

Final considerations

...and making sense

From the very material aspect of light-matter interaction to the participation of photosensitive matter in more complex technical ensembles, this thesis addressed key elements in play for the conceptualization and construction of media artworks. This has been explained through their connections with historical media devices and a series of scientific knowledge they embed. In addition to the encyclopaedic knowledge that every photosensitive item carries, the thesis carefully looked at the material interaction to clarify how media artworks are the fruit of a close interaction between art and science.

The analysis of photosensitivity provided a representative research object to address the dichotomies material-immaterial, organic-machinic and theory-practice in relation to media art. The mobilization of these dichotomous relationships hardly finds ways to completely deconstruct them, however, the discussion led to a partial comprehension of their foundations and especially their mutual influence and interaction. Each chapter addressed each dichotomy differently through the assistance of a mixed theoretical framework. Nevertheless, the articulations of ideas derived from the consolidated fields of cultural techniques, media-archaeology, second-order cybernetics and new materialism. This cross-disciplinary analysis provided an appropriate historical approach to address contemporary issues for media art. From each chapter's analysis emerged different aspects of media history and/or media art aesthetics that are commonly disregarded as criteria for creating media artworks.

The first chapter, *Photosensitivity: materialities and operations*, details the atomic and molecular activity behind photosensitivity and related techniques, thereby reconstructing a historic path of physical and conceptual transformations of optical media devices. This analysis leads to the comprehension of a set of recurrent trends found in media development: immediacy, convergence, verisimilitude, fragmentation, black-boxing and operationality.

The brief historic overview of pioneering exhibitions and analysis of various media artworks demonstrated that both materiality and immateriality have consistently been essential elements in the history of art; and what differs in the case

of media art is the care devoted to each of these elements in the discourses of art critics, theoreticians and artists.

The requisite relational nature of sensitive elements leads also to an overview and categorization of some of the operations related to photosensitivity that are frequently used or addressed in media artworks: measuring, automating, controlling, self-regulating and self-organizing. These operations ground the imbricate material-immaterial condition of media artworks and clarify the guidelines for understanding their informational aesthetics, refocusing attention on their communicational values and to the implications of this characteristic.

The research indicates the material-immaterial dynamics of media art's informational aesthetic requires more attention. Sensitive apparatuses are one of the core elements for bridging the poles of this dichotomy and enabling — through communication strategies — relational material perspectives that can accommodate unknown otherness, irrespective of the material actualization it presents. This perspective endorses the media artist's responsibility in regard to the ethical and environmental implications of media art's post-humanist practice – issues that remain open questions for the reader and invite further research.

The second chapter, "Photosensitivity shaping hybrid systems", inquires into photosensitive elements used in media artworks, which assist in deconstructing the organic-machinic dichotomy led to the analysis of light-sensitivity as vision. This is achieved through the comparing and contrasting of the eye and camera's materialities and operations. The comparative examination of these elements demonstrates how organic and machinic structures have been intimately coupled within the media art context, exemplified through the path towards the implementation of hybrid visions.

Despite the preference given for vision as a guideline, the focus of the examination on photosensitivity and the contemporary technological conditions for working with a common denominator for material interaction – electrical signal – ended overcoming the visual predominance associated to photosensitive matter and optical devices. As operational entities and released to be appropriated as data generators, photosensitive optical devices may be attached to other technical ensembles and produce materialities other than visual images.

The examination also elucidates how the emergence of optical media is tightly intertwined with investigations on human sensorial and cognitive apparatuses and processes. Although a worthy inquiry, investigating this issue further would reach beyond the scope of media artwork production.

We have learned that, rather than assuming a position between conflicting vitalist or mechanistic viewpoints, it is more interesting and fruitful to observe and engage in the oscillating movement between purification and translation – processes that can be understood in varying degree in media art production. From our understanding, purifying refers to the deepening of specializations, discoveries or

findings of specificities. Translating concerns the simultaneous movement toward expansion; it is the recognition of external references to be connected to, favouring hybridizations and thus contributing to the increase in the variability of modes of existence – organic and machinic. This approach also contributes to the blurring of borders between nature and culture. We are aware that the attempt to deconstruct this broader dichotomy is a recurring topic in the history of science and knowledge. From a media art perspective, especially when considering research on photosensitivity, it is difficult to grasp the reasons why it still persists.

The first and second chapters prepare the conceptual and technical basis for the higher complexity achieved in the third chapter, *Light-to-sound translations*. By stressing the manipulation of photosensitive materials through the zero-dimensionality of electricity – either through electrolytes or electrons flux –, and the possibility of translating light into sound, the chapter takes heed of the apparent opposing conceptual and technical approaches of media art practitioners and theoreticians.

As the research indicates, the materiality of media artworks turns simple matter into symbolic entities, whose meanings are open and malleable according to their contexts and actualizations. The notion of materialities' translation can guide artists to reflect upon the process of meaning attribution through organization and recombination of materials in the specific contexts on which they are working. The same is valid for critics and the audience, who can also use this notion as analytical lenses to discuss media artworks. Translations of materialities implies thinking on translatability and the manipulation of elements on an abstract level of meta-language, a process full of arbitrariness that must be carried out by means of enjoying the freedom it represents, while also considering the involved responsibility.

Media artists as transcreators, i.e., those able to work with translation of materialities, are responsible for bridging a series of dichotomous structures present in Western societies and their way of thinking. Conducting the analysis we have been able to discuss only three of them.

The theory-practice dichotomy was especially apparent in the conceptualization and execution of *Self-portrait of an absence* – a performance whose technical basis is, in fact, a light-to-sound translation, and was conducted through the confrontation of operations of the author's eyes and a camera. The practice-led research has been an important acknowledgement of the various handcraft layers of media artworks.

In close dialogue with Flusser's concepts of *Mediumsprünge*, as well as Guldin's perspective on the connection between Flusser's media and translation theories, *Self-portrait of an absence* evinces the powerful and multifaceted role of absence in media creativity. Initially taking full advantage of the limitation of my blind eye in its image-forming capacities, the absence was a simple monocularity, an absence of body symmetry. Suddenly, the absence became the engine for the creative process of meaning attribution between light input and sound output. This finding in particular has only confirmed and reinforced our understanding of how light-

to-sound translations were achieved in historical media devices and how they are done in contemporary media artworks.

Absence also closely relates to other facets of media development, specifically the ideals of verisimilitude and normativity – the reasons behind the creation of cyborgs or the prosthetic quality of media. This relates to the human learning paradigm of fragmenting in order to understand and act upon the world. Identified in studies on both biological senses and man-made devices, the fragmentation phenomena and the respective found or generated absences inquire into the heart of human existence. For example, if radiation in nature is a continuum and we act in framing and channelling them, we ourselves are the gap that does not allow us to completely integrate with our surroundings. Further research developing these associations are strongly encouraged and desired, however, in this particular project which were avoided due to the extensive additional and diverse theoretical framework required.

Enthusiasts of a transcendental empiricism, media artists may animate and edit matter towards the creation of possible imaginary and non-trivial hybrid machines. Programming exchanges of electric and electrochemical signals through sensitive materials also play with the feedback principle – the core of hybrid systems. The hybrid aspect and the acoustic biofeedback experienced with *Self-portrait of an absence* led my own body to a self-regulating and self-organizing situation. I became aware and learned how to control the muscles of my blind eye. We have not theorized about the second-order observer, rather we have enacted it. In this sense, this experience suggests that the object-subject dichotomy is another gap artists and their artworks are able to bridge. One of the challenges while creating aesthetic experiences resides in finding or inventing significant relationships between objects and subjects, between objectivities and subjectivities.

The idea of framing media art through the lenses of translation of materialities is only one of the possible ways to find a systematization of elements, which in turn partakes in the creative process of media artworks. As communication systems, media artworks are like invented micro-universes framed within continuous stimulus and information exchange between things and beings.

The notion of epistemological materialities discussed at the end of the last chapter draws a conclusion that media devices and artworks – as cultural objects – witness the human activity in knowledge construction. Back to the media artist's bridging role: epistemological materialities suggest the bridge between sensing and making sense – bridges continuously constructed in each framed context, some consistent and stable, while others fragile and ephemeral. At the same time, the notion of epistemological materialities re-opens the discussion for considering similar approach in relation to other materialities beyond photosensitive elements and beyond art.

In addition, the sequence of chapters led to the realization that, given the increasing possibilities of material manipulations, another challenge for media artists today is discovering what is relevant to translate, how and why. To address the translation process behind media artworks – considering its historical, technical and aesthetical aspects – is a constructive instrument to unveil elements that, if consciously articulated, empower both media art practitioners and theoreticians.

For further research, there are still two mains suggestions: one concerns the development of biosensors and hybrid synthetic materials to enhance photosensitivity, so as their aesthetical appropriations. Still open questions to address: Why is it still not possible to make a CCD out of organic matter and, if possible, how would such technological artifacts influence media art aesthetics? A second promising investigation vector would be to address the networked possibilities of photosensitivity and the emergence of artificial quorum sensing. Dealing with networked photosensitivity inevitably touches even more complex systems that involve non-human agency, requiring additional theoretical frameworks, such as Bruno Latour's actor-network theory, other approaches of the science of complexity, so as dialogues with another branch of media art aesthetics specialized in initiatives based on non-centralized and collective regulation and communication, such as Net Art and telematic performances. Naturally, such investigations profit more if inserted in practice-based research contexts.

Conclusively, we can summarize that while working with biologic matter, electronic and digital apparatuses in the symbolic level, media artists continuously bridge scientific and artistic knowledge, abstraction and concreteness, nature and culture, tradition and future, sensations (stimulus uptake) and senses (meaning attribution). Looking at media artworks through the notion of translation of materialities is a didactic process for understanding that, within the contemporary technological and cultural environment, senses are not predefined; rather they become in the context they emerge and are constantly being redefined through the individuation and formation of complex technical ensembles.

For further studies involving the agency of media artists in other possible scenarios, we suggest to include and test the consistency of the notions of translation of materialities and the media artist's role as translator (or bridge builder) in the various possible scenarios.

Regarding the ethical and environmental concerns, we hope that instead of bridging separate systems randomly, media artists investigate which are the absences and gaps worth to address, so as which systems are relevant to connect in order to appraise the otherness and to increase the variability of modes of existences.

