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## Posthuman Alternatives in the Ontological Understanding of Photography

### Introduction

In this article, I examine photographic objects from a material perspective.<sup>1</sup> My central argument is that focusing on the material dimension of photography enables a posthuman ontology of the medium, challenging dominant indexical and socio-constructivist frameworks. First, I differentiate between photographic materiality and photographic materialism, clarifying my use of photographic materiality by exploring various conceptualizations of materialism within the context of photography. I then critically assess indexical approaches to photography and propose an alternative understanding that moves beyond essentialist definitions of the medium. In the following sections, I address the limitations of constructivist and postmodern approaches, arguing that photography is more than a cultural artifact shaped solely by human power relations. Finally, I introduce the notion of the *between* as a framework for conceptualizing photographic ontology from a material and posthuman perspective. This article seeks to explore how contemporary posthumanist alternatives can critically revise photographic theories, reshaping how we think about and engage with photographic objects.

### Photographic materiality and photographic materialism

Photographic materiality and photographic materialism do not seem to be equivalent syntagms. On the contrary, the cadence of each of these terms is inscribed in differentiated traditions, in conceptual and practical models that are rooted either in a socio-historical imaginary<sup>2</sup> or in an ontological framework<sup>3</sup>. Photographic materiality can be understood as the encounter of various organic and inorganic materials that make up a photographic thickness. If we look at a photographic object, this can mean for example vegetable fibers from cotton paper, barium sulfate made from a mineral called baryte and gelatin from animal

bones, and a light sensitive component like silver. This can be seen most clearly in a micrograph of a stratigraphic sample of a photograph made in the silver gelatin process in which the different layers that make up a photograph become visible under microscopic magnification (Figure 1). This material composition of photographic artifacts is both historical and social. It depends on technical processes, concrete forms of chemical production and photographic materials that have varied throughout the history of the medium.

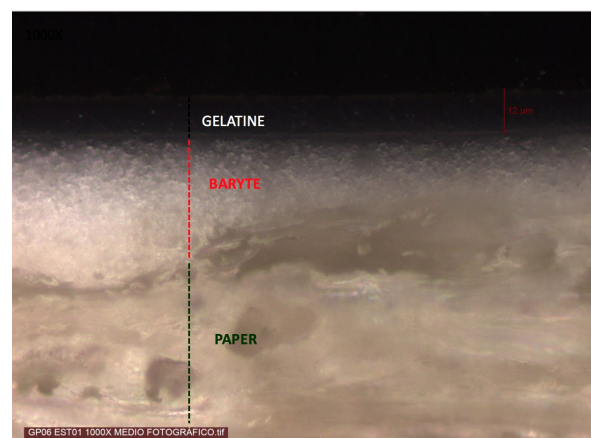


Fig. 1: Milagros Córdova, *Micrograph of a stratigraphic section of a silver gelatin photograph showing the different layers of paper, baryte and gelatin with silver*, digital image, 2023.

Photographic materialism is, on the contrary, a way of conceptualizing photography within the broad spectrum of materialisms (mechanical, historical, dialectical, etc.). Beyond these differences – between a more descriptive and a more theoretical way of understanding photography–, it is possible to link photographic materiality with photographic materialism, if we take into consideration the material turn<sup>4</sup> that has influenced the study of the arts in recent decades. In other words, if we take the material turn as a starting point,

the conjugation between photographic materiality and photographic materialism may be possible and productive for a theoretical and descriptive consideration of photography. The “material turn”<sup>5</sup> or “theory of the thing”<sup>6</sup>, which has diverse disciplinary genealogies, both address the ontological dignity of material things and the agency of objects, as Bruno Latour<sup>7</sup> and Jane Bennett have thought of it, paying attention to the material dimension of photography. Between the nineties and the beginning of the twenty-first century the material turn has been acquiring an important role for art history, opening questions about the materiality of art objects and images. As Jennifer L. Roberts has noted, the expansion of studies dedicated to material culture and the agency of matter has been characterized by an international and interdisciplinary network that involves the humanities but also opens up to the so-called natural sciences. My intention in this article is to open a dialogue between this constellation of the material turn and the theoretical interrogation of photography. Following these approaches, it will be possible to point out how an attention to the material agencies of photography is not only a way to describe chemically and physically these artifacts –something that has already been done extensively in photographic conservation– but also a way to consider them from an ontological perspective. This differs in part from the “classical” theoretical approaches to the medium such as those of Roland Barthes, Rosalind Krauss, Philippe Dubois, among other authors who have characterized the photographic ontology in terms not of the material agencies –and their generative capacity– but of the semiotic processes of production of these technical images. In the face of these perspectives, my interest lies in combining materiality with semiotics but, in this case, highlighting the theoretical implications of photographic materials.

This article will propose a theory of the /between/ to think a relational ontology of photography. But while this will be explored later, I first propose to venture an interpretive protocol of photographs from a conceptual theoretical ground that moves away from the indexical and sociocultural models from which photographic artifacts have been understood. Instead, the aim is to consider photography from a posthuman relational-

ity, attending to the more-than-human agencies that shape the material thresholds in each photographic object. In Anna L. Tsing’s terms, I will “appreciate the dynamism of the other-than-human world without imagining facts that speak for themselves”<sup>8</sup>.

Photographic materialism is therefore a tool of analysis as well as a way of understanding the nature of the photographic medium, that is, its ontology. This type of materialism understands photographs as natural-cultural<sup>9</sup> artifacts in which multiple semiotic-material agencies converge. It is a matter of physical, chemical, technical and discursive orders intertwined in a relational plexus in perpetual transformation and movement. The description of photographic objects is a fundamental analytical method. Describing the particularities of photographic materiality includes emphasizing the constitutive physicality that gives rise to each photographic body. And it is a body insofar as the photographs are made up of assembled parts that constitute, following Jean-Luc Nancy, “a body of its own [...] that shows [and] offers to the touch”<sup>10</sup> that same assembly of parts: Traditions of historical alliances between organisms, substances, compounds, technical orders, aesthetic-discursive programs and, a whole series of collaborative actions that put in check the identifying logics of the photographic image. Conceptualizing photography in this way would allow us to understand its objectual and three-dimensional nature, transforming the comprehension of photographs as two-dimensional surfaces (Figure 2).



Fig. 2: Graphics atlas, *Fiber-based paper supports look and feel like paper on the back. Prints with a heavy weight paper may tend to curl slightly* (Image of a photographic object) Digital image, undated.

Photographic materiality is therefore the very becoming of photography, the production of itself by following what Gilles Deleuze and Félix Guattari proposed as the multiplicity of “heterogeneous terms and co-

functioning by contagion"<sup>11</sup>. Although photography has been conceived as too technical and instrumental—serving as a means of recording, documenting, measuring, and representing—the organic and inorganic composition of its materials reveals an organicity that has been largely unknown from historical and theoretical approaches to the medium. Photographic chemistry highlights how photography co-functions by contagion. This can be seen, although not only, in the reactions between the substances that make up the surface of these objects. An example is the contagion, the mixture, between photosensitive silver grains and the absorption of photons by binders, in the case of the silver gelatin process (Figure 3).

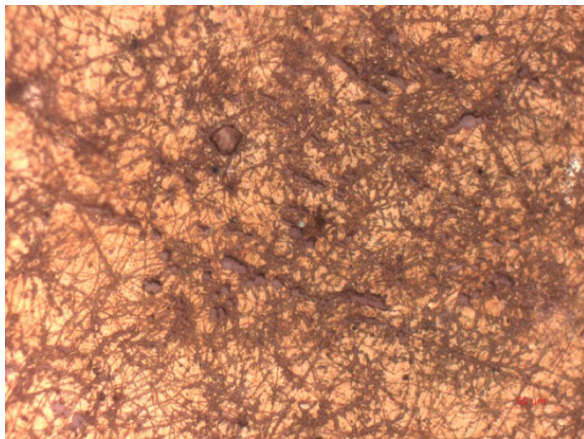


Fig. 3: Milagros Córdova, *Micrograph of the surface of a silver gelatin amplified to 200 microns*. Digital image, 2023.

The organicity of photography is based on what Nichole Witten has termed "the chemical reactions [of photography] involving principles of organic chemistry, of acids and bases"<sup>12</sup>. In this understanding, the photographic object does not imply an imitation, a resemblance or an identification, but rather constitutes a "diffraction"<sup>13</sup>. Unlike reflection and refraction which are conventionally used as metaphors for thinking about aesthetic objects and which aim to "produce the same thing displaced", diffraction emphasizes that photography is not a mere record of something previously existing. In Donna Haraway's terms it can be understood as "a mapping of interference, not replication, reverberation or reproduction"<sup>14</sup>. In this

diffraction, all recognition and identification is undone in the permanent transformation of the material contact. The material event, which takes place on the surface, is not directly translated into its visible appearance but is deformed into what is perceived by the human eye. The contamination of what occurs on the layered depth of the photographic surface opens a perspective of approaching photographs from a material standpoint. This material perspective allows us to glimpse the dynamics between diverse matters that take place on a scale of perception that exceeds human capacities. Barthes and Dubois perceive a blind spot of meaningless inscription in the heart of the index. For these authors, this sort of material meaningless is visually represented in the grain as the smallest particle of the photographic surface. Instead, a material gaze focuses on the assembly of diverse matters that come together in the so-called "photographic surface", filling it with a material meaning.

An example of this can be made partly visible through a micrograph, a microscopic photograph of a color photograph surface in which spots, colors and zones of luminosity can be glimpsed, which attempt to translate to a certain scale of human visibility the action of gelatin, barite and the various dyes that make up the color photograph (Figure 4).

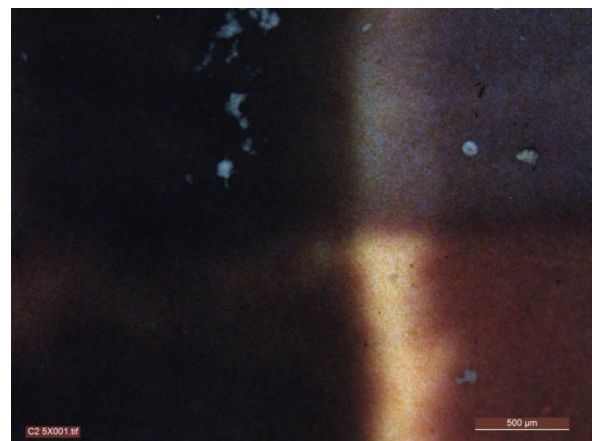


Fig. 4: Milagros Córdova, *Micrograph of the surface of a chromogenic photograph amplified to 50 microns*, digital image, 2023.

From which materialism can photographic materiality be considered? The materialism from which it is pos-

sible to consider the constitutive relationality of photographic artifacts is a “vital materialism”<sup>15</sup>, and not a mechanistic, skeptical, historical or dialectical one. This vitalism does not tend to “idealize and make matter ethereal”, characterizing it with a series of “pseudo-metaphysical”<sup>16</sup> notes, but rather is the very condition of existence of photographic artifacts in material terms. Vitality highlights the constant motion and action of photographic materials, their modification, alteration, transformation and deterioration. It is a “material immanence”<sup>17</sup> that takes place on the surface of the photographic objects. Movements unfolded through physical contacts reveal a material co-constitution in which the productive capacity of substances, media and ideas is brought into play. It is in the interaction of the compounds territorialized in each photograph that a properly material photographic imaginary is knotted. Crossed by the forces and alterations of its natural and technical components, the photographic artifacts emerge under a background of interactions that occur on paper, plastic sheets, multiple layers of composites and other sensitive supports that make the photographic depth. This depth becomes visible when we analyze a stratigraphic section of a photograph. Often understood as pure two-dimensionality<sup>18</sup>, the photograph is in reality a body composed of multiple parts. Layers superimposed one after the other of organic and inorganic elements (Figure 5).

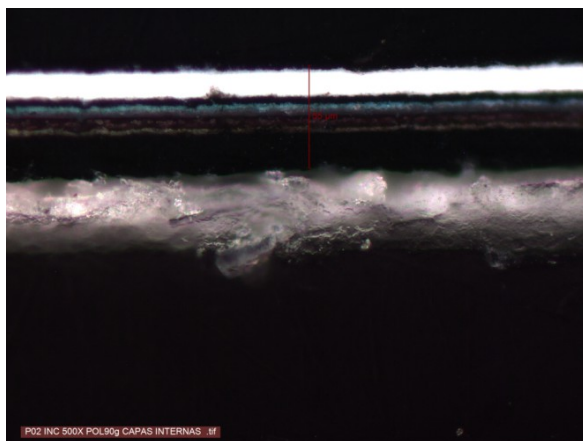


Fig. 5: Milagros Córdova, *Stratigraphic section micrograph of a Polaroid showing the thickness of the different layers*, digital image, 2023.

Photographic materialism is bound to a double movement: The movement of the descriptive-speculative work itself and the movement embodied by the photographic composites themselves transfigured in the same objectuality. Photographic materialism makes evident a naturocultural junction in which different logics of human and non-human work are mixed. It responds to what Donna Haraway understood as a “semiotic-corporal commerce”<sup>19</sup> in which diverse affections and sensibilities are deployed that are not reduced to photographic sensibility alone.

A large part of photographic theory has understood the material condition of photography on the basis of the indexical trace. As Jean-Marie Schaeffer stated, in line with the work of Rosalind Krauss and Philippe Dubois, the *arché*<sup>20</sup> of photography, its foundation (material and conceptual) is subordinated to the photonic impression on a sensitive surface. But beyond light, beyond the ‘physical causality’ that makes the electromagnetic impression, the photographic body is a generative and collaborative configuration in which specific creative forces of diverse physico-chemical agencies intertwine. Each photographic object is not only “the result of a purely material interaction between two physical bodies, effected by means of a photonic flow”<sup>21</sup> but is also the result of an indeterminate multiplicity of interactions that escapes, most of the time, to what is visible and perceptible to the human being.

While human beings, artists and diverse agents play a central role in the process of production, viewing and deterioration of photographic artifacts, this material approach attempts to give relevance to those forms of more-than-human agency in the materiality of photography historically silenced in the theorization of the medium.

The posthuman aspect of this approach lies in shifting the focus of interest from human agency alone, as far as the production of photographs is concerned, to understanding these objects as the sediment of historically constituted human and non-human, organic and inorganic activities.

### An alternative to the essentialism of the index

As opposed to the first principle<sup>22</sup> that characterizes the index as a signifying trace, as a trace legible by a consciousness, the photographic materiality places us in the blurring of all foundational imprints. The foundation, the principle of photographic production is then not in its condition of light trace. From the material point of view that I propose here there is no single action that defines what a photograph is. There are multiple agencies, contacts between materials –the fibers or plastics of the printing papers, the barium sulfate, the silver, the dyes depending on the process, etc. There is no precise or exact place or action that determines once and for all the nature of photography; rather, we are witnessing what I term an in */between/-*material place. It is a permanent contamination and dynamic of diverse materials that, in ontological terms, erase a unique identity of photography.

The theories of the index mark a turning point in the conceptual considerations on photographic objects. A long tradition that goes from the works of André Bazin to Roland Barthes, Rosalind Krauss and Philippe Dubois understands indexical logic under a foundationalist breath that places photography in a semiotic-signifying realm. Barthes affirms “what I intend in a photograph is neither Art nor Communication, it is Reference, which is the founding order of Photography”<sup>23</sup>. For his part, Bazin points out that “the automatic genesis has radically overturned the psychology of the image. The objectivity of photography gives it a power of credibility [...]”<sup>24</sup> highlighting that commonplace which places the photographic procedure in the realm of objective certification. Philippe Dubois states that “the starting point is [...] the technical nature of the photographic process, the elementary principle of the luminous trace governed by the laws of physics and chemistry”<sup>25</sup>. While Rosalind Krauss wrote in her *Notes on the Index* that the “power [of photography] responds to its identity as an index, and its significance resides in the modalities of identification that are associated with the Imaginary”<sup>26</sup>. In all these cases, as well as in most of the theoretical considerations of photographic artifacts, an essentialist logic dominates, which locates the “arché of photography” in its

indexical quality<sup>27</sup>. Would it be possible to move away from the dominance of the index as one of the most prominent ways to approach the understanding of and the link with photographic objects? Could we perhaps imagine other modalities in which photography expresses itself beyond the signic ideality that dominates human perception, leading to consistent classification of all objects by means of meanings and signifiers<sup>28</sup>?

Photographic materiality, viewed through the lens of photographic materialism, does not escape the order of signification, but it becomes entangled with the material agencies that dispute, conflict, complicate and disarticulate the primacy of the signifying trace. It is a complex geometry in which extensions, measures and relations between parts enter a generative conflict that is permanently sedimented and muddled. It should not be forgotten, as Haraway points out, that “all that is non-human is not de-generated, alien to kinship and orders of signification, nor excluded from the commerce of signs and wonders”<sup>29</sup>. All those naturotechnical agencies that take place in every photographic object affect any attempt at photographic essentialization. Photographic phenomenology is therefore altered under material logic. In this sense, there is no “noema”<sup>30</sup> that marks the photographic identity but an “ontological priority of difference”<sup>31</sup> that circumscribes the photographic body. In other words, there is no single understanding of photography but, rather, the relationship between materials is what characterizes photographic objects according to my argument. This consideration of photographic objects would allow us to move from an interpretation of the medium based primarily on its representational character –on what is visible–, or its indexical trace, to consider the depth that underlies the visible image of the photograph. To consider, for example, the importance of certain materials such as gelatin and its history in the manufacture of these objects, as well as certain metals and minerals such as silver and their implications in the interpretation of these artifacts. Beyond the index as an imaginary plane that materially constitutes photography, photographic materiality makes explicit an “ontological imagination”<sup>32</sup> that exceeds all phenomenology and unfolds in the conjunc-

tion of technical, material and discursive procedures articulated in each of these technical objects.

Thinking photography outside the essentialism of the index leads us to explore and test other non-determining and non-original points of the photographic artifactualism. For example, considering it as a device for the reconfiguration of articulated worlds<sup>33</sup> according to a natural and technical *continuum* made explicit in the descriptions of the photographic components. This approach highlights what François Soulages called “the fabrication of a material”<sup>34</sup> that is the photograph and in which various agencies participate. It is a “polyphonic history [...] that includes the vital materiality of life, experiences of non-human entities and our bodily intra-actions with all forms of material agency as effective actors”<sup>35</sup>. The index as a photographic foundation resigns the constitutive multiplicity and potency of agentic diversity operating at once in each photographic object. A possible alternative to the luminous trace is what I call – inspired by the work of Jane Bennett– an energetic aesthetics of matter<sup>36</sup> in which photographic expressions are not the trace of a single energy that can then be symbolized but, on the contrary, the constant processual result of the same material activation of diverse compounds and discourses.

### The Limit of Constructivism and the Postmodern Approach

A large part of postmodern criticism has pointed out the outstanding character of cultural constructivism as a paradigm for the interpretation of photographic objects. Works such as those of John Tagg<sup>37</sup>, Alan Sekula<sup>38</sup> or Ariella Azoulay<sup>39</sup> show the extent to which the constructivist ontology places photography in the order, only, of a cultural artifact of power. The works of these important authors for the photographic theory allow for a clear understanding of how photography, according to their perspective, is socially determined. While I am not unaware that social and power relations historically play a central role in the production, distribution and consumption of photographs, my aim is to discuss how this form of social constructivism is also traversed by various forms of material agencies that exceed human control. By dismissing

the eminently collaborative character between multiple rather than human agencies, postmodern perspectives do not consider the naturotechnical character that constitutes photographs. Focused on the order of human practices, these approaches therefore ignore the alliances and affections that are woven into the photographic folds and on the contrary emphasize the ideality of social-historically constructed meanings. Tagg states that:

*The indexical nature of photography – the causative link between the pre-photographic referent and the sign – is therefore enormously complex, irreversible, and cannot guarantee anything in the realm of meaning. What establishes the link is a discriminating technical, cultural and historical process in which certain optical and chemical mechanisms are put into action to organize experience and desire and produce a new reality<sup>40</sup>.*

It is evident, that for Tagg the photographic materials function as a mere tool available for signifying action. Technical processes are considered by this author as a prerogative of institutional and human agency for very specific goals. Therefore, this view partly deactivates the ability to act of the optical, chemical, physical and biological mechanisms of photographic objects that do not always depend on human intentions. Its approach does not give way to the collaborative mechanisms from which a material imagination of the medium, that exceeds the symbolic order of photographic uses, is woven.

Sekula for his part “considers photography as a mobile, contingent and inherently social entity, an entity always caught between the identical ideological demands of aestheticism (or subjectivism) and scientism (objectivism)”<sup>41</sup>. In this case, the ideology that tinges the consideration of photography leaves aside the participation that non-ideological or merely cultural orders have in it. Far from considering the exclusivity of the photographic inscription in the sphere of cultural constructivism, the limit of the postmodern approach is evident in the collaborative solidarity that is sedimented in each photographic body. Here, institu-

tions and cultural apparatuses do not annul or coerce material motions, but rather enter into a sympoietic network of expressions and meanings<sup>42</sup>. Something similar can be seen in Ariella Azoulay's *The Civil Contract of Photography*, where the author associates citizenship and the institutional network to a set of human agencies and actions that, in the end, determine photographic senses<sup>43</sup>. Accordingly, it is evident that for the approaches of critical postmodernism, photographic materiality is more often than not nothing more than a functionalist element of stronger ideological and social web. What enables a posthuman and material approach to photography is the emergence of a material power that cannot be reduced solely to the forms of human action. This allows for another conception of politics and power relations that are not only plotted at the level of representation but also in the materials that make up the photographs.

Although the discourses of cultural constructivism traverse the assemblages that constitute photographic objects, they do not determine the modes of existence of these aesthetic artefacts. On the contrary, photographic sensibility is inscribed in a plexus of interspecies collaborations and disarticulates the primacy of an exceptionalist poiesis. This is not a reductionist stance that circumscribes all photographic action to material action, but an approach that tests, considers and points out the parts of the assemblages as components that cannot be fused into an inseparable whole. In the face of the totalization and synthesis that nests in the modern spirit of the postmodern, a contemporary approach to photographic artifacts embraces photographic irreducibility to any unique foundation. The relational ontology of photographic materiality deploys an alternative that takes into account the material and semiotic complexity of these artifacts without reducing their meaning to one of these dimensions. This will allow us to consider the unsuspected, unpredictable and surprising places from which photographic materiality shows and hides itself and opens up new areas of interest and meaning ignored otherwise. An example of this can be found in the so-called instantaneous photographs, which present a diverse material structure that combines plastic materials, organic elements, which make up

the film emulsion, and inorganic elements such as silver. The proliferation of layers sensitive to different electromagnetic spectra and color developing layers makes Polaroids a complex network of materials and substances contained in a small format of 8 x 10 cm (Figure 6).

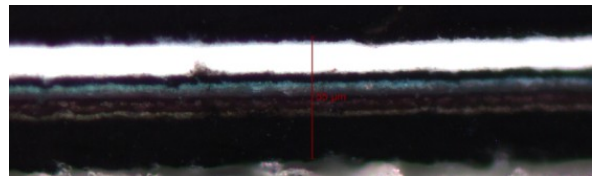


Fig. 6: Milagros Córdova, *Detail of stratigraphic section micrograph of a Polaroid showing the thickness of the different layers*, digital image, 2023.

Each of these elements acts on different scales and at rhythms that are difficult to calculate, opening an alternative to define photographic objects from a material relationship. This kind of interaction in this technical artifact explains how, before being just a tool, photographic objects are other forms of material existence with which plots, entanglements and confusions are woven. In other words, there is a kind of connection or link that human beings have with photographs that is not only related to what they show us, but also to the materials that compose them.

The meanings of photographic artifacts are for postmodern approaches always outside of the photographs. It is in power relations, in institutions, in the discourses of various disciplines such as anthropology, sociology or art history that photographic meanings reside, always constructed and modulated by an exclusively human subjective or collective consciousness. In such a way, they do not realize that meanings are not a prerogative of the anthropos and its networks of signifying and ideological generation, but a plexus shared with everything that exists. Naturally, scientific access to the material agency of the photographs cannot be other than human. But this does not mean that everything is reduced to the anthropocentric forms of understanding. The stake and challenge of this materialist approach is then to try to be sensitive and aware that there are more-than-human forms

that enact, make and participate in the creative and transformative processes of photographic objects. This awareness already shows itself in other form within conservation sciences discussing the multiple agencies in the decay of photographs, as well as in the way photographs are displayed in humidity and temperature-controlled exhibition spaces.

### The /between/ as a logic of material thresholds

Photographic materiality confronts us with a realm of uncertainty. While this extends to all artistic materiality, in the case of photographic objects, this lack of certainty redraws the supposed verification power that rests on technical-natural artifacts. From an unforeseen interaction of materials, techniques and ideas, photography can once again be thought outside the paradigm of 'the true photographic'<sup>44</sup>. It is due to this hesitation that it is possible to conceive photography from a logic of material thresholds. By this I mean that there is no synthesis, no fixed place or essence that determines these objects. If we had to point out a photographic specificity, it would be related to the permanent difference that constitutes the material depth of these objects. Thus, in the /between/ of photographic materiality, in its physical configuration that articulates composites, sensibilities, techniques and ideas, photographic "undecidability"<sup>45</sup> is expressed. Even if the image might show the same picture, each photograph is different and has a life of its own.

This ontological characterization of photography could also be thought of as different from the antagonism pointed out by Geoffrey Batchen. He proposes that the opposition between modern formalism and postmodernist perspectives on photographic theory does not seriously address the constitutive complexity that nests in the technical mediation that characterizes every photographic artifact<sup>46</sup>. By focusing on an ultimate definition of these artifacts—either as luminous trace or symbolic construction—such theories ignore the place of the material interactions that take place in these objects.

Photographic specificity has to do, then, with the particular characterization of each photographic

process that reveals a material imagination of photography always in extension and transformation. For Deleuze, "the unity of matter, the smallest element" that constitutes objects is the fold<sup>47</sup>. That is why a science of matter is modeled on origami, which consists of a continuous folding of paper into a set of constant folds<sup>48</sup>. This way of understanding the composition of objects is suggestive to consider the photographic depth and its multilayered structure. Photographic folds refer, for example, to the weft of plant supports, to the layer of photosensitive emulsions, to the layer of ink receptors or, in the case of photographic films, to the base, the anti-halo layer, the anti-buffing layer, the different light-sensitive layers, the filter layer, the protective layer and so on (Figure 7).

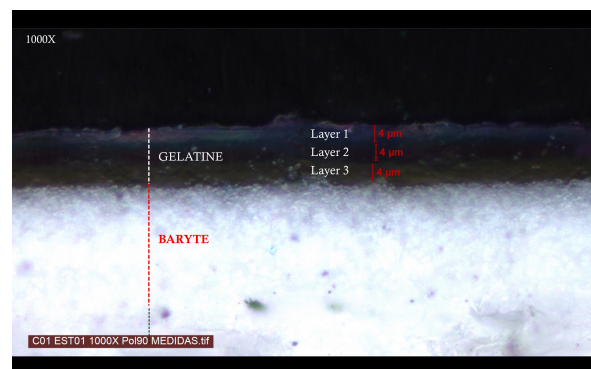


Fig. 7: Milagros Córdova, *Stratigraphic section micrograph of a chromogenic copy*. The superposition of the different layers can be seen, digital image, 2023.

They are therefore folds that overlap, confuse, and confound each other. These thresholds reveal the interconnections between social, economic, energy, technological and chemical ties, displaying unexpected agencies between the organic, the inorganic and the discursive. Salts, gelatins, silver, carbon prints, toners, laser prints, and so on point to materials and processes that are knotted with aesthetic, political and economic agendas. It is in the confusion and in the obscure, that sort of opaque photographic clarity where the material expresses itself. Recently some exhibitions and publications have addressed these issues of the material dependence of photography on different minerals and materials from the biosphere. This is the case of the exhibition *Mining Photography*.



*The Ecological Footprint of Image Production* (2022) curated by Boaz Levin and Esther Ruelfs which also has a catalog published the same year. This exhibition highlighted the relationship between the production of images and the contexts of mineral extraction and different forms of exploitation of nature for the production of photographs throughout history. In the German field recent publications such as Franziska Kunze's *Opake Fotografien. Das Sichtbarmachen fotografischer Materialität als künstlerische Strategie* (2019) expose the relevance that the material dimension of photography has gained in recent years.

The logic of material thresholds that characterizes photography, and that could be extended to other naturocultural artifacts, thus highlights the processual character that particularizes all photography. These material thresholds are the limits, difficult to specify, between photographic materials (which are very specific), techniques and discourses on the medium. They have also been constructed in a differentiated way with respect to other artistic and aesthetic processes. It is in this sense that photographs, before being a trace or a representation, are dynamic objects where the materiality that constitutes them is always in action. A kind of movement or, a constant photographic becoming in which the capacity for action is redistributed to what Timothy Morton called "subcentent totalities" in which the whole is less than the sum of its parts<sup>49</sup>. The material liminality that makes up each artifact is a polymorphic and formless incarnation. Although this material liminality operates in every photographic artifact, there are certain photographs that motivate this formulation given the complexity of what is made visible. This is made explicit in the experimental photographs of Juan José Estéves. The lines made with sodium hydroxide and other compounds of the photographic developers are altered when they come into contact with the fibers of the support and the sodium thiosulfate of the fixative (Figure 8).

The contact between the chemicals and the support gives rise to a kind of formless expression -as an abstraction- that in the case of the so-called "documentary photography" only seems to be visible through a

process of visual magnification. In this case we can then see how photographs can avoid the forms of human production by generating an image through the action of chemicals on paper. Rather than reflecting, they diffract diverse physical, chemical, biological and discursive modes of existence that are diverted and modified from their superficial yet profound alliances. Thus, the photographic surface is always perforated. But it is not a perforation in the phenomenological terms of an affection of the subject but, literally, a material perforation that underlines the photographic depth (Figure 3). This is visible in microscopic views of photographic objects. These porous and cavernous structures signify the described way of considering photographic objects. It is, as introduced at the beginning of this text, in Haraway's terms, a diffractive r(ela)tionality in which connections are established that are impossible to undo and disarticulate. It modulates a mode of photographic existence that, until now, has not received enough attention in theoretical and historical terms.



Fig. 8: Juan José Estéves, Untitled, Chemigramm, ca. 1980, Artist's collection.

The limits of the photographic surface are blurred. The social and natural world that constitutes the photographic artifacts must be thought of together as part of a complex assemblage in which matter and meaning become a multilaminarity in which material actions continuously are agentive processes. Sedimentations occur, however, which in turn will unleash new generative processes of sensitive qualities and meanings. The */between/* upon which photographic processes and qualities are activated makes explicit the active character of matter, which, understood as an agent, develops diverse processes of materialization. Something like a photographic unification or identification does not exist in an ontology of the material thresholds of photography. Instead, it is a permanent disidentification in which there is a tension between the material and discursive nature of conditions, constraints and practices.

Considering photography from the material thresholds makes it possible to explore the “[...] effects of connectivity, embodiment and responsibility for an imaginary place-other [...]”<sup>50</sup> in which these technical artifacts participate in joint actions of transformation and exchange of affects, sensibilities, knowledge and stories. This means that attending to photographic materiality opens alternatives to tell other histories related to photography. Histories that consider the complex infrastructures not only of exploitation but also of alliance and survival that have been involved in these artifacts. The case of *Mining Photography* already mentioned, is perhaps a good example. This alternative operates in photography at the level of the layered structure that makes up each of these objects. This structure of layers, of folds, is also historical, aesthetic, economic and political. It is the way in which all these elements are interrelated in a photograph and which should be followed by a casuistry of historically and materially located photographic processes. This would be revealing if we could come to analyze the type of interspecies connectivity that gives rise, for example, to silver gelatin. A process in which matters, sensibilities and ideas are not only artistic-aesthetic, but also political, economic and social, for which we have a great deal of responsibility.

Thinking of the surface as pure mediality can allow us to return to a gesture that exceeds the visible and in some cases what we can think of photographic objects. The photographic touch, i.e. touching photographic objects, could be one gesture to experience the immersion and inversion inherent in this understanding of the photographic materiality. Touching as an active process, not only human but also photographic, means making a radical twist with respect to our way of encountering these artifacts, considering the long history of musealization of photographs into a realm where the white gloves of the conservator prevail and touching is prohibited. It is also a sensoriality disdained by the empire of purely visual significance, laid out in the middle of this text. Questioning the primacy of visibility in photography is still a challenge and perhaps an alternative to this challenge lies in the formulation of a posthuman ontology of photography that addresses the material agency attached to these objects.

## Conclusions

Photographic materialism, modulated according to photographic materiality, confronts us with an ontological pluralism. This means, following Bruno Latour's research on modes of existence<sup>51</sup>, enriching the cosmos with a differentiated vision that considers all the properties that make the photographic artifact as agents in the aesthetic-signifying generation of these objects. In this relational ontology of photography there does not seem to be a primacy of the human but rather a co-creation between human and more-than-human forms of action.

Photographic materiality, inscribed in a form of vital materialism, is a theory in which the */between/* compounds, substances, techniques and discourses is articulated. In turn, it also traces a connection of generative forces that become tactile and visual surfaces. The */between/* of photographic materiality is therefore not the link between an interior and a photographic exterior, but the ever-changing relation of forces that occurs in every technical body. Cultural constructivism cannot therefore be thought of in the manner of a “hyper-productivism [that] rejects the ingenious intervention of all actors except One; and therefore, it is

a dangerous strategy”<sup>52</sup>. Such a paradigm tears apart the constitutive multiplicity that nests in photographic objects by emphasizing the primacy of a subjective correlationism in which only mind and world are interconnected. In contrast to this human exceptionalist model, photographic materialism makes explicit the grouping of diverse elements and vibrant matter of all kinds. Each photograph is thus considered as a living assemblage, a pulsating confederation that functions in the midst of a material energetics.

As explained, the theory of the photographic index is also unconsolidated by a point of view that removes the founding constitution of photographic ontology. In the face of the axiomatic essentialism that has characterized a large part of these theoretical positions on the medium, photographic materiality points out and underlines that photo-chemical causality is not a *sine qua non* condition for photographic production. On the contrary, the photographic objects are the result of a multiple generativity, of an action that “[...] is not a property attributable to humans but an association of actants [...]”<sup>53</sup> material and discursive entangled in a photographic articulation. Neither mere idea, nor mere electromagnetic trace, biological, mineral and discursive agencies are assembled in a relational symmetry in which exchanges and competitions take place permanently.

Photographic objects then confront us with a surprise. That which alters the security of photographic sameness, of reproduction, certification and visual guarantee. As bodies, these technical materials make explicit an edge without an edge, a set of physical thresholds that teach us a way of “living better with [other machines, humans and animals]”<sup>54</sup>. Understood as nature-technical artifacts, photographs teach an epistemology and a methodology that defies the conventional schemes of approach to this type of objects. They overflow and unleash a pragmatics and an ethics that considers other politics of material and signifying existence. Photographic materialism is therefore not a tool -in utilitarian terms- but a theory-practice in which modes of existing, thinking, imagining and acting another modality of the photographic are complicated.

On a concrete level this posthuman alternative in the ontological understanding of photography can mean the transformation not only of exhibition practices but also an openness to other histories of photography that consider both, what is visible in the photos and their material structure. In addition to destabilizing and contesting past and current approaches to the photographic medium, this proposal may also entail a transformation in the everyday practices that involve photography. In other words, in a world overpopulated with photographic images, rethinking material networks also becomes an ethical issue. This material approach to photography could generate reflections on the implications of producing images in a context of global climate catastrophe.

## Endnotes

1. The writing of this publication was supported by a fellowship during 2024 at the Käte Hamburger Kolleg *inherit. heritage in transformation* at the Humboldt-Universität zu Berlin, which is funded by the Federal Ministry of Education and Research of Germany. I would like to acknowledge Milagros Córdova and Clara Tomasini for all their help in the preparation of the micrographs included in this article. Our dialogues on photographic materiality and conservation have been fundamental in developing the central argument of this paper.
2. The approaches to photography from a socio-historical perspective are innumerable. The basis of this conceptual framework supports the social and historical determination of the production of photographs by emphasizing the historical context, the photographers or actors involved in the production, circulation and consumption of photographs. See for example the well-known works by Gisèle Freund, *Photography & Society*, Boston 1980; Pierre Bourdieu, *Photography. A Middle-brow Art*, London 1990, or Ariella Azoulay, *The Civil Contract of Photography*, New York 2008.
3. The ontological framework of approaches to photography is also numerous. The central focus of these frameworks consists in determining the nature of photography. From a phenomenological perspective, as in the case of Roland Barthes, to a more political perspective, as in the case of Walter Benjamin. See for example Roland Barthes, *Camera Lucida. Reflections on Photography*, London 2000; Walter Benjamin, *The Work of Art in the Age of Mechanical Reproduction* [1935], in: *Illuminations*, ed. Hannah Arendt, New York 1969, pp. 217–251. The decade of the 1980s and 1990s was also a time of disquisition on photographic ontology. The work of Rosalind Krauss and Philippe Dubois on the ontological status of the index is fundamental. See Rosalind Krauss, *Le Photographique. Pour une Théorie des Écarts*, Paris 2022; Philippe Dubois, *L'acte photographique*, Paris 1988.
4. See for example Jennifer L. Roberts, *Things. Material Turn, Transnational Turn*, in: *American Art*, vol. 31, no. 2, 2017, pp. 64–69.
5. Robin Kelsey in Martha Rosler et al., *Notes from the Field: Materiality*, in: *Art Bulletin*, vol. 95, no. 1, 2013, pp. 21–23, p. 22.
6. Bill Brown, *Things*, in: *Critical Inquiry*, vol. 28, no. 1, 2001, special issue, pp. 1–22, p. 5.
7. See Bruno Latour, *A Collective of Humans and Nonhumans*, in: Latour, Bruno, *Pandora's Hope: Essays on the Reality of Science Studies*, Cambridge 1999, pp. 174–215.

8. Anna L. Tsing, *When the Things We Study Respond to Each Other. Tools for Unpacking 'the Material'*, in: *More-than-Human*, Edited by Jaque, Andrés; Otero Verzier, Marina; Pietrouisti, Lucia, Waregem 2020, pp.16–26, p. 17.
9. Rosi Braidotti, *A Theoretical Framework for the Critical Posthumanities*, in: *Theory, Culture & Society*, vol. 36, no. 6, 2019, pp. 31–61, p. 33.
10. Jean-Luc Nancy, *Corpus*, Madrid 2016, p. 10.
11. Gilles Deleuze y Félix Guattari, *Mil mesetas. Capitalismo y esquizofrenia*, Valencia 2015, p. 248.
12. Nichole Marie Witten, *The Chemistry of Photography*, B.A. Thesis, South Carolina 2016, p. 1.
13. Donna Haraway, *The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others*, in: *Cybersexualities: A Reader in Feminist Theory, Cyborgs and Cyberspace*, ed. Jenny Wolmark, Edinburgh 1999, pp. 295–336, p. 299.
14. Ibid.
15. Jane Bennett, *Vibrant Matter: A Political Ecology of Things*, Durham 2010, p. 12.
16. I am interested in arguing at this point with Eagleton's appreciation of the "pseudo-metaphysical" character with which matter is considered in the vitalism of authors such as Henri Bergson, Gilles Deleuze or those of the so-called "New Materialisms". Undoubtedly the wager of the neo-materialisms, as well as of Deleuze and others is always metaphysical, and metaphysical not only in the terms proposed by ancient and modern philosophy, in terms of an ideality, but metaphysical in the post-foundational terms of much of contemporary thought. The notions of "relationality", "force" or "vitality" of matter are not mere ideal conceptualities or projections of the mind on the existent but the physical conditions on which the whole sensible universe is erected and are empirically verifiable. Terry Eagleton, *Materialism*, New Haven / London 2016, p. 10.
17. Gilles Deleuze, *Pure Immanence. Essays on A Life*, New York 2005, p. 9.
18. I do not ignore that particularly in artistic environments there is a diverse production of three-dimensional photographic objects/sculptures, but in order to develop my argument I am interested in focusing on the too extended conception of photography as a two-dimensional image.
19. Haraway 1999, *The Promises of Monsters*, p. 297.
20. The notion of first principle – from the Greek ἀρχή or in some Romance languages arkhé – refers since ancient philosophy to that which functions as the foundation or nature of things. It is the basis of the ontological question referred to what is x? In the case of photography, the French philosopher Jean-Marie Schaeffer has established this link between the indexical condition and the first principle or arkhé of the photographic medium. Jean-Marie Schaeffer, *L'image précaire. Du dispositif photographique*, Paris 1987, p. 13. To find the source of Krauss and Dubois, see endnote 3 where I refer to the work of these authors.
21. Ibid.
22. Ibid.
23. Roland Barthes, *La cámara lúcida. Nota sobre la fotografía*, Buenos Aires 2011, p. 121.
24. André Bazin, *Ontología de la imagen fotográfica*, in: Bazin, André, *¿Qué es el cine?*, Madrid 1999, pp. 23–31, p. 28.
25. Dubois 1988, *L'acte photographique*, p. 48.
26. Krauss 2022, *Le Photographique*, p. 217.
27. Schaeffer 1987, *L'image précaire*, p. 15.
28. In the history of photographic theory there have been various ways of understanding the generation and production of the photographic image. Many of these ways can be read from a posthumanist approach by granting nature a capacity for action and creativity that has been partially neglected by most theoretical and historical approaches to photography. A key reference may be William Henry Fox Talbot's conception of the pencil of nature. While the idea of the impression of nature is an indexical way of conceiving nature's action, it is intriguing how this photographer and theorist of photography not only suspends the supremacy of human action for photographic production but also gives in his work a fundamental role to different forms of chemical action that make photographic production possible. See: William Henry Fox Talbot, *The Pencil of Nature* [1844], Gutenberg Ebook 2010, pp. 28–40.
29. Donna Haraway, *Modest\_Witness@Second\_Millennium. FemaleMan@\_Meets\_OncoMouse™*, New York / London 1997, p. 75.
30. Barthes 2011, *La cámara lúcida*, p. 27.
31. Rosi Braidotti, *Posthuman, All Too Human. Towards a New Process Ontology*, in: *Theory, Culture & Society*, vol. 23 (7-8), 2006, pp. 197–208, p. 206.
32. Ibid.
33. This notion of multiple articulated worlds refers to a way of thinking about ontological pluralism that is not reduced only to the modern vision in which the world is constructed based on human subjectivity. One could think according to this that for the photographic case there are many articulated worlds in diverse scales that go from the particles, substances and materials of nature to the diverse social worlds that converge in these objects. See the work of Marisol de la Cadena and Mario Blaser eds, *A World of Many Worlds*, Durham / London 2018, pp. 1–19.
34. François Soulages, *Esthétique de la photographie: la perte et le reste*, Paris 2001, p. 215.
35. Serenella Iovino and Serpil Oppermann, *Theorizing Material Ecocriticism: A Diptych*, in: *Interdisciplinary Studies*, in: *Literature and Environment*, vol. 19, no. 3, 2012, pp. 448–475, p. 469.
36. See Bennett 2010, *Vibrant Matter*, p. 9.
37. See John Tagg, *The Burden of Representation. Essays on Photographies and Histories*, Minneapolis 1993.
38. See Allan Sekula, *On the Investion of Photographic Meaning*, in: *Thinking Photography*, ed. Victor Burgin, Hampshire / London 1982, pp. 84–109.
39. See Azoulay 2008, *The Civil Contract of Photography*.
40. Tagg is very thorough in his way of describing and characterizing the institutionalization of an optical mode and its link to a mode of physical control of bodies. However, here I am interested in focusing on that line of signifying ideality that runs through his work. This is evident in the relevance that the author gives to the symbolic dimension of photography, precisely because the medium operates as a control mechanism in certain circumstances. Tagg 2009, *The Burden of Representation*, p. 9.
41. I endorse Geoffrey Batchen's reading of Alan Sekula's postmodern perspective. Geoffrey Batchen, *Burning with Desire. The conception of photography*, Cambridge 1999, p. 15.
42. See Donna Haraway, *Sympoiesis. Symbiogenesis and the Lively Arts of Staying with the Trouble*, in: Haraway, Donna, *Staying with the Trouble*, Durham / London 2016, pp. 58–98, p. 66.
43. See Azoulay 2008, *The Civil Contract of Photography*, p. 25.
44. See *Photography Theory*, ed. By James Elkins, New York / London 2007.
45. This notion of undecidability comes from the thought of Jacques Derrida and points, as Evando Nascimento affirms, to an "experience irreducible to any dialectical contradiction". In the case of photography, this undecidability makes explicit the constitutive multiplicity of every photographic object and the impossibility of reducing its sensitive and expressive condition to an indexical logic or to a photographic constructivism. Evando Nascimento, *Derrida y la literatura*, Adrogé 2021, p. 131.
46. See Batchen 1999, *Burning with Desire*, p. 18.
47. Gilles Deleuze, *The Fold. Leibniz and the Baroque*, Minneapolis 1992, p. 34.
48. Ibid.
49. Timothy Morton, *Humankind. Solidarity with Nonhuman People*, London / New York 2017, pp. 253–254.
50. Haraway 1999, *The Promises of Monsters*, p. 28.
51. Bruno Latour, *An Inquiry into Modes of Existence. An Anthropology of the Moderns*, Cambridge / London 2013, p. 21.
52. Haraway 1999, *The Promises of Monsters*, p. 37.
53. Latour 1999, *A Collective of Humans and Nonhumans*, p. 214.
54. Joanna Zylińska, *Bioética de otro modo o cómo vivir con máquinas, humanos y otros animales*, in: *Revista de Filosofía*, vol. 51, no.146, 2019, pp. 112–140, p. 114.

## List of Figures

Fig. 1: Milagros Córdova, *Micrograph of a stratigraphic section of a silver gelatin photograph showing the different layers of paper, baryte and gelatin with silver*, digital image, 2023. (© Milagros Córdova)

Fig. 2: Graphics atlas, *Fiber-based paper supports look and feel like paper on the back. Prints with a heavy weight paper may tend to curl slightly* (Image of a photographic object) Digital image, undated. ([http://www.graphicsatlas.org/identification/?process\\_id=266#objectview](http://www.graphicsatlas.org/identification/?process_id=266#objectview), 10.11.2024)

Fig. 3: Milagros Córdova, *Micrograph of the surface of a silver gelatin amplified to 200 microns*. Digital image, 2023. (© Milagros Córdova)

Fig. 4: Milagros Córdova, *Micrograph of the surface of a chromogenic photograph amplified to 50 microns, digital image*, 2023. (© Milagros Córdova)

Fig. 5: Milagros Córdova, *Stratigraphic section micrograph of a Polaroid showing the thickness of the different layers*, digital image, 2023. (© Milagros Córdova)

Fig. 6: Milagros Córdova, *Detail of stratigraphic section micrograph of a Polaroid showing the thickness of the different layers*, digital image, 2023. (© Milagros Córdova)

Fig. 7: Milagros Córdova, *Stratigraphic section micrograph of a chromogenic copy. The superposition of the different layers can be seen*, digital image, 2023. (© Milagros Córdova)

Fig. 8: Juan José Esteves, *Untitled*, Chemigramm, ca. 1980, Artist's collection. (© Juan José Esteves)

## Abstract

Photographic materiality refers to a way of conceiving photographic artifacts as a concrete material arrangement. Gelatin, silver, different organic and inorganic compounds, like the baryte, and the vegetable fibers and plastics, that are part of the supports of printing, constitute the material configuration of these objects. This article will argue that awareness to the material dimension of photographs allows to formulate a post-human understanding of these artifacts that challenges the well-known indexical and socio-cultural ontologies of the medium. From this perspective, photographic materialism constitutes a theory of the *between*, considering photographic objects as constituted by a relational ontological category. Focusing on the more-than-human agencies in photography actively challenges humanistic and anthropocentric considerations of photographic theory.

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## Title

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