more tangible reality (Wu et al., 2018) experienced another important transformation: in September, the UN General Assembly adopted a resolution that proposed the 17 Sustainable Development Goals (SDGs). Their ultimate purpose was to expand the MDGs' range of action to create "targets […] integrated and indivisible, global in nature and universally applicable, taking into account different […] realities, capacities and levels of development" (UN Assembly, 2015, p.13; Petti et al., 2020). The SDGs are summarized in **Figure 3,** and represent the contemporary state-of-the-art of the conceptualization of sustainability's

associations.

Figure 3. The SDGs according to the five fundamentals: People, Prosperity, Peace, Partnership, Planet
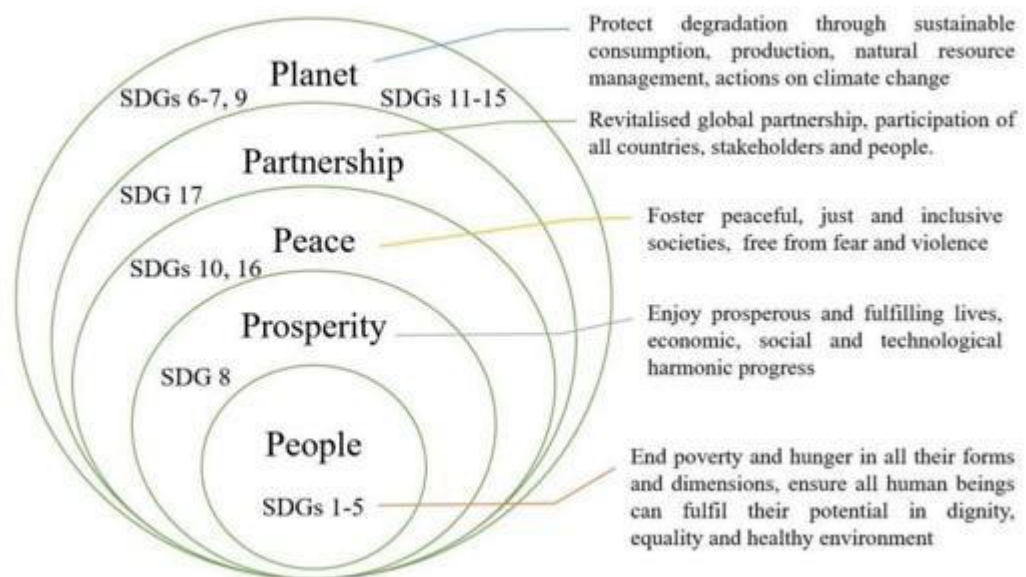
Source: Wu, Guo, Huang, Liu & Xiang, 2018, p.2390

Without dwelling on each target, the thesis chooses to elaborate on SDG 6, to wit, "ensure availability and sustainable management of water and sanitation for all" (UN Assembly, 2015), because of the research's interest in the semiotics of the exhibition Aqua Mater. However, referring back to Law's (2009) understanding of texts' relationality, it is true that the roots of the SDGs are now visible, but the way SDG 6 is involved in the process of meaning-making of the case study depends also on its 'particular relation' (Law, 2009) with the World Water's Day. Therefore, this latter requires to be traced back.

3.1.2. The *particular relation* between the SDG 6 and World Water's Day

Before the SDGs, the MDGs, and the IDGs, in 1992, the UN General Assembly adopted the resolution A/RES/47/193, recognizing that water is not simply an *actor* (Latour, 2005) of sustainable development, but, in many ways, its precondition (Turcat, 2021; Bhaduri, Bogardi, Siddiqi, Voigt, Vörösmarty, Pahl-Wostl,... & Osuna, 2016). Bhaduri et al. (2016) stress indeed that water is a key element not only for economic but also for social and human development as it is involved in a highly dense network of *associations* (Latour, 2005), partially illustrated by Alcamo (2019) in **Figure 4.** In this same perspective, the UN resolution of 1992 presented a package of operations to preserve this elementary asset, and, among the others, was the creation of World Water's Day every

year on the 22nd of March (Turcat, 2021).

Figure 4: Water associations within sustainable development
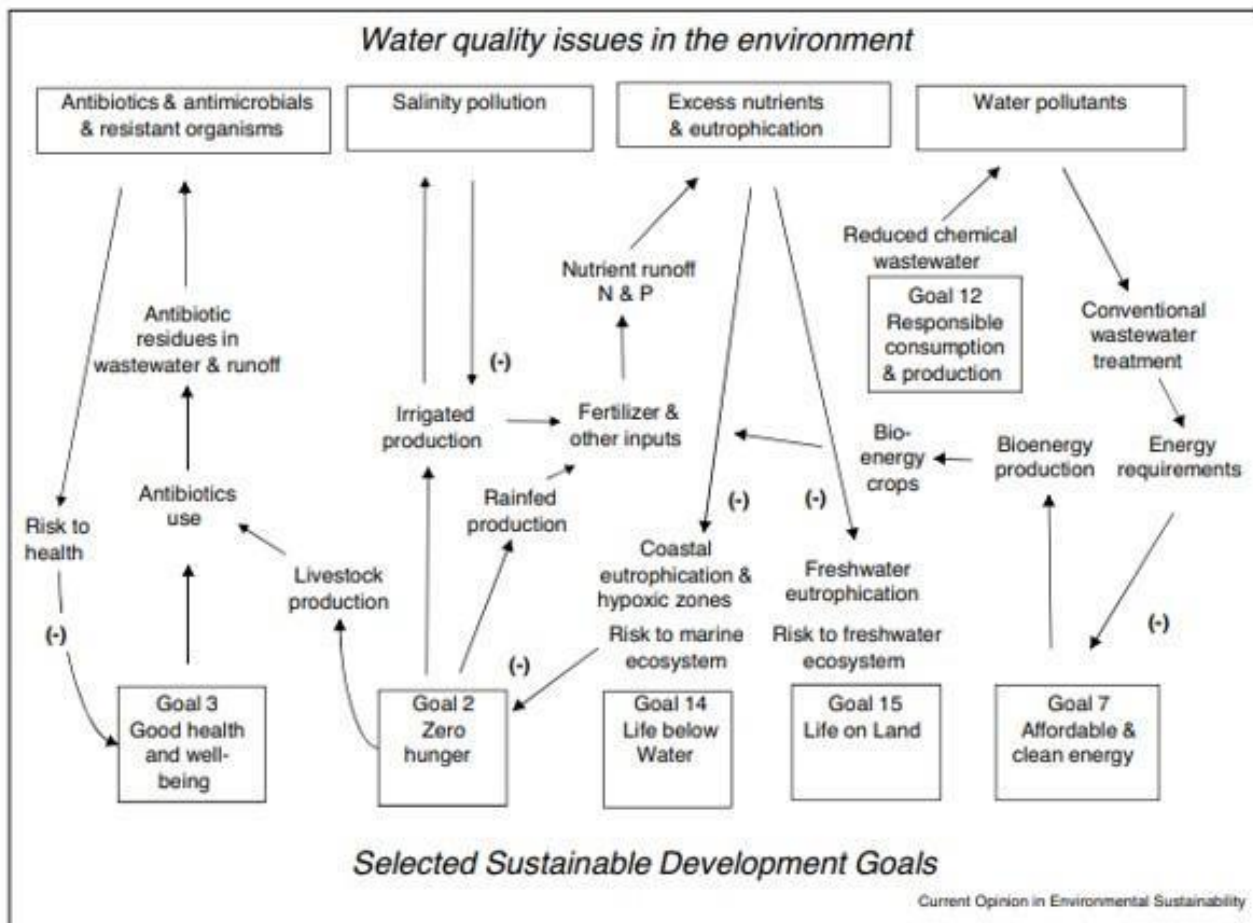
Systems map of selected explicit interlinkages of water quality with other SDGs. Interlinkages with SDGs 6, 11, and others not shown.

Source: Alcamo, 2019, p.128

Since the Nineties, this Day has been through some formal and conceptual changes. Notably, after the publication of the SDGs, World Water's Day is now explicitly in support of SDG 6 (UNESCO website, 2022). Therefore, the focus of this anniversary goes "beyond targets related to drinking water supply and sanitation (targets 6.1. and 6.2), […] includes aspects of water quality and wastewater (target 6.3), water use and efficiency (target 6.4), integrated water resources management (IWRM) (target 6.5), ecosystems (target 6.6) and an enabling environment (targets 6.a and 6.b)" (Sadoff, Borgomeo, & Uhlenbrook, 2020, p.346). Furthermore, this *association* resulted in a normative shift as, being under the 'umbrella' of the SDGs, translated what was initially a matter of local or regional policy, into a matter of global management (Sadoff et al., 2020).

Nonetheless, despite this set of *associations* and its current thirty anniversary, World Water's Day is still poorly known, to the point that, in an interview released in 2022 within this recurrency, Azoulay, the Director-General of UNESCO, spoke in terms of 'call to action' (Turcat,

2021). This appeal for a stronger and more proactive collective responsibility is prompted by alarming data on water monitoring. For instance, nowadays, four billion people are facing water shortages, and, by 2050, it is estimated that more than 50% of the world's population will live in water-stressed areas (UNESCO website 2, 2022; Turcat, 2021).

In this respect, to increase awareness in the public, every year, World Water's Day brings attention to a 'concrete' theme (Turcat, 2021). Accordingly, the 2022 one is a clear example of SDGs' interdependency: groundwater (Bhaduri et al., 2016). Even if it is a relatively 'invisible' resource (Turcat, 2021), groundwater's impact is before anybody's eyes: As reported by Richts, Struckmeier, and Zaepke, (2011), "[g]roundwater is the largest accessible but often undervalued freshwater reservoir on earth" (p.160). Notably, ecosystems aredependent on it because groundwater intervenes in their functioning by affecting marshland and waterways. Alongside, this resource supports food and manufacturing processes (UNESCO website 2, 2022).

Thus far, these considerations do not aim at showcasing groundwater potentialities but rather at 'displacing' through its multiple *associations* to construct its identity as a core *actor* of the communicative space of Aqua Mater (Latour, 2005). In other words, to link with the title of 2022 World Water's Day, it is a matter of 'making the invisible visible' (Turcat, 2021), thus retracing its constitutive network of *traversals* (Lemke, 2009).

On the subject of networks of *traversals* (Lemke, 2009), it is now necessary to understand sustainability by tracing another layer of *associations* (Latour, 2005). Indeed, as this subchapter has framed sustainability by discussing its 'changes through time', defining a term means also to problematize the physical spaces in which it is debated, hence, to contextualize it in terms of 'space'. Notably, as the thesis investigates a specific exhibition, its spatial *associations* play a crucial role. In brief, the following 'story' aims at understanding spatiality (Law, 2009).

3.2 Understanding spatiality

3.2.1 To space

Wicks and Reason (2009) underline how creating a communicative space results in the creation of a place that fosters intersubjectivity and negotiations of shared needs. In this situation, Van Leeuwen (2005, as cited in White, 2014) claims that these two processes would then mutually influence each other so that all "semiotic modes 'fuse' to produce a single communicative action" (p.338). In this regard, Scollon (2005, as cited in White, 2014) stresses that, within this semiotic act, space is a key *actor* (Latour, 2005), whose role should, therefore, be critically questioned.

When overviewing the existing literature around space, a paradigmatic author is Doreen Massey (1994; 2005). One of her works is specifically entitled *'for Space'* thus suggesting that this topic matters as it "inflects how we engage, understand and approach the world" (Anderson, 2008, p.229). Drawing from Massey and Anderson's (2008) understanding of Massey, this thesis sees space as a collective "negotiation of intersecting trajectories" (Massey, 2005, p.154). Thereby, it is an actor intrinsically relational and socially constituted.

Moreover, Dourish (2006) deepens on this point by 'displacing' towards semiotics and affirming that space's social dimension *associates* (with) processes of significations overall (Latour, 2005). Besides, these 'intersecting trajectories' (see Massey, 2005) are not fixed or sporadic but rather ongoing: "space is always under construction […] it is never finished; never closed […]" (Massey, 2005 as cited in Anderson, 2008, p. 228; Massey, 1994). In this respect, the choice to entitle the present subchapter 'to space' echoes Doel's studies (2000, as cited in Anderson, 2003) in which, in a post constructivist perspective, was proposed to consider this word mostly as a verb, as "an action, an event, a way of being" (p.232).

By continuing to 'move' (Latour, 2005) around this notion, it is fascinating to dwell more on the work of the aforementioned Dourish (2006). Notably, he agrees with Massey's conceptualization of space but then redirects the attention to the idea of spatiality, which is relevant to the present thesis from an analytical point of view. Indeed, it completes the understanding of 'spac-ing' by enabling this study to speak in terms of 'spatiality' when it comes to Aqua Mater's *associations*, and in terms of 'space' when it is about *actors* (Latour, 2005): "I have focused more on space – wrote Dourish (2006) – or, more accurately, on spatiality (and spatialities), the ways in which we generate spatial forms and articulate spatial experiences" (p. 306). Said in other words, Dourish (2006) conceives the physical dimension of an exhibition as an active process of creation of alternative spatiality(ies), namely, heterogeneous networks of interactions with various forms of agencies at work.

In this optic, to better elaborate on spatiality, Richardson (2018) 'displaces' this discussion towards the 'particular relation' between objects and space (Latour, 2005; Law, 2009). He arguments for this 'particular story' (Law, 2009) by overviewing the different ideas of space; Without rewriting all the steps, what is interesting is the last passage he describes: according to Hetherington (1997, as cited in Richardson, 2018), space creases around objects deeper or shallower depending on the object in hand. Said otherwise, Hetherington's conceptualization (see Richardson, 2018) can be compared to a simplified version of Einstein's theory of gravitational fields: because of this

"scrumpled geography" (Doel, 1996, as cited in Richardson, 2018, p. 203), while *associating* in space, *actors* are more or less 'attracted' to (or 'gravitate around') some objects (also) according to how space is bent around them. Therefore, "the (heterogeneous) materiality of the space […] informs and mediates our 'choices' to navigate this space [moreover] agency is […] mediated by the space itself and its heterogeneous materiality" (Richardson, 2018, p. 206; Hetherington 1997, as cited in Richardson, 2018). In brief, the spatiality and materiality of *actors* (Latour, 2005) in the communicative space matter.

As the *associations* around the concept of space are now clear, it is relevant to deepen on space materiality and reflect on what frames the spac-ing practices of Aqua Mater, to wit, the bamboo Pavillon (Latour, 2005). Indeed, this building is a "bounded space" (Scollon, 2005, as cited in White, 2014, p.338), hence, it presents walls and physical structures that impact the negotiation of practices (White, 2014). Thereby, the materiality of the Pavillon constitutes the next 'particular story' (Law, 2009).

3.2.2 The materiality of Aqua Mater's Pavilion

Covering an area of 1000 m2 of extension, 16m wide, 60m high, and 10m high, the reused Contemplation Pavilion has been assembled in the forecourts of the Parisian Defence district to host Aqua Mater (Pic, 2021). By considering this building as an *actor* involved in the processes of meaning-making and resemiotization of Salgado's exhibition, this section aims at understanding its materiality to bring out bamboo's semiotic potential (Latour, 2005).

More specifically, the bamboo used in the present case is from a tropical species named Guadua, local in Latin America (Archilla-Santos, Ansell, and Walker, 2012). Overall, this material *associates* with the previous reflection on sustainability as it is classified as renewable natural resource, according to the principles illustrated in **Figure 5** (Maikol, Maksimovich, Ivanova, and Ainur, 2020). Moreover, bamboo overall has been recorded as a Non-Wood Forest Product (NWFP) and as an alternative for wood by FAO's Forest Resource Assessment (Archilla-Santos et al., 2012).

Figure 5: The concept of sustainable architecture development with bamboo using
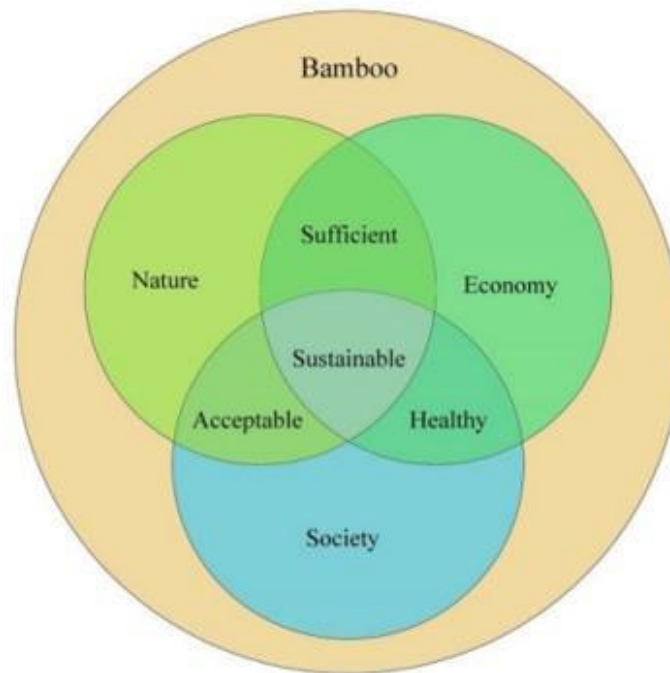
Source: Maikol, Maksimovich, Ivanovna, & Ainur, 2020, p.29

However, despite its relatively recent 'recognitions', bamboo is not a new material in architecture overall. Rather, it is one of the most ancient worldwide (Maikol et al., 2020). This is interesting from a semiotic perspective, because, when (human) *actors* interact with it, they relate to something familiar and comfortable to them. Therefore, its presence per se does not trigger a sense of change. Yet, as stressed by Maikol et al. (2020), its usage for large-scale architectural ends has not been studied enough: Simon Velez[11] is, indeed, one of the pioneers, and he is pushing for a broader-scale use which extends beyond the decorative function, for which bamboo is anciently known (Archilla-Santos et al., 2012).

Besides, this lack of studies on the matter inscribes a wider reflection on the overall transition towards sustainability. Significantly, Molderez and Ceulemans (2018) argue that this kind of change provokes strong emotional reactions, because sustainability is, to date, associated with ambiguity and uncertainty. Nonetheless, to accompany this transition, the two scholars recognize in the arts a potential support for the "itegrat[ion] of complexity" intrinsic in sustainability (Molderez & Ceulemans, 2020, p.759). Drawing from Olsen (2013, as cited in Molderez & Ceulemans, 2020), they claim that art can, indeed, "focus our attention; […] help us become

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[11] Simon Velez and Stefana Simic are the two architects of Contemplation Pavilion.

comfortable with uncertainty […]; [and] help us feel" (p. 759). Hence, the following 'story' (Law, 2009), cannot but start by questioning: what is art?

3.3 Understanding the arts

3.3.1 What art is and what it is not

As mentioned in the introduction, the thesis conceives art as a cultural practice. At first impression, this means that art involves some forms of agency and social interactions. However, it remains a quite blurred understanding that requires further development. To this end, this section 'moves' around this notion by 'displacing' (Latour, 2005) through art's non-self and, only after, through the concept of cultural practice.

Concerning the construction of the non-self, while discussing the evolution of art and its identity requirements, Carroll (1988) observes that, within the Anglo-American tradition, three approaches have been successful; at first, pioneered, for instance, by Croce and Bell, *essentialism* defines art according to a theory. Hence, if a product has the features set by the theory, it is definable as an artistic product, otherwise, it is not (Carroll, 1998). Second, against *essentialism*, there is the *open-concept* approach, defended mainly by Weitz (1973, as cited in Carroll, 1998), who framed the concept of art in terms of "arena […] in which we legitimately expect novelty, innovation, and originality" (Carroll, 1998, p.141). Finally, the *Institutional Theory of Art* states that an artifact is so if it was generated by the 'appropriate' process, precisely, an institutional process (Dickie, 1974 as cited in Carroll, 1998).

Thus said, these three traditional approaches underline what art *is not* accordingly to the present thesis: notably, art is not dependent on exclusionary theories, nor (only) on the criteria of novelty, innovation, and originality, and not on institutionalized processes. Rather, art *is* a cultural practice, thus an "arena of activity that governs itself such that it reproduces itself over time" (Carroll, 1998, p. 144). Within this arena, three elements play a crucial role: agency, action, and structure (Sullivan, 2006).

Significantly, the three pillars of art practice *associate* with each other to result in what Norris (2012) conceptualized as a 'mediated action'. In this respect, Norris (2012) claims that none of the three elements is sufficient to describe art, if considered separately. What matters is the interaction between them and the consequent production of meanings (Norris, 2012). Besides, this relational logic is not anew for the thesis: notably, the concept of mediated action reflects the overall ANT strategy and post constructivist ontology at the basis of the current work. Once again, indeed, the

difference is made by the *associations* which, in this case, are what ultimately constitute the very essence of art itself (Latour, 2005).

Nevertheless, despite these considerations, as already mentioned[12], the analysis will not start from the mediated actions, but from Salgado's photographs. To reformulate this in terms of art *associations* (Latour, 2005), the investigation will not start from the cultural practice of art but from a specific 'artifact'.

In particular, this latter refers to the tip of the iceberg of the mediated actions, namely to "cultural things [which] are […] made of […] movements […] and […] changes resulting from these movements" (Holliday, Kullman, & Hyde, 2017, p. 172). Therefore, artifacts are carriers and, often, material syntheses of their underneath *associations* (Latour, 2005; Higgins & Mcallaster, 2004). Moreover, they can be of different types (for instance, songs, paintings, photographs, etc…), but, because of their relational essence, they all have 'representational competences' (Sigel and Cocking, 1977, as cited in Greenfield, 1994).

In this concern, within the semiotic interest of the thesis, it is crucial to dwell on what Carroll (1988) and Bruner (1965;1966, as cited in Greenfield, 1994) intended with 'amplification' potential. To be more precise, among the representational capabilities, through amplification, artifacts expand the "motor, sensory or thinking processes [to them] associated" (Bruner, 1965;1966, as cited in Greenfield, 1994, p.39). Hence, amid the *actants* involved in the resemiotization of Aqua Mater, the artifacts of photography emerge as 'powerful' *actors*, and this is also why they constitute the primary unit of the thesis' analysis. Yet, photographs' semiotic potential does not end with their amplification competence. Thus, the next section is dedicated to the understanding of photographs' 'particular relations' (Law, 2009).

3.3.2 On the representational competences of photography

Durrani (2021) defines 'representation' as the capacity of semiotic actors to (a.) stand for social elements and their intra-relations, and (b.) communicate this capacity through a set of 'attributes[13]'. More specifically, regarding photography, this array of semiotic ability is, according to Nair (2011), what makes pictures one of the best "display […] of the contradictions of modernity and postmodernity" (p.18). Indeed, photographs representations introduce a heterogeneous public with scenes from the most hidden corners of the globe, thereby accelerating and participating to

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[12] See the subchapter on methods of data collection.
[13] For example, in pictures, these attributes are the background or the clothing (Durrani, 2021).

the postmodern 'time-space compression' (Harvey, 1989, as cited in Dourish, 2006): photographic representations enable "a kind of universalism – affirms Nair (2011) - […] that some […] mark as dangerous in overriding distinctions, and others inspiring for rising above such distinctions" (p.18).

In this same 'political' perspective, Azoulay (2008, as cited in Nair, 2011) continues by describing how the semiotic *associations* between photography and sustainability or, better, nature, assume a social-legal connotation as this artifact becomes "a mean […] of restoring citizenship to nature" (Azoulay, 2008 as cited in Nair, 2011, p. 312). In other words, for the scholar, the act of representing nature corresponds to giving and, to a certain extent, amplifying nature's visibility and its influence in the posthumanist reality. This 'particular relation' (Law, 2009) is relevant for the present thesis in several respects but, most importantly, because it provides significant insights on agency that will help discussing the processes of meaning-making occurring in Aqua Mater.

In light of these considerations, the way artifacts function as medium and representation is explained. However, it is necessary to elaborate more on the aforementioned set of 'attributes' that enable representations (Durrani, 2021). In this account, Leon (2017) speaks in terms of photographic language, and identifies its elements with: the frame, point of view, temporality, depth of field, focal length, grain, lighting, and structural skeleton of the frame (see **table 1**).

Table 1: Photographic language

FORMAL ELEMENTS	DESCRIPTION
The frame	➤ It is what bounds the picture and is related to the angle of vision.
Point of view/vantage point	➤ It corresponds to the angle from which the photo is taken, and it is related to the camera position.
Temporality/speed	➤ If the picture is taken at a low speed, the consequent effect would be a sweep, zoom, or mock motion which, semiotically speaking, amplifies the "emotive connotations of violence, ambiguity, vertigo, continuity, instability, action […]" (p.638).
Depth of field	➤ Depending on the format, the proximity with the focus, and the aperture of the lenses, this element oscillates between two extremes represented by the *hypo-focal distance* (everything is blurred), and the *hyperfocal* one. Semiotically speaking, for instance, the hypo-focal distance can result in a state of fiction such as a dream or an illusion.
Focal length	➤ It corresponds to the gap between the focal point and the lens' optical center. This element is what regulates the 'zoom', thus the dimension of the objects portrayed within the frame.
Grain or noise	➤ Also called dot or pixel, the visibility of this element modulates the perception of the artificiality of the picture. The less it is visible, the higher the naturalistic modality of the picture (see Van Leeuwen & Jewitt, 2004).
Lighting	➤ Natural or artificial, hard or soft, light is the "generator of space, and […] time" (Arnheim, 1979 as cited in Leon, 2021). This element influences the depth of the picture by shifting between low, medium, and high keys. For instance, a high tone key and hard light create a feeling of joy.
Structural skeleton of the frame	➤ It corresponds to the concept of 'composition' (Durrani, 2021) described in the Methodology chapter.

Source: Leon, 2017, pp.637-640

Significantly, the way these elements are combined deliver a certain semiotic statement that enter the discussion with other semiotic statements of the other *actors* performing the overall process of meaning making. Yet, in the case of photography, there is an additional variable that orients the pictures' statements, namely their belonging to a genre. Indeed, in the case of Aqua Mater, the elements described in **table 1** will not be details of the analysis but rather concepts for the discussion of how the genre of photojournalism co-creates meanings.

3.3.3 Photojournalism and Salgado's social photography

Since the invention of the 'camera obscura', the primary goal of photography was to document or, overall, support other forms of art (Nair, 2011; Benjamin, 1972). Hence, the fact that, today, this function remains and got formalized in a genre category is not a surprise. However, the way pictures currently document has changed from the outset of photography overall: in other words, not all photography is photojournalism. This latter is, indeed, a specificity, a genre, whose pictures are conceptualized as a tool for visual narration that "fuses information and expression, document and symbol" (Mraz, 2002, p.22) to inform viewers while triggering a varyingly strong emotional reaction (Nair, 2011).

By *translating* (Latour, 2005) towards the context of the thesis' case study, Nair (2011) highlights that, by the time Salgado began his career as a reporter in the 90s, despite photojournalism was a consolidated genre, its relevance was being challenged by the popularity of television as a mean of mass information. Differently from other photographers, however, Salgado's work stood this comparison by creating a delicate (social) aesthetic of black and white that has resulted in his works being considered fine art photographs (Nair, 2011; Sassen, 2011).

In this matter, it is crucial to dwell on Leblanc's (2015) observation concerning the use of colors within this genre at the end of last century. As a matter of fact, monochromatic pictures were a hint to distinguish subjects of photojournalism from "more frivolous society subjects" (Leblanc, 2015, p.6). This was due to technical reasons[14], but also because, as mentioned before, photos have an emotional impact that gets dramatically amplified when combining colors with news topics (Leblanc, 2015). Therefore, it is not the use of black and white per se that makes Salgado's work fine art. Rather, as the thesis considers art a social practice, what makes these pictures a social practice, thus art, can be explained by using Salgado's very words from an interview with Singer in 2010:

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[14] Especially in the 20th century, it was more complicated to manage and use archive of colorful photographs because of colors instability (Leblanc, 2015).

"What I show is the 'result' of a long-term project. I have a program if work […] I take several trips […] It's very organized. *Social photography* is not about 'free art'. You are part of a community, and you must be integrated to do this kind of work" (p.42)

In other words, 'social photography' corresponds to the theory of the 'photographic phenomenon' (Salgado, 1999, as cited in Mraz, 2002), according to which, pictures must be relational and, therefore, represent subjects co-constructed with different *actors* (Latour, 2005). Considering this, 'moving' (Latour, 2005) back to what has been discussed in the previous subchapter, Salgado's social photography or theory of the 'photographic phenomenon' is a concrete example of a 'mediated action' (Norris, 2012). Accordingly, by understanding the photographs of Aqua Mater as art, Salgado's pictures emerge in all respect as *actors* of semiotic processes.

Reached this point of the review of existing literature, it is necessary to sum up what was said so far. Notably, by 'moving' (Latour, 2005) around sustainability, space, spatiality, art, and photojournalism, the thesis has outlined the key *actors* and the baseline *associations* of the communicative space Aqua Mater. Yet, one element is missing from this picture, to wit a deeper understanding of semiotics. The previous subchapters have already approached semiotics as a method but without elaborating further. Therefore, before proceeding with the analysis, the following section is centered on semiotics as a theory and tells the 'story' of its 'particular relations' (Law, 2009) with aesthetics, photography, and ANT.

3.4 Understanding semiotics

3.4.1 Social semiotics and social practices

In the Nineties, the studies on semiotics underwent a significant transformation. In particular, scholars started to investigate social theories by combining them with visual, spatial, or multimodal analysis overall (Iedema, 2003). Notably, Kress and Hodge's publication entitled 'Social semiotics' (1988, as cited in Iedema, 2003), became a benchmark for this new tendency that conceived sign systems as "socially situated sign processes" (Lemke, 1988, as cited in Iedema, 2003, p. 32). By acknowledging this post constructivism facets, semiotics is understood by the thesis as an effort to depict and understand how meanings are generated and conveyed in social contexts (Kress and van Leeuwen, 1996, as cited in Harrison, 2003). Its focus are significations and their ongoing historicity (Lawes, 2019).

In this regard, a first 'particular relation' (Law, 2009) concerns semiotics and aesthetics. Generally *associated* (Latour, 2005) with culture, philosophy, and the natural world, aesthetics has long been the byword for beauty (Nair, 2011). Yet, this is imprecise as aesthetic may but also may not be beautiful. Indeed, aesthetic is more of a "form of communication" (Nair, 2011, p. 25). Said otherwise, given the present case of an art-research, aesthetic is considered a synonym for visual.

In this optic, Burnett (1995, as cited in Iedema, 2003) continues by 'moving' (Latour, 2005) towards photography and underlines how this artifact challenges viewers to question the traditional systems of interactions and the aesthetic of pictures overall, and to create a "new context for the articulation of meaning" (Iedema, 2003, p.47). Moreover, this semiotics' potential in photography has been furtherly studied by Nair (2011), who claims that this potential is a result of the fluidity of aesthetics agency, namely a way of conceiving the (semiotic) agency of aesthetics as an ongoing exchange between narratives, view angles, and lights regulation. Besides, according to the scholar, a photograph is an appeal for reflection and interpretation of the elements represented (Nair, 2011) because "any act of viewing is […] an act of translation, of displacing meaning onto new horizons" (p.140).

In this regard, more concretely, the *associations* (Latour, 2005) between photography and semiotics can be noticed by applying the categorization of pictures proposed by Van Leeuwen and Jewitt (2004) in their 'Handbook of visual analysis'. Notably, they speak in terms of narrative or conceptual pictures, whose details have been summarized in **table 2**.

Table 2: Photography and semiotics

CATEGORY OF PICTURES	DESCRIPTION	EXAMPLES
NARRATIVE PICTURES	These images present one or multiple vectors, namely lines that connect the elements of the pictures.	➢ The **eyeline**, for instance, is a vector starting from the gaze of one of the portrayed participants and heading towards another element or towards something not included in the frame
CONCEPTUAL PICTURES	If there are no vectors, a picture is *conceptual*: represented elements are here "define[d], […] analyse[d], or classif[ied]" (p.13).	➢ The **classification structure**: in these pictures, the represented elements are allocated in a symmetrical way within the frame, thus showing that they share some common ground, and belong to the same class. ➢ The **symbolic structure**: here, "the identity or meaning of one participant (the 'carrier') is established by another (the 'symbolic attribute')" (p.14). These latter are salient elements because of their dimension, lightning, centrality, etc....

Source: Van Leeuwen & Jewitt, 2004, pp. 11-14

As for **table 1** on the photographic language, the elements described in **table 2** will not be details of the analysis but rather notions for the discussion.

3.4.2 A.R.T., social semiotics, and social practices: issues of resemiotization

Originally, as some of the major contributions to ANT come from French scholars (for instance, Latour), ANT could have been called by using its French acronyms, thus, A.R.T. (Acteur-Reseau Théorie). It would have been quite a coincidence as ANT and art social practices do have a lot in common. At first, they are both time-specific because they are constantly changing (Halsall, 2019). Second, they represent, hence, propose an interpretative understanding of the social world of those time-specific frames they are referred to. Third, they question the distinction between human and non-human *actors* represented (in) or representing the ongoing *associations* (Latour, 2005; Halsall, 2019). Finally, ANT and art are "dependent upon [them] […] being recognized as being positioned and observed within a network of relations" (Halsall, 2019, p. 203).

Moreover, by translating these reflections in terms of semiotics, it can be noticed that art and A.R.T. are a mirror of each other as they both produce meanings by creating and negotiating links between various elements (Leon, 2017). Further, Barthes (1973; 1977 as cited in Van Leeuwen, 2005) elaborates on semiotics and illustrates how A.R.T. and, for instance, photography's meaning-making processes do not only occur on networks of *associations* but across multilayer networks of *associations* (Latour, 2005). In this regard, for example, Barthes (see Van Leeuwen, 2005) describes that photographs have at least two dimensions: the denotative one, "that is the layer of 'what, or who, is represented here?' and the […] connotation, that is the layer of 'what ideas and values are expressed […] and through […] [which] way" (p. 38).

This considered, to sum up, it emerges that meanings are results of (a.) *movements* through networks, (b.) *actors'* interactions, and (c.) intersections of *actant*'s agencies (Latour, 2005; Mattozzi, 2019). Yet, this reflection spotlights a linguistic detail that, at this point, cannot be left unquestioned: notably, when writing that meanings are products of process-es and movement-s, the fact that these actions are in plural is not simply a quantitative issue but rather a qualitative one. Significantly, this introduces to the issue of resemiotization[15] (Iedema, 2003).

This issue is an effect of the thesis' analytical choice of multimodality. In particular, this

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[15] Under a more technical remark, it is crucial to underline that this thesis acknowledges that resemiotization could constitute a method of analysis but, in this work, it is only approached as a key theory for the final discussion.

approach is "concerned with the multi-semiotic complexity of […] a practice" (Halliday, 1982, as cited in Iedema, 2003, pp. 39-40). Therefore, to discuss a multimodal analysis there must be a theory that enables the *translation* of meanings across the numerous *associations* of, for instance, Aqua Mater (Latour, 2005). While reading the existing literature on the matter, an initial answer to this is Bourdieu's 'scheme transfer' (1990, as cited in Iedema, 2003), namely a criterion that identifies homologies in the various layers of social reality. Nonetheless, the 'scheme transfer' is not sufficient for the present thesis as the research questions require a deeper connection between the layers. Thus, Iedema's (2003) conceptualization of resemiotization describes these 'particular relations' (Law, 2009) better, and it explains how significations can be transposed across the multilayer reality according to three characteristics: At first, resemiotization starts by recognizing that some semiotic processes are relatively more accessible or easily negotiable (for example day-to-day conversations or postures), whereas some others blend a more dense network of sensorial experiences, thus, a more complex discussion (Iedema, 2003). Further, this concept goes beyond logogenetic questions on *what* is represented overall and addresses *how* and *why* actors have designed artifacts this way with this set of meanings (Iedema, 2003). Finally, resemiotization values the materiality of interactions.

To sum up, this key concept is interpreted by the thesis as an associating tool that mediates between semiotics and Actor-Network theory: Not only it 'moves' around the ongoing *associations* across different *modes*, but it does so by acknowledging that, alongside, there is a 'moving' of meanings from one semiotic system to the other (Latour, 2005). In brief, resemiotization "takes the 'meaning-makers' perspective" (Iedema, 2003, p.50), therefore, it allows this thesis to interpret how meaning-making processes are overall *associated* in the communicative space of Aqua Mater. Indeed, thanks to the micro ethnography, the current work assumes the point of view of the exhibition's participants, namely, the current ultimate interpretive meaning-makers.

In light of these considerations, as the 'moving' (Latour, 2005) through the existing literature is complete, it is relevant to proceed more analytically and, therefore, to conduct the multimodal semiotic investigation on Aqua Mater.

4. Multimodal semiotic analysis of Aqua Mater

If considering the parallelism with cubism, reached this point, it is time to paint. The preparatory work is complete, the topic under investigation has been approached from several perspectives and appreciated in all its nuances, thereby, the sketches are to be transferred to the canvas. Similarly, this chapter represents the core part of the thesis: Here, a multimodal semiotic analysis will deconstruct the *associations translating* the exhibition Aqua Mater towards, aesthetics, photojournalism, spatiality, and sustainability, to investigate the underneath meaning making processes (Van Leeuwen, 2005; Van Leeuwen & Jewitt, 2004; Bezemer & Jewitt, 2010; Durrani, 2021; Leon, 2017; Lemke, 1993, 2009; Latour, 2005). In particular, the fieldnotes collected during the micro ethnography of practice (see Appendix 1) will detail the overall ANT-inspired strategy of inquiry, to identify which elements constitute the aforementioned processes of signification.

In this regard, as mentioned in the methodology section, while doing the ethnography, it became clear that the analytical considerations needed to be anticipated by a descriptive overview that acknowledge the role of the Pavilion. Indeed, Aqua Mater is a 'bounded space' (see Scollon, 2005, as cited in White, 2014), thus, a 'space' where the physicality of the exhibition impacts the processes of meaning making. In brief, within this case study, the photographs of Salgado were introduced to the visitors by the *actor* (of space) Pavilion Contemplation. Likewise, this following section presents the Pavilion to the thesis.

4.1 To space the analysis: an ethnographic description

Image 1: Outside and inside of the Pavilion Contemplation (Simon Vélez & Stefana Simic)
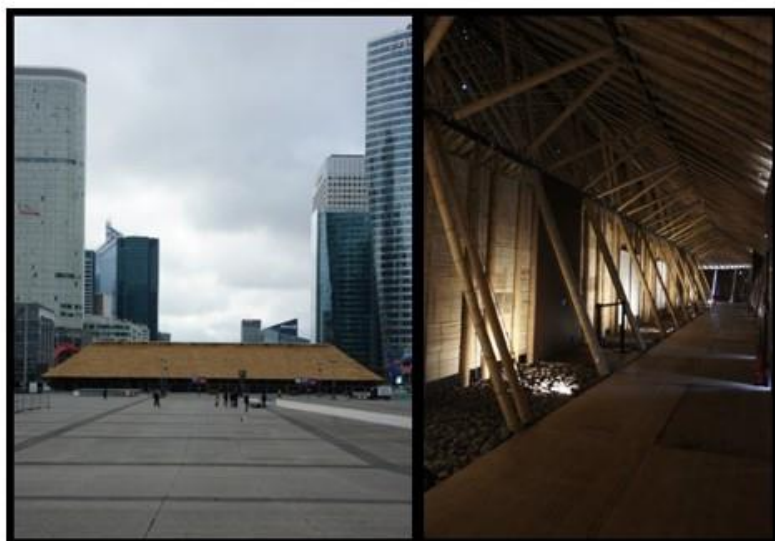
From the outside   The external corridor

Source: Fieldnotes from the micro ethnography

As illustrated by **Image 1**, to visit Aqua Mater means, at first, to enter in a relation with the bamboo Pavilion of Simon Vélez and Stefana Simic (Pic, 2021). Notably, this temporary building hosts the photographs and structures the interactions between the public and the photographic artifacts. Said otherwise, the Pavilion 'spaces' the exhibition (Doel, 2000, as cited in Anderson, 2003), therefore, the analysis of its semiotic processes. It is relevant to stress that, this kind of observations have a purely descriptive purpose, and aim at reconstructing and explicit the conditions that led to interpret the analysis in one way instead of the other.

Drawing back to what emerged from the ethnography, even once inside the Pavilion, photographs are not the initial *actors* with whom the audience relates. By retracing the path followed during the collection of data, **Image 2** outlines how visitors have to walk through half of the external corridor before facing the entrance to the central room, where Salgado's pictures are exposed (see the orange line in **image 2)**. Moreover, the bamboo wall (see 'square C' in **image 2**) has no openings towards the central room nor the external corridor towards the outsides. This translates in the public focusing primarily on the phonographies (Delage, 2021), the materiality of the bamboo, and the lightening (see Appendix 1). Besides, it is fascinating to accent that, in the same way that the thesis 'moved' (Latour, 2005) through the existing literature on sustainability, art, and semiotics before approaching the analysis, visitors have to move around the posters (see the gray squares in **image 2**) providing information on the Pavilion, Water, sustainability, and the technicalities of Aqua Mater's (i.e., its benefactors, the construction company, etc.) before observing Salgado's pictures.

In light of these considerations, according to **image 2**, having reached the opposite side of the main entrance (see 'square D' in **image 2**), the consequently (relatively) informed public (thus, the meaning-makers) face an aperture in the bamboo wall that, finally, opens to the central room:

> "Once entering the inner room, you have a mixed feeling as there are a lot of *contrasts* everywhere: Contrast with the light and the shadow of the room, with the black and white of the (quite big) pictures, with the previous narrowness of the corridor and the open space of the central room, with the smoothness of the wooden sheets on the floor and the intricate ceiling framing, and with the still images and their brightness that makes the photographs a source of light. The feeling is mixed because these contrasts are very dense and 'hit your eyes'."(Appendix 1, note 17)

To elaborate and make sense of these emotional reactions, the thesis will now 'take some steps' into the central room, pause in front of picture 23, and investigate the meaning-making *associations* to it akin (Latour, 2005; Iedema, 2003).

Image 2: 2d planimetry of the Pavilion
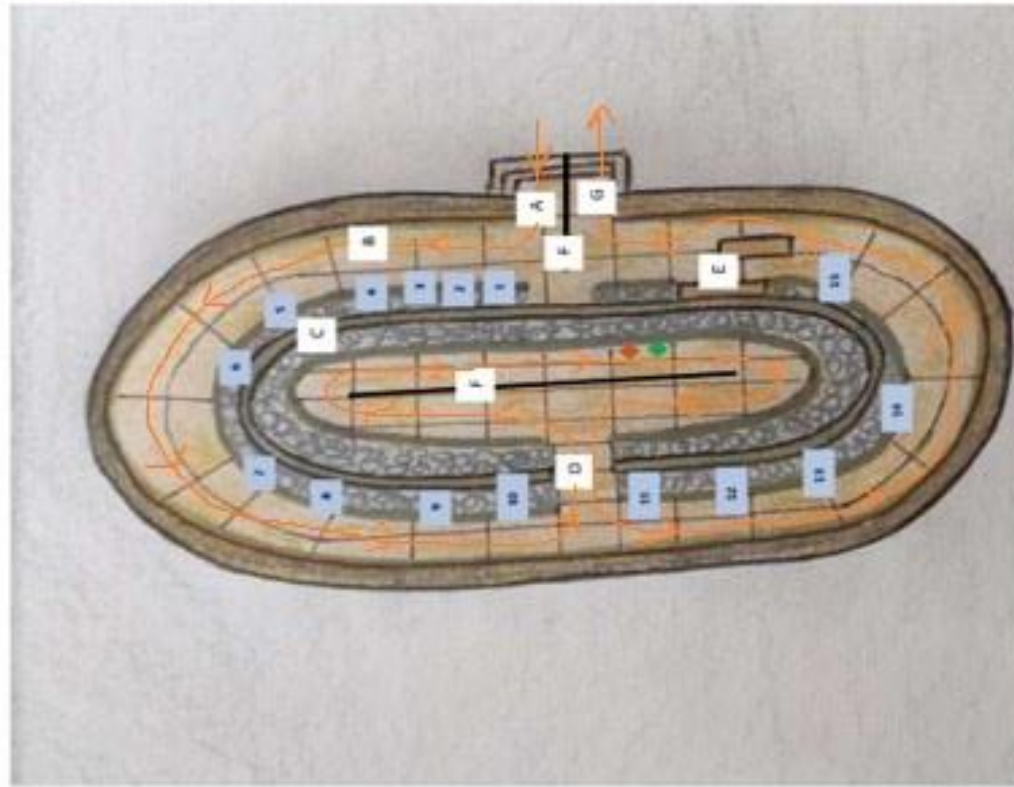
Figure legend

Architectural elements

A. Main entrance
B. External corridor
C. Bamboo wall
D. Entrance to the central room
E. Exhibition shop
F. Flexibarriers
G. Exit

Analyzed photographs

◆ Photograph 23
◆ Photograph 24

Posters

1. Aqua mater
2. The pavilion
3. Water on Earth, an UNESCO overview
4. Water and Dreams – an Essay on the Imagination of Matter
5. VINCI construction
6. Right livelihood Award Acceptance speech, December 9th 2005
7. The grand Benefactor
8. "Amazon", in General Song
9. Aqua Mater (2)
10. Phonographies from Sebastiao Salgado's exhibition Aqua Mater
11. Water
12. 21ˢᵗ century Water Tribune
13. World Water Day 2022: "Groundwater: making the Invisible Visible"
14. The place of the water in our knowledge
15. Aqua Mater's copyright

Source: Fieldnotes from the micro ethnography

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4.2 Analysis of photograph 23

4.2.1 Investigating the *presentational meaning*: introducing picture 23

Image 3: Reconstruction of how the central room appeared with the photographs hanged on the wall

Sources: Fieldnotes from the micro ethnography; Aqua Mater; Salgado, 2021, p.50

Lemke's (1993) categorization of the three phases of meaning-making led the thesis to articulate the investigation at first in terms of *presentational meanings*. Thereof: what are the visitors actually looking at?

As anticipated, by walking through the central room, once arrived at its center, the audience is introduced to picture 23 (see **image 3**). This image is a black and white representation (see Greenfield, 1994) of the Victoria Falls on a cloudy day, taken from a panoramic spot in front of them (see **image 4**) (Salgado, 2021).

Image 4: Photograph 23

Source: Salgado, 2021, p.50

Notably, the picture can be read as an 'icon', as the signifier quite clearly recalls the signified (see Pierce, 1965, as cited in Van Leeuwen, 2005). Yet, despite this correspondence, when investigating its modality, being an icon does not automatically *associates* with a low degree of scientific modality (Durrani, 2021; Van Leeuwen & Jewitt, 2004; Van Leeuwen, 2005). On the contrary, making claims on the 'modes' of presentation of picture 23 is challenging (see Durrani, 2021). The issue is in fact that, in this particular case, it is impossible to argue in terms of 'modality' without considering in parallel the 'salience[16]' of the elements represented (Van Leeuwen & Jewitt, 2004; Van Leeuwen, 2005).

In this regard, Van Leeuwen (2005) stressed how "the elements of a picture […] are balanced on the basis of their visual weight" (p.198). Accordingly, the present analysis recognizes three elements as 'heavier' than the others: the waterfall, the point where the photograph was taken from, and, problematically, the light. While the former is salient as of its central placement within the frame, the second is eye-catching because of its sharpness, and its high tonal contrast. Significantly, these two elements would *associate* the photograph with a high degree of naturalistic modality (Van Leeuwen & Jewitt, 2004). Nonetheless, also the light is a salient element. Notably, it manages a high tonal contrast all over the picture and regulates the sharpness of some elements over others in a rather 'abstract mode' (Durrani, 2021; Van Leeuwen & Jewitt, 2004). Therefore, to sum up, the modality of photograph 23 is highly naturalistic in some respects, and highly scientific in others.

In this optic, to conclude, the shapelessly of the light is such that the viewers are presented with a photograph that represents Victoria Falls (see Greenfield, 1994) but not only. The *presentational meanings* go indeed beyond the Falls and are created fluidly around the entire picture thanks to a unique representation of light. Yet, to understand and analyze how the photograph and the light interact with the viewers, it is necessary to *traverse* (Lemke, 2009) towards the investigation of the *orientational meanings*.

4.2.2 On the *orientational meanings* of photograph 23

Van Leeuwen and Jewitt (2004) approached Lemke's (1993; 2009) concept of *orientational meaning* in terms of 'interactive meaning'. Accordingly, the analysis focuses on the relation between the viewer and the photograph which is built upon three variables: contact, point of view, and

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[16] It is relevant to remember that the notions of 'salience' (Van Leeuwen & Jewitt, 2004) and 'visual weight' (Van Leeuwen, 2005) will be used as synonyms.

distance (Van Leeuwen & Jewitt, 2004). As for the former variable, picture 23 is a so-called "offer-picture" (Van Leeuwen & Jewitt, 2004, p.16) because no element 'looks' directly at the observer, thus, demanding something. In other words, the viewer is 'only' offered with information. More specifically, this is due to the fact that the picture does not feature any human *actors*, nor the key non-human *actors* are positioned right in front of the observer (Latour, 2005; Barad, 2003). For instance, the Falls, one of the more salient elements in the representation, is not directly under the viewer's eyes. On the contrary, it is overlapped, thus, mediated by the presence of the grass of the panoramic viewpoint (see **image 4**).

Moreover, on the subject of the viewpoint, the second variable of the interactive meaning consists of the point of view (Van Leeuwen & Jewitt, 2004). By re-proposing **Figure 2**, namely Halliday's "system network" (see Van Leeuwen & Jewitt, 2004), the analysis recognizes that picture 23's meaning-making potential results in a sense of equality and engagement.

Figure 2: The meaning making potential according to the system networks
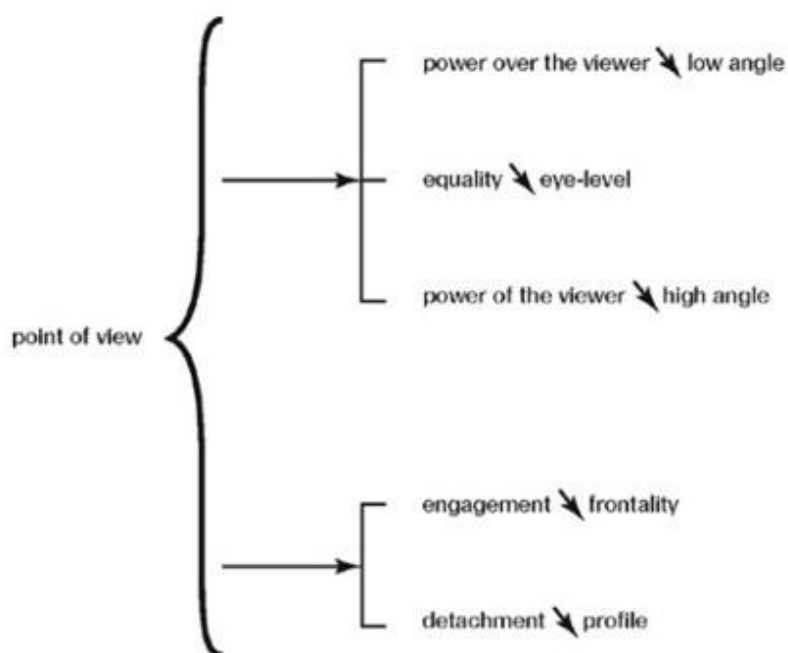
Source: Van Leeuwen & Jewitt, 2004, p.14

Notably, the picture does not 'zoom' closely on the waterfall but includes a glimpse of the scenic spot. Hence, the presence of this element in the frame representationally constructs and locates the point of view at, in this case, the eye level. Besides, the sense of engagement is fostered by the frontal orientation of the represented elements and, by *associating* back to the *presentational meanings*, the high degree of naturalistic modality. Significantly, when introduced to

a picture that 'naturally' illustrates the same scene that one would have seen, given the same circumstances and point of view of the photographer, it is easier to feel engaged. This is because the point of view gets perceived as more accessible, and so the potential of feeling engaged is higher.

Moving towards the last variable of the interactive meanings, to analyze the photograph in terms of 'distance' requires a prior reflection on (once again) what picture 23 represents. More precisely, by conducting a 'conventional reading', following a 'denotative perspective' (Leon, 2017), the photograph represents Victoria Falls. However, under a 'connotative perspective' (Leon, 2017), the picture features, above all, water. Thereof, when considering that "[i]mages can bring people, places and thing close to the viewer or 'keep them at arm's length" (Van Leeuwen & Jewitt, 2004, p.17), within picture 23, the "places" are represented by UNESCO's World Heritage Victoria Falls, and the "thing" is water (Salgado, 2021). Now that the terms of reference are clear, the thesis can proceed by *associating* them with the variable 'distance'.

By integrating the denotative with the connotative findings, in the photograph at hand, the Victoria Falls (thus, water) are represented through a *medium shot* [17] that, according to Van Leeuwen and Jewitt (2004) semiotically "suggest[s] a social relationship" (p. 17) between the observer and the 'places and things' portrayed (see Van Leeuwen & Jewitt, 2004). It is crucial to stress that the fact that the observer cannot see the Falls at all their height is not due to the frames 'cutting' the view. Rather, there is another element within the same photo that performs the 'cut' (Barad, 2003). To sum up, the 'social relationship' (Van Leeuwen & Jewitt, 2004) installed between the viewer and water is created and mediated by the presence of the grass from the scenic spot in the foreground.

It is fascinating to underline that if the photo had been taken a few meters ahead, a long shot[18] would have suggested a more detached relationship between the observer and the Falls (Van Leeuwen & Jewitt, 2004). Therefore, the question arises as to what significance has this detail in the representation. The answer to this can be found either in a semiotic analysis of the *organizational meanings* of the photograph Lemke, 1993), or by dwelling on the facets of the aforementioned conventional reading (Leon, 2017). As of now, the thesis chooses to deepen on the conventional reading.

In this concern, the present study interprets the matter of the mediated social interaction as

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[17] This terminology has its root in the studies of cinema, and it is generally applied to *human* representation. Nonetheless, because of the thesis' ontology and overall ANT's perspective, this categorization is referred to *human* and *non-human actors* (Latour, 2005; Barad, 2003).

[18] In a *long shot*, the figure is represented fully (Van Leeuwen & Jewitt, 2004).

a matter of generating a 'commanding function' (Van Leeuwen & Jewitt, 2004; Leon, 2017). This presupposed that the photographed scene is read by the observer as an invitation to 'do something' (Leon, 2017). More specifically, if, on the one side, few meters ahead would have suggested a distant form of relationship, on the other, from a few meters behind, a close-up would have steered a more intimate relationship (Van Leeuwen & Jewitt, 2004). As emerges, the difference is that the invitation is *associated* with a *social* and collective network of interactions (Latour, 2005). In this optic, picture 23 invites the group of visitors to do something. However, the 'what' is not yet interpretable at this point in the analysis.

Before moving to the investigation of the *organizational meanings*, one last consideration links back to the 'salience' of light. In brief, the heaviness of the element 'light' shifts the observation of picture 23 into an 'emotional reading' (Leon, 2017): in detail, the homogeneous and dense presence of light *associates* with an overall dreamy and idyllic emotional aesthetic (Leon, 2017). However, to be more precise, this emotional reading does not apply to the entire picture because the grass in the foreground is highly on focus and very detailed (see **image 4**). Yet, this contrasting disposition and interaction of the represented elements is a matter of spatial relationship, therefore, of *organizational meanings* (Van Leeuwen & Jewitt, 2004; Lemke, 1993).

4.2.3 Picture 23 and its spatial relationships

When analyzing the *organizational meanings*[19] of a photographic artifacts, namely how elements are disposed within the frame, Van Leeuwen and Jewitt's (2004) conceptualization of 'informational value' helps reflecting on the aforementioned intra-framing spatial relationships. In detail, the emotional reading remarked the creation of two different feelings: a dreamier emotional aesthetic for the Falls, and a more unromantic one for the foreground. This reflects what Kress and Van Leeuwen (1996, as cited in Van Leeuwen & Jewitt, 2004) associated with the semiotic of the 'top' versus 'bottom' placements. Notably, they stressed how elements on the top are perceived as 'ideal' and the bottom ones as 'real' (Van Leeuwen & Jewitt, 2004). If *applying* this distinction on **image 5**, it can be noticed that, as this semiotic correspondence mirrors the previous emotional reading, the light emerges an *actor* with a remarkable and amplifying aesthetic agency (Latour, 2005).

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[19] In this subchapter, the notion of *organizational meaning* (Lemke, 1993) is considered exchangeable with the ones of 'representational meaning' (Van Leeuwen & Jewitt, 2004) and 'internal composition' (Durrani, 2021).

Image 5: Information value of Photograph 23 (1)

Source: Salgado, 2021, p.50

Still, on this facet of 'informational value', Kress and Van Leeuwen specified that the placement on the top underlines the picture's "ideologically most salient part" (Van Leeuwen & Jewitt, 2004, p.19). Accordingly, this consideration is *associated* by the thesis with the interpretation that Victoria Falls, thus water, are the "ideologically most salient" parts of photograph 23 (see Van Leeuwen & Jewitt, 2004; Iedema, 2003).

Another spatial relationship belonging to the informational value is the one describing the left as opposed to the right placement (Van Leeuwen & Jewitt, 2004). Although this distinction carries a multiplicity of meanings even inside a singular cultural tradition, the thesis analyses the elements on the left as 'given' ones, and the one on the right as 'new' (Kress & Van Leeuwen, as cited in Van Leeuwen & Jewitt, 2004). As illustrated in **image 6**, the given elements are mainly standing in the background, thereof, they are the Falls, the blurred rocky cliff, and the cloud of evaporated water. On the contrary, the right side of the picture is mostly occupied by the grass of the scenic spot, the Falls, and some clouds. Moreover, it is relevant to dwell on these 'new' elements as they represent something "the viewer […] must pay special attention" to (Kress and Van Leeuwen, 1996, as cited in Van Leeuwen & Jewitt, 2004, p.19). Significantly, in this regard, this spatial relation outlines, once again, the emblematic role of the scenic spot. However, its full understanding requires a deeper analysis.

Image 6: Information value of Photograph 23 (2)
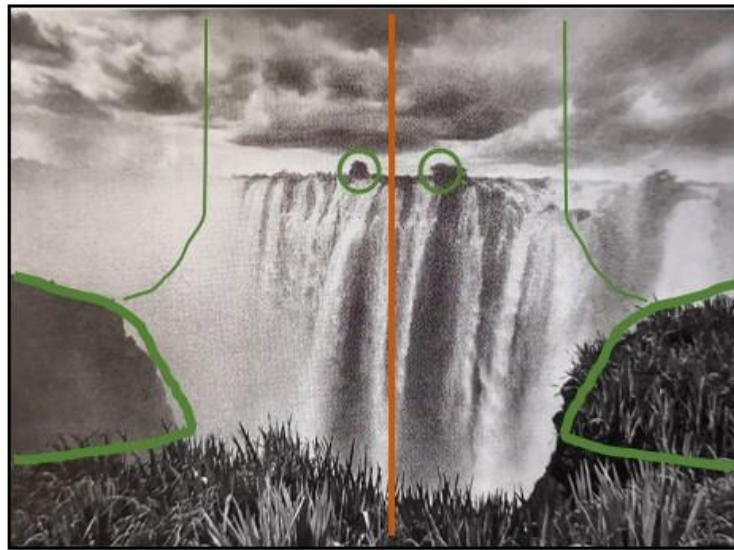
Source: Salgado, 2021, p.50

Back to investigating **image 6**, once a line is drawn in the middle, the overall 'depiction[20]' appears symmetrical (Lemke, 1993). By integrating this observation with a further analysis of the 'framing', the vectors of **image 7** outline that symmetry reflects the connection (between) and, to an extent, amplifies the visual agency of the peripherical elements of directing the viewer's gaze toward the center (the Falls), and then down (Van Leeuwen & Jewitt, 2004).

Image 7: Information value and framing of Photograph 23
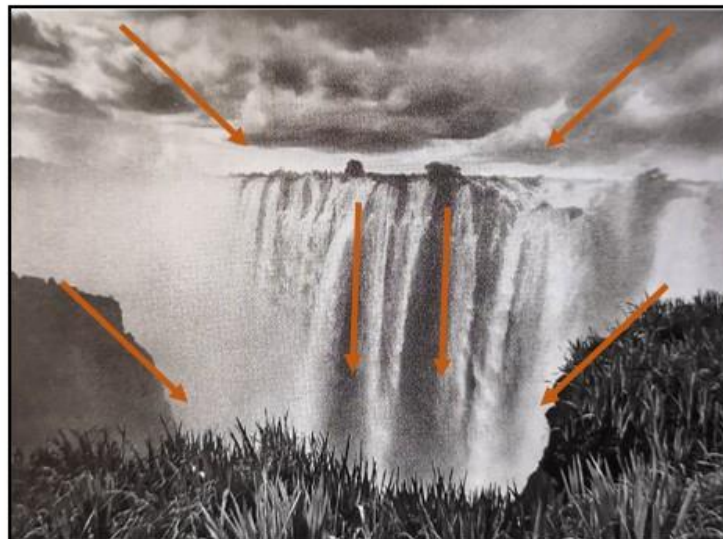
Source: Salgado, 2021, p.50

Furthermore, these vectors lead towards a broader reflection in terms of the last variable of

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[20] As anticipated in the methodology, the term 'depiction' (Lemke, 1993) would be used as a synonym for 'framing' (Van Leeuwen & Jewitt, 2004).

the 'information value' (Van Leeuwen & Jewitt, 2004): the placement on the horizontal versus the vertical plane. The vertical one, in particular, is the "plane of the spectacle, […] the plane on which static categories are fixed and spatial order […] created" (Van Leeuwen & Jewitt, 2004, pp. 204-205). By *associating* the semiotic of the vertical plane with the vectors underlined by the framing (Iedema, 2003), the thesis argues that, in photograph 23, the stillness of the elements of the vertical plane (Van Leeuwen & Jewitt, 2004), here consisting of a dreamy representation of Victoria Falls (and water), is being challenged. In fact, the vectors of **image 7** are not pointing to a neutral section of the photograph, but rather to the horizontal plane, "the plane of activity" (Van Leeuwen & Jewitt, 2004, pp. 204-205). Hence, also the analysis of the 'internal composition' (Durrani, 2021) has identified an overall 'commanding function' within photograph 23 (Leon, 2017), so it remains to elaborate on what the invitation in Photo 23 consists of.

According to a first level of interpretation, as suggested by these last considerations on the 'depiction', picture 23 challenges the stillness of an idyllic representation of Victoria Falls. Yet, diving deeper, the challenge not only concerns how the viewers see the water, but also how they could see it differently. In this regard, the fact that the scenic spot is placed in the foreground, in the horizontal plane, and in a way that prevents the view of the Falls on their full height makes the scenic spot the mediating *actor* of picture 23's invitation (Latour, 2005). Furthermore, within its role of mediator, the scenic spot is, under an aesthetic perspective, the physical obstacle that impedes a full view and, under a semiotic perspective, the sign fostering action. In brief, by questioning what truly hinders a clear view of the Falls, picture 23 invites the viewers to act collectively to 'move one step further' to see and, thus, go beyond a blurred dreamy representation of water. In brief, the thesis interprets the network of meaning-making processes of picture 23 as an effort to challenge the observers to watch water in a more realistic way.

In light of all these considerations on the 'representational meanings' of photograph 23 (Durrani, 2021), before *traversing* (Lemke, 2009) towards the investigation of the external cohesion of the picture with the space of Aqua Mater, it is necessary to scrutinize picture 24.

4.3 Analysis of photograph 24

4.3.1 Investigating the *presentational meaning*: introducing picture 24

Image 8: Reconstruction of how the central room appeared with the photographs hanged on the wall

Sources: Fieldnotes from the micro ethnography; Aqua Mater; Salgado, 2021, p.50-54

As illustrated in **image 8**, by taking one step on the right, picture 23 gave way to picture 24 namely the focus of this section of the analysis. As for the previous photograph the investigation cannot but start by introducing the *presentational meanings* to it *associated* (Lemke, 1993).

Image 9: Photograph 24

Source: Salgado, 2021, p.52-53

In this optic, **image 9**[21] shows that the black and white representation in hand features, at a

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[21] As for **image 3**, the source of **image 9** is not directly the fieldnotes of Aqua Mater, thus the pictures taken during the ethnography, but rather the journal of the exhibition. Differently from image 3, however, **image 9** differs from the one hanging on the bamboo wall because of the black line in the middle (the stitching of the pages of the journal), and the white writings on the left. Notably, these two elements are not the subject of the analysis as they are some specific details of the magazine.

first glance, a strong rainy day in the Serra do Divisor National Park (Salgado, 2021). In details, according to Pierce's study (1964, as cited in Van Leeuwen, 2005), the picture can be read as an 'index': there is indeed a causal relation between the signified and the signifiers as this latter represents a massive water column which is the result of the rainy weather (signified). Besides, an investigation on the 'salience' of the photograph contributes to tacking on details to the interpretation of this photographic representation (Greenfield, 1994).

In this concern, the thesis recognizes that three elements are visually heavier than the others: the forest, the column of rain, and the clouds (see **image 9**). The former is perceived as heavier because of its placement in the foreground, its sharpened and considerable amount of details, and its relatively big size. As for the rain, its salience is rooted in its central placement and its monotonicity, which diverges from the overall highly tonal contrast of picture. Finally, the clouds are weighty because of their texture (which is very neat on the left and grainy in the center), their placement on the top on the frame, and their high color contrast (Van Leeuwen, 2005). This considered, by *traversing* (Lemke, 2009) towards the study of the 'modality', it can be observed that picture 24 represents in a 'naturalistic mode' the rain in the Serra do Divisor National Park (Durrani, 2021; Van Leeuwen, 2005; Van Leeuwen & Jewitt, 2004).

However, this initial visual analysis has to be expanded and *translated* with some semiotic considerations (Iedema, 2003). By digging in the scrutiny of 'salience', indeed, it emerges that there is a fourth element that captures the attention: the *association* of the clouds with the column of rain (Latour, 2005). In particular, the 'abstract way' (or mode) this two elements are connected with triggers an 'emotional reading', resulting in the thesis comparing the cloud and the rain with an atomic mushroom[22] (Leon, 2017; Latour, 2005; Salgado, 2021). Such parallelism is salient from a cultural point of view as it associates the photograph with a "potent cultural symbol - to the point that it - may override[s] pure perceptual salience" (Van Leeuwen, 2005, p.198; Forceville, 2008). Moreover, the semiotic impact of this association requires the analysis to *traverse* towards the investigation of the relation between the viewer and the photograph, to wit, the *orientational meanings* (Lemke, 1993; 2009).

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[22]This parallelism was also explained thus influenced by the technical data card related to this picture in Aqua Mater. Yet, the role of the written card is not part of this section of the analysis but will be scrutinized in subchapter 4.4.

4.3.2 On the *orientational meanings* of photograph 24

If for photograph 23, the emotional reading was less evident or, in any case, mediated by the role of light, the emotional reading of picture 24 is quite straight-forward. According to the thesis' interpretation, the "emotive identity" (Leon, 2017, p.640) of the picture is rather dramatic, powerful, and, in a romantic perspective, sublime[23] (Hitt, 1999). This is observable also by *translating* towards the analysis of the 'interactive meanings', thus of the 'contact' (Van Leeuwen & Jewitt, 2004). In this matter, the present photograph is a 'demand picture', as the core elements of the representation are directly under the viewers' eyes and not mediated by the placement of any other elements within the frame (Van Leeuwen & Jewitt, 2004). Yet, to understand specifically what is being asked while facing the powerful representation of that rainy day (see **image 9**), it will necessitate investigating the *organizational meanings* (Lemke, 1993). Nonetheless, before that, the interactive meanings are yet to be fully scrutinized.

In this regard, having reflected in terms of 'powerful representation' and 'sublime' outlines the crucial role of the 'point of view' and its meaning-making potential (Van Leeuwen & Jewitt, 2004). By confronting once again with **Figure 2** (see the subchapter 4.2.2), the thesis *associates* three different points of view to the first three salient elements: notably, the forest is seen from a high angle, the column of water from an eye-level, and the clouds from a low angle. Consequently, the 'meaning-making potential' to them *associated* (Iedema, 2003) correspond to, respectively, power of the viewer, equality, and power over the viewer (Halliday, 1978, as cited in Van Leeuwen & Jewitt, 2004). Before interpreting these findings, it is crucial to *translate* (Latour, 2005) in a sort of mechanical way this system of interaction in terms of 'distance' and, only after this process, discuss what emerges from the overall interactive meanings' analysis (see **table 3**).

In this concern, by reusing this triple-structure of associations, the thesis recognizes that the forest is represented through a 'medium shot', the column of rain through a 'long shot', and the clouds through a 'close-up' (Van Leeuwen & Jewitt, 2004). Correspondingly, the former association *translates* in a social relationship, the second in a detached one, and the last in an intimate one (Van Leeuwen & Jewitt, 2004). To sum up, although this phase of the investigation is very technical and acritical, it enables to delineate the network of *associations* constituting the meaning-making texture connecting the viewers with the picture.

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[23] In Kant's word, the sublime corresponds to the moment humans "measure […] [themselves] against the apparent almightiness of nature [and] […] make our power of resistance of trifling moment in comparison with their might" (1790, as cited in Hitt, 1999, p. 605).

Significantly, as summarized in **table 3**, by acknowledging that viewers are facing the elements of picture 24 frontally, thus, with a high degree of engagement, the overall semiotic network of associations reveals to be densely intertwined and powerful (because highly engaging).

Table 3: the interactive meanings of picture 24 and their semiotic potential

REPRESENTED ELEMENT	POINT OF VIEW	MEANING MAKING POTENTIAL	DISTANCE	RELATIONAL-SEMIOTIC POTENTIAL
THE FOREST	High angle	Power of the viewer	Medium shot	Social relationship
WATER COLUMN	Eye-level	Equality	Long shot	Detached relationship
CLOUD	Low angle	Power over the viewer	Close-up	Intimate personal
CLOUD AND WATER COLUMN	Frontal low angle	Power over the viewer	Overall medium shot	Social relationship

Source: Van Leeuwen & Jewitt, 2004

To draw some general considerations, a 'conventional reading' of the picture helps organizing these findings (Leon, 2017). Notably, under a 'denotative' angle, the *associations* of the forest, the water column, and the cloud with the variables 'point of view' and 'distance' *are* synthetized by the previously identified 'naturalistic modality' (Leon, 2017; Van Leeuwen & Jewitt, 2004; Durrani, 2021). To sum up, "what is meant […] [is] said" (Leon, 2017, p.641): for instance, the fact that in the present scene[24], the National Parc is seen with a high angle (*what is said*) is directly interpreted by the thesis as a sign of power of the viewer over the natural reserve (*what is meant*) that, furthermore, is intrinsically a matter of social and collective relationships (see **table 3**). In brief, for the first three elements in **table 3**, the semiotic potentials are relatively straight-forward.

Nonetheless, the same cannot be said for the *association* of the cloud with the water column. This associated element has indeed a 'connotative function' implying that there is an underlying meaning needing further elaboration (Leon, 2017). In this regard, on the first level of analysis, **table 3** shows that, despite the general aerial perspective, this specific viewpoint is interpreted as frontal but from a low angle, thereby suggesting the feeling that this rainy 'atomic mushroom' has power over the viewer. Moreover, the clouds seem to be continuing over the head of the observer but are cut by the frame in a 'medium shot' that suggests that this semiotic dynamic inscribes in a broader intersubjective form of interaction. Besides, by expanding this reflection with the aforementioned sublime emotional identity of this sign (Hitt, 1999), the thesis inductively hypothesizes that photograph 24's implicit meaning is to inform the visitors about the power of water, and to stress

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[24] Which represents the same scenery one could have seen given the same conditions and viewpoint of the photographer.

that this is a social and shared issue (Thomas, 2006; Leon, 2017). Yet, for this hypothesis to be confirmed, also the *organizational meanings* have to be coherent with this logic, thus, the investigation *travers* now towards picture 24's spatial relationships (Lemke, 1993).

4.3.3   Picture 24 and its spatial relationships

As for picture 23, this phase of the investigation will deal with the "way signs cohere within a given image" (Durrani, 2021, p.138), thus with the analysis of the photograph's 'composition'. Without conducting a thematic analysis but by following the common thread from the previous subchapter, the powerful impact of picture 24 transpires from the scrutiny of its 'information values' (Van Leeuwen & Jewitt, 2004). In particular, the spatial binomial top-bottom embeds a semiotic interpretation that suggests how elements on the 'bottom' are the realistic ones, and the 'top' ones are ideal and powerful (Van Leeuwen & Jewitt, 2004; Lakoff & Johnson, 1980, as cited in Van Leeuwen, 2005). While *associating* these considerations to the present photograph, the National Park is quite literally the 'down to earth' element (Van Leeuwen & Jewitt, 2004), whereas the rainy clouds are the idealized yet dominant *actors* (see **image 9**). Alongside, these latter are, the "ideologically most salient part" of the representation (see Van Leeuwen & Jewitt, 2004).

Despite this opposed semiotic potential, the thesis interprets the overall 'framing' of the picture as fairly connected (Van Leeuwen & Jewitt, 2004). Notably, technically speaking, when examining the 'depiction' of the photograph with the 'informational value's' binomial division-polarization, several factors construct a connected 'framing' (Lemke, 1993; Van Leeuwen, 2005; Van Leeuwen & Jewitt, 2004).

At first, as illustrated in **image 10**, the blue lines highlight how the observation moves across three horizontal bands. In details, the bigger lowest one is represented as full of tonal contrasts, and with a rich texture and very sharpened details (Van Leeuwen, 2005). Further, the highest presents the same characteristics but translated in a bigger texture (see **image 11**). Hence, these two external bands are not symmetrical but aesthetically similar.

Image 10: Organizational meanings of picture 24
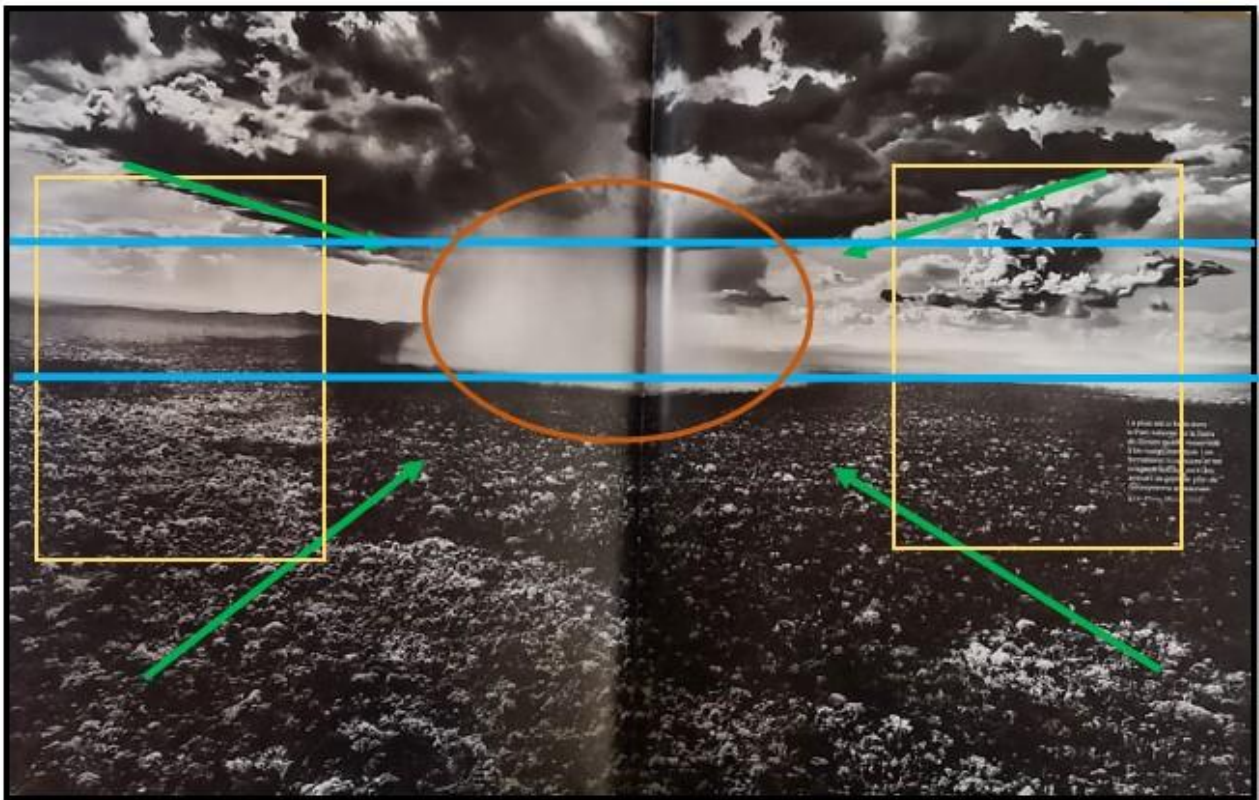
Source: Salgado, 2021, p.52-53

Image 11: Details of the textures of the upper and lower band

Source: Salgado, 2021, p.52-53

On the contrary, the central band has the opposite characteristics that, to some extent, reflect the way of representation of the *actor* 'column of water': monotonality and brightness. In this concern, Van Leeuwen (2005) stressed that "if composition makes significant use of the centre, [...] the centre is [...] the nucleus of what is communicated" (p.208). Accordingly, the thesis recognizes the central band as 'significant', thus, semiotically relevant precisely because of its

diversity from the other two. Said otherwise, the fact that it is possible to observe some similarities between the upper and lower band but not with the central one is interpreted as semiotically meaningful, therefore, not to be left unquestioned.

In this regard, by this point of the investigation, an initial semiotic role of the center consists of connecting the upper with the lower band by presenting itself as their aesthetical non-self. Significantly, the upper and the lower band have some common characteristics but also some common non-characteristics: they are not monotonal, nor highly bright[25]. Thereof, in this respect, the central 'belt' connects the extremes of the photograph in an indirect way.

Moving towards the 'particular relations' (Law, 2009) of the 'information value', the green vectors of **image 10** and the columns of (weak) light framed by the yellow rectangles reinforce the connection between the internal elements of picture 24 Van Leeuwen & Jewitt, 2004). Moreover, they 'narrow' the perception of what is the center which, accordingly, now corresponds with the thick rainy column (see the orange circle in **image 10**) (Van Leeuwen & Jewitt, 2004). It is fascinating to remark that, as for picture 23, the gaze of the observers and the crucial placement in the center is again occupied by water (the rain).

Image 12: Left-right placements in the central band of photograph 24

Source: Salgado, 2021, p.52-53

As illustrated by **image 12**, the final place-binomial under investigation consists of the left versus right placement (Van Leeuwen & Jewitt, 2004). In detail, this investigation addresses the semiotic understanding of the "nucleus of what is communicated" (see Van Leeuwen, 2005), thus, it focuses on the central band. Furthermore, the semiotic of the band is developed horizontally thereby it also reveals some insights on the horizontal plane, the 'plane of activity' (Van Leeuwen, 2005).

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[25] To be more precise, the central part of the upper band recalls the central band because of its grainy resolution. However, the fact that there is a similarity should not come as a surprise. Indeed, it linked with the already mentioned *association* of the clouds with the central column of rain which is not only conceptual but also technically aesthetical (Latour, 2005).

As for picture 23, the left is considered as occupying something 'given' which, in this case, corresponds to clouds in the far foreground and a section of the National Park, all under a brightly weak column of light. Nonetheless, the thesis interprets that, overall, within the blue circle there is nothing particularly eye-catching (see **image 12**). Yet, this 'absence' of 'salience' becomes fascinating if considered in *association* with the orange circle (see **image 12**): indeed, as anticipated with the yellow rectangles in **image 10**, in both the lateral sections of the photograph there is a column of (weak) light. However, if on the left side, the light does not outline anything relevant, on the right one, the light frames what appears to be a miniature of the overall picture 24 (see **image 13**[26]). In brief, the *association* of the blue with the orange circle (**image 12**) *translates* in a semiotic statement declaring that there is (basically) nothing given but all to be learned (and re-learned) (Iedema, 2003; Van Leeuwen & Jewitt, 2004).

Image 13: Zoom on the right side of the central band of Photograph 24

Source: Salgado, 2021, p.52-53

In conclusion, to elaborate on these findings, it is necessary to *traverse* back to the hypothesis formulated in the previous subchapter (Lemke, 2009). Significantly, the analysis of the 'representational meanings' not only is coherent with what was interpreted earlier but amplifies how the acknowledgment of the role of water is not only a current issue but will have an ongoing echo.

Having completed the analysis of, respectively, picture 23 and picture 24, the investigation *traverses* now towards a broader understanding of these two within the exhibition Aqua Mater.

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[26] The black square represents a column of water that was observable in the picture exposed in Aqua Mater, but that cannot be properly noticed in this image presented in the thesis.

4.4 Analysis of the composition performed by Aqua Mater

While visiting Aqua Mater, making any consideration of the 'contextual cohesion' of the pictures is not an obvious shift (Durrani, 2021). Indeed, for instance, during the micro ethnography, it was a transition that occurred only after having observed one-quarter of the photographs: "[…] If at the beginning the focus goes unidirectionally from one picture to the following one, after a while, it moves from one picture to the next and then back. Said otherwise, the photographs enter in relation with each other." (Appendix 1, note 26). Still, despite this initial hesitation, what is semiotically interesting for this thesis is not only how photojournalism triggers processes of meaning-making, but also how a communicative space affects these processes. Therefore, the analysis will now 'zoom-out' the single pictures and space them in the exhibition Aqua Mater.

4.4.1 On the system of organizational relations

Before starting, it is crucial to stress that the thesis acknowledges that the *presentational* and *orientational meanings* related to the photographs' *association* are more complex than a simple 'sum' of the earlier investigations. Nonetheless, because of time and space constraints, this section will only focus on the deconstruction of the *organizational meanings* of this *association* (Lemke, 1993). Indeed, Van Leeuwen and Jewitt (2004) claimed that "[i]n space-based semiotic modes such as images and architecture it is a matter of spatial relationship, of 'where things are' in the semiotic space" (p.10). Accordingly, **images 14** and **15** reproduce how the photographs appeared in Aqua Mater.

Image 14: Frontal reconstruction of how picture 23 and 24 appeared hanged on the wall

Sources: Fieldnotes from the micro ethnography; Aqua Mater; Salgado, 2021, p.50-54

Image 15: Lateral reconstruction of how the Pavilion appeared with the pictures hanged

Sources: Fieldnotes from the micro ethnography; Aqua Mater

As highlighted by the red square brackets (see **image 15**), the analysis begins with the investigation of the horizontal plane, namely the section where "trajectories of activity can be marked" (Van Leeuwen, 2005, pp. 204-205). In this regard, coherently with the unfolding of the previous subchapters and with the choice of moving clockwise across the central room (see **image 2**), the investigation *traverses* towards the spatial binomial left-right placement (Lemke, 2009; Van Leeuwen & Jewitt, 2004). On this subject, it can be seen from the outset that this facet of 'informational value' is *associated* with an overall connected 'framing' (Van Leeuwen & Jewitt, 2004): indeed, by moving the gaze from left to right, **image 16** outlines how the composition of picture 23 and the one of picture 24 are similar. Moreover, a diagonal couple of bamboo canes (see 'squares 1a/1b' in **image 16**) are consequently interpreted not as disconnecting elements but rather as material frame lines that contour the spatiality of the two photographs (see the yellow line in **image 16**).

By *traversing* back to the scrutiny of left-right placement (Lemke, 2009), the *associations* between 'left-given' and 'right-new' can be studied on two levels (Van Leeuwen & Jewitt, 2004). On the one hand, by reflecting on the aforementioned similar spatiality of the photographs, the visual elements (see 'squares 2a/2b' in **image 16**) are the 'familiar' *actors* for the visitors, whereas the technical data cards (see 'squares 3a/3b' in **image 16**) are the elements

providing with 'more' information (see **image 17;** Appendix 1).

Image 16: Connection through similarities

Sources: Fieldnotes from the micro ethnography; Aqua Mater; Salgado, 2021, p.50-54

Image 17: Details of the technical data cards of picture 23 and 24

Sources: Fieldnotes from the micro ethnography; Aqua Mater

On the other hand, considering **image 14** overall, the thesis interprets picture 23 as representing something known and picture 24 as the subject to pay attention to. This semiotic *association* is fascinating when considering that this meaning-making mechanism is replicated throughout the exhibition. Furthermore, concerning the issue of the "new and special attention" (see Van Leeuwen & Jewitt, 2004), is it crucial to dwell on point 31 of the fieldnotes: "[...] picture 24 is more eye-catching than the 23rd, at a first glance. In a way, it is because of/only after

having focused on picture 24 that now picture 23 appears noticeable" (Appendix 1). Significantly, this observation suggests that the binomial 'right-new' is not fixed upon the left elements but *translates* back to (thus, impacts) the elements on the right. Besides this negotiation of meanings back and forth, from right to left, and vice versa is physically embedded by a material element of Aqua Mater, to wit the bamboo wall (see 'squares 4a/4b' in **image 16**). Within the analyzed horizontal plane, indeed, the bamboo wall 'draws' a bundle of horizontal vectors that connects all the pictures. More specifically, the fact that the wall is curved and, therefore, free of cutting angles (see 'square C' in **image 2**), makes these vectors bidirectional. Finally, this results in a free observation that constantly moves around the room.

Focusing back on the spatial relations of photographs 23 and 24, the connection of their 'depiction' is also obtained by the presence of "rhymes of […] forms" and representations (Van Leeuwen & Jewitt, 2004, pp. 21-22): As illustrated in **image 18** and reported by the micro ethnography, "in the first one there is a powerful and well-known waterfall seemed to be reflected in the following picture by a powerful 'sky-waterfall' […]. Moreover, these two pictures together recall in a way the water cycle" (Appendix 1, note 31).

Image 18: 'Rhymes of forms' connecting picture 23 and 24

Sources: Fieldnotes from the micro ethnography; Aqua Mater; Salgado, 2021, p.50-54; Van Leeuwen & Jewitt, 2004

To summarize, within the 'plan of activity', the analysis of the 'contextual cohesion' of pictures 23 and 24 reveals how they are inscribed in a fluid network of *associations* upon which meanings are constantly re-negotiated (Van Leeuwen, 2005; Durrani, 2021; Latour, 2005). This considered the analysis proceeds now by *traversing* across the 'vertical plane' (Lemke, 2009; Van Leeuwen, 2005).

Image 19: Connections throughout the 'vertical plane'
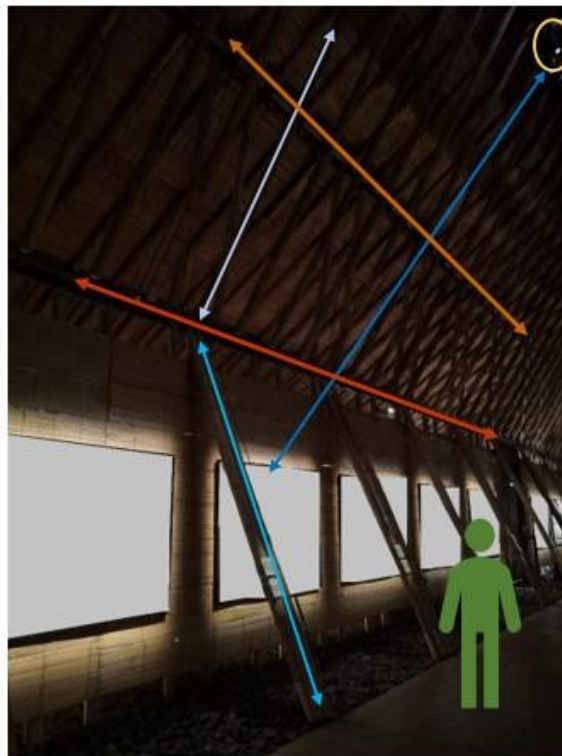
Sources: Fieldnotes from the micro ethnography; Aqua Mater; Van Leeuwen, 2005

Notably, as underlined in **image 19**, this *traversal* follows the vectors on blue tones and, once again, is not unidirectional but displaces up and down (Appendix 1). Differently from the connection illustrated in **image 18**, the present one is carried conceptually by the vectors and the light (see the yellow circle in **image 19**), and physically by the bamboo canes. In other words, remarkably across the 'vertical plane', the materiality of the 'bounded space' of Aqua Mater can be *associated* with a direct influence on the process of meaning-making: in particular, the bamboo is reconfirmed here as a connecting and, to a certain extent, amplifying *actor* (see White, 2014). For instance, if on the 'horizontal plane' the wall was overlapped by the photographs, by moving towards the ceiling, the vectors on orange tones trace the bamboo canes, and reaffirm the fluid connection between the pictures in a less 'covered' way (Van Leeuwen, 2005).

Thus said, the final investigation in terms of 'informational value' need to have the focus back on the vertical blue vectors. Significantly, within the 'representational meanings', one last binomial questions the placement of the 'ideal' as opposed to the 'real' elements. By observing **image 19**, the logic would suggest *associating* the material and tangible bamboo web with the 'real', and the representational and art-based photographs with the 'ideal'. Rather, Van Leeuwen and Jewitt's study (2004) affirms exactly the opposite. Yet, without straying into highly philosophical reflection, this consideration is interpreted by the thesis as an occasion to rethink how

actually 'down to earth' (Van Leeuwen and Jewitt, 2004) are the meanings created by the photographs, and how these artistic representations create concrete patterns of talking about water. To sum up, this leads to discussing the effects of the processes of meaning-making negotiated within the communicative space of Aqua Mater.

5. Discussion

In keeping with the thread of the cubist painting, while the painting act goes on, it is necessary, at times, to take an overall look, make some corrections, add colors, or trace over the lines. In other words, everything must appear properly incorporated. Likewise, this chapter discusses the findings of the analysis to resolve what has been a 'creative action' into a 'critical observation' (see Sullivan, 2006).

In this regard, the thesis will now reroute the previous analytical 'moving' (Latour, 2005) between the *studium* and the *punctum* (see Pearson, 2019), thus, the constant shifting from theory-driven examinations to experience and emotion-based considerations. Indeed, the interplay of emotional and conventional readings, together with an overall attentive multimodal semiotic analysis has resulted in the formation of a complex network of 'intersecting trajectories' (see Massey, 2005). Therefore, it is time to understand the complexity of the communicative space of Aqua Mater.

Accordingly, the discussion will firstly reconstruct the ANT logics that oriented the investigation to identify Aqua Mater's main *actors* and their *associations*. To follow, the second subchapter will *traverse* towards semiotics, to *translate* the findings also in terms of resemiotization. Moreover, the concepts defined in the theory section will be fundamental for these considerations: here is indeed where the iterative logic is concretely blending, in a complementary way, the existing knowledge on the present topics with the data just investigated. This considered, the thesis proceeds now in constructing the 'particular stories' (Law, 2009) of how, starting from Salgado's photographs, the multimodal semiotic analysis traced back the *associations* between sustainability and photojournalism.

5.1 'Making the invisible visible': Aqua Mater's *actor* and *associations*

The opening conference of 2022 Word Water's Day was entitled "Groundwater: make the invisible visible" (Turcat, 2021). This headline elegantly describes the process unfolding in the current and the coming subchapter. Indeed, it will be necessary to go beyond what observed so far and add some nuances to the present art-based research. In this concern, as anticipated, the first step consists of highlighting which *actors* performed these multilayered *associations*.

By gradually 'zooming out' from the photographs and, thereof, reiterating the logic of the analysis, it can be initially noticed how some key *actors* emerged already from the targeted investigations of picture 23 and then 24. In particular, while deconstructing the *presentational*

meanings, the examination of 'salience' identified some *actants* as more eye-catching than others. Hence, these elements can be presented for their being *actors* (see Mattozzi, 2019; Van Leeuwen & Jewitt, 2004).

In terms of 'visual weight' (see Van Leeuwen, 2005), **image 20** shows that the waterfall (for the central placement), the scenic spot (for its sharpness and high tonal contrast), and the light (for its mediation in regulating the overall tonal contrasts and the sharpnesses of some elements over others) were the heaviest elements of photograph 23.

Image 20: Salient elements in Photograph 23

Source: Salgado, 2021, p.50

On the other side, following the same principle, the salient elements of picture 24 were the forest (for its foreground placement, its sharpness, and its size), the column of rain (again for the placing and, newly, for its monotonicity), the clouds (for texture, placement, and high tonal contrast), and, lastly, the *association* between the clouds and the column of rain (from a cultural point of view) (see **image 21**).

Image 21: Salient elements in photograph 24

Source: Salgado, 2021, p.52-53

Now that they have all been properly lodged, what is fascinating is not to enlist the findings, but rather to move one step forward and expand the investigation based on 'salience' with spatial considerations. Significantly, within the overall communicative space of Aqua Mater, it is necessary to dwell on how 'salience' and, therefore, the aforementioned *actors translate* in the overall "articulation of spatial experiences" (see Dourish, 2006). Put simply: what kind of *associations* do they create?

In this respect, while 'moving' around the notions of space and spatialities (Latour, 2005), it has been observed how Hetherington recognized that the 'weight' of the objects under analysis plays a crucial function in the study on the dynamics of space (see Richardson, 2018). More specifically, according to the concept of 'folding space', Hetherington argued that the choices to navigate across a social, ongoing, and 'scrumpled' surface depend on creases around 'heavier' elements (see chapter 3). In light of these considerations, if *translating* these observations towards the field of the visual, hence the analysis of photography, the thesis interprets that the gaze of the viewers is guided around pictures by the same logic: in details, the presence of salient elements causes the viewers' attention to 'gravitate' around some *actors* instead of others. Furthermore, in this optic, the *actor* light merits a special regard as, in its stricter instrumental sense, within the photographic language, it is identified a priori as "generating space" (see Leon, 2021).

Nonetheless, alongside the *actors* illustrated by **images 19** and **20**, the last section of the analysis introduced with two more distinguished *actants*: the physical lightning of the room and the material bamboo canes. Notably, these are spatial *actors* as, on the one side, identified by the investigation of the *orientational meanings* and, on the other, embedding what discussed in the theory section regarding space being under construction. Indeed, what Massey (2005) referred to when intending space as the result of 'negotiation of intersecting trajectories' is made visible by the scrutiny of the 'information value' (see Massey, 2005): In detail, the overall composition (or scenography) of Aqua Mater's central room is continuously negotiated and influenced by the lightning and the bamboo, which are actively and ongoingly creating the expositive spatiality.

By discussing them separately, the lightning is responsible for regulating the light-dark contrasts of the central room and, more attentively, for mirroring the tonal contrasts of the monochromatic pictures in the overall Pavilion. As quoted in the descriptive introduction to the analysis, the notes from the ethnography reported a general "mixed feeling" related to the core room motivated, in fact, by the salience of 'contrasts everywhere' (see Appendix 1). Moreover, the examination of the 'framing' underlined how the lightning connects the photographs with the

ceiling, therefore, the bottom with the top of the room (see **image 19**). This function is further elaborated by note 17 of the micro ethnography: "[…] by standing next to the entrance, it can be noticed that when people enter the room, they do not go straight to the pictures […] they take a few steps inside and then move their gaze all around, along the internal wall, and then up to the ceiling" (Appendix 1).

Image 19: Connections throughout the 'vertical plane'

Sources: Fieldnotes from the micro ethnography; Aqua Mater; Van Leeuwen, 2005

On the other side, the bamboo canes are the *actors* that materially create a connected spatiality. Indeed, from an aesthetical perspective, as argued while presenting **image 19**, they have been interpreted as vectors performing the top-bottom and right-left *associations*. Besides, from a physical point of view, the canes' interaction within the communicative space is understood by *traversing* towards the discussion on bamboo provided by the theory section. Significantly, this material being extensively utilized worldwide and through time makes it so that, when questioning its presence, one does not query 'what' bamboo is but rather, 'why' or 'how' it is deployed. Accordingly, within Aqua Mater, bamboo co-creates the bounded space, architecturally embeds the 'sustainability message', and spatially interacts with the other *actors*.

In light of these considerations, what is fascinating for the present research is to expand this ANT-based reflection towards semiotic and, thus, understand how the identified *actors* and *associations* hosted processes of meaning making and resemiotization.

5.2 'Making the invisible visible': the patterns of talking about water produced by Aqua Mater

So far, the thesis has articulated several semiotic statements and created an overall quite 'crowded' investigation. Therefore, this last subchapter untangles this bundle of *associations* and, thanks to resemiotization, identifies patterns of talking about water.

By proceeding once again by 'zooming out', this second reiteration begins with the analyses of pictures 23 and then 24, and focuses on the products of aesthetic semiotics, namely the ongoing networking of 'narratives, view angles, and light regulation' (see chapter 3). Significantly, within these initial investigations, the process of resemiotization *traversed* across three semiotic systems framed by the examination of the *presentational, organizational*, and *orientational* meanings (Lemke, 1993);

More specifically, while dwelling on what is illustrated in photograph 23, it emerged that the light was a crucial *actor* precisely because of its challenging role as a meaning maker: indeed, its fluid representation 'fused' the numerous significations produced by the different elements of the picture into one comprehensive semiotic statement - an overall dreamy and idyllic representation of Victoria Falls. This resemiotized and homogeneous meaning potential has then *traversed* to another semiotic system, where the scrutiny of the *orientational meanings* provided another *translation*. Notably, in terms of 'depiction', the thesis interpreted that photograph 23 does not simply present but questions the stillness of a halcyon portrayal of water (Lemke, 1993). In detail, within the analysis of the 'horizontal plane', it emerged that the idyllic depiction of the picture was meant to trigger a reaction: making the viewers collectively 'move' towards a more realistic understanding and vision of water (Latour, 2005).

On the other side, the first semiotic level of picture 24 is rooted in the analysis of 'salience' (Van Leeuwen & Jewitt, 2004). In particular, grouped together, the column of rain and the cloud stood for the strong cultural symbol of the atomic mushroom which, in turn, is directly *associated* with the second semiotic system of the *organizational meanings*. Here, following an 'emotional reading', this cultural resemblance was resemiotized in a dramatic and sublime sense (see Hitt, 1999) which, in turn, led the thesis to deduce that photograph 24's meaning was to advise the observers about the power of water (see Leon, 2017).

Nonetheless, this semiotic discussion does not end with this hypothesis but *traverses* toward the last semiotic system, one of the *orientational meanings*. In this respect, picture 24 has been resemiotized to respond to the left-right placement illustrated in **image 12**. Accordingly, in terms of

meaning potential, the thesis argued that, in the matter of water, there is little to assume but all to learn.

In light of these considerations, it is relevant to underline one last detail coming from the third signification system: The 'spatial relationships' of photograph 24 suggest that the picture is not only a way to inform the visitors about the power of this natural resource, but that this is an issue which will be renegotiated through time (see Van Leuwen & Jewitt, 2004).

Image 12: Left-right placements in the central band of photograph 24

Source: Salgado, 2021, p.52-53

Thus far, it is relevant to make some overall observations. Significantly, the processes just described illustrate how art, thus, artistic exhibitions and artistic artefacts are ongoing fluxes of cultural practices. For instance, Salgado's photographs are not only self-governed 'arenas' endowed with salient *actors*, semiotic agency, and aesthetic structures (Carroll, 1998). Rather, they are, in all respect, 'mediated social actions' where meanings are constantly and openly under construction (Norris, 2012). Indeed, as well as for the analyses of pictures 23 and 24, the investigation of them together did not lead to dogmatic claims but rather (and once again) to mediated interpretations.

On this subject, two semiotic levels can be identified: one negotiating the signs-*associations* on the horizontal plane, and one related to the vertical ones. As for the horizontal plane, the scrutiny of 'depiction' revealed that the spatialities around the pictures are structured similarly (Lemke, 1993) (see **image 16**). Moreover, across these comparable compositions, the photographs' "rhymes of forms" (see Van Leeuwen & Jewitt, 2004) *translated* an aesthetic connection into a conceptual one. In other words, semiotically speaking, the thesis interpreted that the view of the two pictures together recalled the water cycle (see **image 18**).

To better understand this spatial process of meaning-making, it is interesting to dwell on Nair's (2011) study of photography: "the image must itself transcend the confines of closed, visual statement - he observed - [...] [so that this] establish[es] a range of context, question, and meanings [...] through which the viewer imaginatively travels" (p.124). Accordingly, on the one hand,

photographs invite the viewer to conduct a critical observation. On the other hand, they are traveling mediums that figuratively transport to different corners of the globe, and of which very same borders are brier beyond the visual (Nair, 2011).

Besides, moving back to the semiotic overview, the analysis of the vertical plane outlined some properties of the materiality of the exhibition. Notably, it has been investigated how the physical pathways of Aqua Mater's signification processes often consisted of the bamboo canes. In other words, the operational vectors of resemiotization often corresponded with the bamboo architectural network. Consequently, Guadua catalyzed the conceptual connections and, overall, *associated* them with the 'sustainability message'. Now, this latter is a passage that cannot go overlooked.

Since the introduction, the thesis combined a concern for sustainability studies with an interest in art and semiotics. For instance, the parallelism with the cubist picture at the beginning of each chapter was initially meant to explain the complexity of understanding sustainability. Yet, although art and semiotics have been exhaustively investigated, the link between this research and sustainability studies is not as clear. Therefore: what does this multimodal semiotic analysis say on the issue of sustainability?

To answer this question, it is necessary to draw back on Wu et al.'s (2018) understanding of durable development. Interestingly, they reasoned in terms of implementation as, for this kind of development, the society needs to find a transformative direction that "to turn it from a general concept to reality" (see Wu et al., 2018). Significantly, if sustainability is intended in this way, the thesis argues that Aqua Mater consists of a great effort to make sustainability issues more tangible or visible. Indeed, at first, World Water's Day moves in this very same transformative direction since its creation (Turcat, 2021). Second, this analysis has demonstrated how a dense network of semiotic, aesthetic, and spatial *associations* can construct a multifaced understanding of water: Within the communicative space of the exhibition, the combination of photography, phonographies, sustainable architecture, and data on groundwater mediates a heterogeneous communicative act in which water has been comprehensively depicted (White, 2014).

Moreover, it is crucial to remember that Salgado's pictures are primarily photojournalism products, thus, in their essence, informative *actors* (Mraz, 2002). Accordingly, being considered artifacts of fine art comes later yet amplifies the informational meaning potential, and opens to deeper social negotiations (Greenfield, 1994).

Nonetheless, although Aqua Mater created a space to raise awareness on, for instance, the

fragility, power, or scarcity of water, achieving sustainable development requires one step further: In an opposite direction of the one taken by this discussion, it is necessary to transform 'critical observations' into 'creative actions' (see Sullivan, 2006). In fact, to conclude with Bachelard's words, "[f]acing deep water, [visitors] […] can choose what to see; the still depths of the current, the shore of infinity; you have the ambiguous right to see and not to see" (Bachelard, 1942, as cited in Salgado 2021, p.18). Therefore, the concrete (re)actions of Aqua Mater's visitors remain an unfinished story.

6. Conclusion

Understanding Aqua Mater's processes of meaning-making has been like painting a cubist picture: The thesis has considered different perspectives, dismantled ANT logics, and weaved an overall multimodal semiotic investigation on water representations. Since the first pages, the 2022 World Water's Day's exhibition Aqua Mater has been portrayed under the lens of post constructivism and post-humanism. Indeed, as reported by the ethnographic fieldnotes, once inside Pavilion Contemplation, visits consisted of walks across "dynamic processes of intra-activity" (see Barad, 2003), in which the *associations* between human and non-human *actors* were continuously resemiotized (Latour, 2005; Iedema, 2003). Interpretivism has thus become the viewpoint from which to observe such dense and changing social reality.

Moreover, as well as visitors moved circularly along the external corridor of the Pavilion, the thesis 'moved' around sustainability by performing various *hermeneutical circles* to tell the 'particular stories' of durable development, space, art, and semiotics (Latour, 2005; Schwandt, 1994; Law, 2009). In this regard, after discussing the roots and the historicity of the contemporary Sustainable Development Goals, it emerged that water, thus, SDG 6 is, in some respects, the precondition for sustainable development. The consequent establishing of World Water's Day – the starting point of the investigation – has been framed by the thesis as a way to cope with the need to "ensure availability and sustainable management of water and sanitation for all" (see UN Assembly, 2015).

In this respect, among the others, Pavilion Contemplation was recognized as the space to foster engagement towards targeted conversations about the *actors* of sustainability. In here, being in a communicative space resulted in the visitors fluidly interacting with, for instance, the materiality of the bamboo or, most interestingly, photographic artifacts (White, 2014). Notably, Salgado's social pictures have been identified as both photojournalistic objects and artistic representations. This meant that, according to their dual identity, the black and white narrative pictures "fuse[d] information and expression, document and symbol" (see Mraz, 2002; Van Leeuwen & Jewitt, 2004) to challenge the observers with 'particular stories' and 'particular relations' (Law, 2009).

Moreover, to provide a complete understanding of the communicative space, the thesis continued by designing and implementing a precise multimodal semiotic analysis. Accordingly, the investigations of *presentational, organizational*, and *orientational* meanings of pictures 23 and 24 revealed that photographs are "open place[s], portal[s] [,] [...] transportation system[s]" (see Douek, 2013) to a semiotically rich network of *associations* (Lemke, 1993, 2009; Latour, 2005).

Furthermore, the analysis proceeded by zooming out of the photos and deconstructing the surrounding space. While investigating the spatialities of the exhibition, variables such as connectedness, left and right placements, or the dynamics of the horizontal or the vertical plane played a crucial role, and guided the process of resemiotization throughout the different semiotic levels (Van Leeuwen & Jewitt, 2004). As a result, the thesis argued that, within Aqua Mater, any signification-statement of any photographs was systematically debated and reprocessed by the surrounding spatiality. In other words, studying water with art-based research and in an art-built environment means engaging in social and ongoing negotiations.

In light of these considerations, it is fascinating to conclude this study with a reflection in terms of resemiotization (Iedema, 2003). As discussed, an event like Aqua Mater lays the groundwork for opening up social debates on sustainability concerns. Notably, in terms of ANT, the fact that sustainable development (in the present case, groundwater) was both the guiding principle behind the exhibition and the focus for post-visit thinking made water a compelling *actor*. On a more precise note, water became a salient *actor*, thus a (potentially) 'heavy' topic to interact with in the international arena. Accordingly, if this resemiotization is read in light of the study of the "scrumpled geography" (see Richardson, 2018), the more visible and heavier this topic is, the more attention (for instance, policies, debates, etc.) will gravitate to it. In other words, water would become quite burdensome or, following Azoulay (2008, as cited in Nair, 2011), a 'restored' global citizen.

Taking into account these possible resemiotization processes, to conclude, the thesis argues that increasing awareness is a fundamental step in achieving durable development. Therefore, if art-based research (in terms of both investigation and data) is consistent with this direction of change, then, more art-based research could enrich social *associations* of this kind and ultimately collaborate in the transition towards sustainability.

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8. Appendix 1: The fieldnotes

These notes have been organized to create a comprehensive text integrating all the separate fieldnotes (written comments and pictures) collected during the various visits, thus during the micro ethnography of Aqua Mater. This Appendix does not include the pictures already used in the main body of the thesis. Moreover, the unspecified source of the images is, every time, Aqua Mater.

**Image A: Reconstruction of the outside of the Pavilion**

1. You enter and you start to walk along the external corridor accompanied by the sound and a particular light resulting from the outside light filtered through the bamboo and the 'studied/designed' illumination structure of the inside

2. The first thing that catches your attention is the *sound* of water and the attentiveness with which they have designed the first spatial element of the exhibition, namely the entry corridor.

3. There are not too many people at the entrance and it's the afternoon of a weekly day (all the visits were made in the afternoon of a weekly day, for example, the second one started at 2 pm on a Wednesday)

4. While walking on the first meters, your gaze moves from the floor to the internal walls, then it follows the bamboo structure and its diagonal canes (vectors) up to the ceiling and the speakers (which are hidden under some bamboo canes of the roof structure)

Image B: Reconstruction of the entry corridor

5. There's not a lot of light entering from the outside. Rather, the main sources of light are the little warm lamps on the floor. Notably, as the structure is entirely made of bamboo, it can be noticed that the outer wall was originally a simple bamboo colonnade whose openings have been 'closed' by black cloths to create this particular light for Aqua Mater. (see Image B)

6. Dwelling on the text-elements of the exhibition, thus the written information provided to the public, the visitors are presented at first with a poster about the pavilion and then with one about Water on Earth (in the second poster there was a general description, followed by some quantitative data, then a link for UNESCO webpage on water security). All the posters are double as the first of them is in French and the second in English. (Poster 2; 3)

7. While walking you notice that posters do not completely cover the wall. Indeed, they alternate with some areas where you can observe the raw bamboo. In this way, you can scrutinize the 'skeleton of the Pavillon', which is composed of a matrix of horizontal and vertical canes (lines) of bamboo

Image C: Reconstruction of the bamboo wall with posters
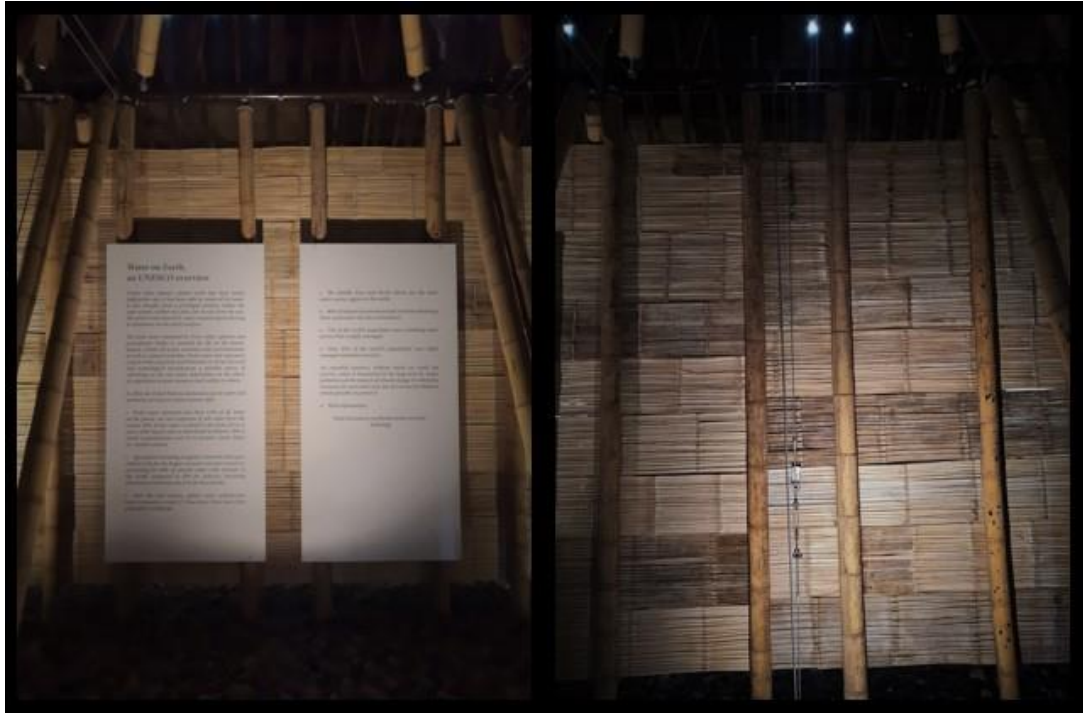
8. You keep walking along the corridor but there's still no sign of Salgado's pictures. Yet, my trajectory is laterally following the shape of the wall and, horizontally, what appears as a circular river of wooden sheets constituting the floor (to be more precise, the shape of the Pavilion is oval). This feeling of a river is given by the presence of little rocks on both sides of the sheets, the music, and the bamboo contouring.

9. The next poster is a poem 'Water and Dreams' (poster 4)

10. Other people are entering now and stopping in front of the initial poster or taking pictures of the external corridor and the bamboo ceiling

11. Through little holes in the outer wall, you can spot some of the outsides but, overall, the exhibit feels isolated, especially because it seems to be somewhere else than Paris once you enter the door

12. Reaching the pick of the oval, people stop to take pictures of the pavilion. They don't seem to be reading the posters hung at that point. These banners would contain technical information

about the exhibition's patrons. On the contrary, a lot of visitors stop in from of the poster about the Right livelihood award acceptance (poster 5; 6; 7)

Image D: The pick of the oval

13. The floor makes some noise when you're walking on it but not too strong and not at every step. Anyway, it mixes 'naturally' with the sound in the background

14. The next poster is a Poem on Amazon by Neruda (poster 8)

15. Finally, on the opposite part of the entrance, in the external corridor appears the poster with the title of the exhibition (there was a copy of this poster already at the very entrance of the Pavilion) followed by another one written by the music composer and explaining the phonographies, one with a reflection on water written by Salgado and his wife, and, lastly, the entrance for the inner room (poster 9; 10; 11)

16. Overall, the lightning is solemn and monumental but not oppressive

Image E: The entrance of the central room

17. Once entering the inner room, you have a mixed feeling as there are a lot of contrasts everywhere: Contrast with the light and the shadow of the room, with the black and white of the (quite big) pictures, with the previous narrowness of the corridor and the open space of the central room, with the smoothness of the wooden sheets on the floor and the intricate ceiling framing, and with the still images and their brightness that makes the photographs a source of light. The feeling is mixed because these contrasts are very dense and 'hit your eyes'.

In this regard, it is fascinating that, by standing next to the entrance, it can be noticed that when people enter the room, they do not go straight to the pictures. Rather, they take a few steps inside and then move their gaze all around, along the internal wall, and then up to the ceiling.

18. (A specificity of visit number 2: Curiously during this visit, in the beginning there are only adult women visiting in the Pavillon)

19. Moving clockwise, the first picture represents a big waterfall

20. While observing the first photographs, you can hear in the phonographies the sound of a helicopter or a plane which fits harmoniously with the pictures as some of them have an aerial perspective. Therefore, the sound seems, on the one side, to be coming from the picture, and, on the other, to be 'pulling you into' the picture and into that landscape.

21. Overall, visitors are observing very quietly and comment whispering

22. (A specificity of visit number 2: After half an hour of visit there are still no men)

23. Now, in the phonographies you can hear some indistinct voices of men and children. Overall, the different pieces of the phonographies are not picture-specific. Rather, this music is spread homogeneously in the entire pavilion.

24. After the 5th picture there are some potted bamboo plants

Image F: Detail of the bamboo plants

25. Except for four photos, all the others are horizontal

26. Only after having observed some pictures, you start to make some considerations on the exhibition as a whole: If at the beginning the focus goes unidirectionally from one picture to the following one, after a while, it moves from one picture to the next and then back. Said otherwise, the photographs enter in relation with each other. For instance, in front of picture 4 (proceeding clockwise) something seems different because it is the first time that there are elements of the photograph watching directly at the camera (thus, at the visitors). Indeed, in the first two pictures, there were no human nor animals. In the 3rd (proceeding clockwise), there was an animal and a man but turned on his back. Moreover, the first picture with an animal in the foreground is photograph number 12 (proceeding clockwise). Further, although artificial objects (e.g., pots, boats, etc.) appear in several pictures, the first one entirely dedicated to them is photograph number 13 (proceeding clockwise), featuring a wrecked boat.

27. (A specificity of visit number 2: 40 minutes into the Pavillon and now the visitors are a more diverse group of people with kids and men as well)

28. Having reached the middle of the Pavilion, it occurs to me that, because of how the writings are located and because of how I have decided to move in the room, I am watching the pictures at first and then reading their descriptions. The majority of the other visitors seem to be doing the same.

29. After a while, the focus of the visit moves from investigating the pictures singularly to investigating in what order they are placed and by what criteria. Some 'relational' considerations on the matter of representation have been already made, but now they take one step further. Said otherwise, some interest in the exhibition's composition starts to emerge: Notably, on the one hand, some photos are placed one after the other because of what they represent (for instance, the picture of the woman taking water is followed by the picture of the jaguar taking water). On the other, other series of photographs seems to be governed by the search for contrasts. For example, picture 15 (proceeding clockwise) features some old fishermen, whereas picture 16 (proceeding clockwise) represents a group of young kids. In the same optic, there are photographs with animals lined up in neat rows followed by others with men spread all over the

frame, or subjects representing the abundance of water close to others with the scarcity of water.

30. In the sound, now, it seems to hear somebody/something breathing. However, it is not possible to identify the source or breathing. To this sound is accompanied another of something/somebody walking or, in general, moving in the water.

31. While moving from picture 23 to picture 24 is seems that also water is moving between the two pictures: the fact that in the first one there is a powerful and well-known waterfall seemed to be reflected in the following picture by a powerful 'sky-waterfall' (yet, despite their representations, picture 24 is more eye-catching than the 23rd, at a first glance. In a way, it is because of/only after having focused on picture 24 that now picture 23 appears noticeable). Moreover, these two pictures together recall in a way the water cycle as the water falling from the Falls (picture 23) could have been evaporated to create the clouds of picture 24 that, then, resulted in the column of rain. This latter would then aliment the rivers (so other falls) and the circle would continue.

32. It is interesting to notice that, although no sign says so, nobody is stepping on the rocks to get closer to the picture: sometimes, somebody gets to the edge but does not do the step forward. In a way, the diagonal bamboo canes are reinforcing this distance or, anyway, implicitly setting this (optimal?) distance between visitors and the pictures.

Image G: Physical distance mutually agreed within the visitors

33. Having observed almost all of the photographs, the attention moves again to the structure. Significantly, only at this point (thus, after having turned around and along the bamboo structure), there appears a similarity with a boat. More precisely, the inner room of the pavilion recalls a ship's keel.

Image H: Focus on the architectural details that recall a boat

34. Getting out of the central room (by the same entry door), people now take more time to focus on the reading of the final posters about the 21st-century water tribune (poster 12), the World Water's Day, and the theme of making the invisible visible (poster 13).

35. Going out of the Pavilion, after being immersed in an environment full of contrasts (i.e., the black and white within the pictures, the lights, etc.) this feeling continues because of the contrast between the skyscrapers of the Defense's district and the temporary exhibition hosted in the space of the Pavilion.