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Abstract

This dissertation is devoted to examining the interplay between immersive devices and erotic-pornographic images. Employing a media archaeological approach, the research delves into technologies of the past to shed light on contemporary phenomena. Specifically, the stereoscope, in its various material forms, has served as the focal point of this exploration into erotic archaeology.

The initial segment of this study elucidated conceptual frameworks and interpretive paradigms essential for understanding the processes of immersion in the image. *Posture* and *inclination* were thus examined both as symbolic forms that co-partecipate in the immersion process and as metaphorical models underlying the transfer of meaning that attributes moral and social qualities to the bodies that perform it and the devices with which they come into contact.

Subsequently, the historical evolution of the stereoscopic apparatus and the philosophical discourse surrounding it have been examined. This investigation laid the groundwork for a theoretical trajectory exploring the stereoscopic devices both in their ergonomic conformations and rhetoric communication.

This structure was then applied to the more properly erotic-pornographic sphere. This section examined the functioning and compositional strategies of the stereopornographic image, focusing on the second half of the nineteenth century. One of the main aims was to demonstrate the non-coincidental synchronicity between the emergence of these machines of the visible and the definition of the pornographic in the modern sense. Indeed, it has been argued that the ambiguous relationship with technically reproduced reality inaugurated by the stereoscope has contributed to the ever-unstable definition of the ontology of the pornographic, beyond its genealogy related to cinema.

In keeping with the intention to propose the most situated analysis possible, we then proceeded to outline the relations – theoretical, scopic, social and political – between the female figure and erotic-immersive spectatorship in the same years, hypothesising a form of female resistance to the paradigms of the male gaze.

Finally, the dissertation returned to the present. Maintaining the perspectives used so far – posture and female spectatorship – the final chapter focused on the re-emergence of

immersive pornography through Virtual Reality (VR), highlighting its main compositional, aesthetic and political characteristics.

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Introduction

In this dissertation we will attempt to answer one main question: what does it mean to immerse oneself in a technically reproduced erotic-pornographic image that is mediated through wearable devices such as the stereoscope and contemporary Virtual Reality? This is certainly a broad research question that activates a constellation of issues ranging from the perceptual to the political, from the aesthetic to identity. In order to refine the system and tools of investigation, we will define and adopt some methodological instruments that can take into account the multi-layered complexity of the issue. First and foremost, speaking of layers and *strata*, the research will make use of the media archaeological – we could also say, for greater Foucauldian precision, *genealogical* – method. This line of research thus activates a temporal dimension that interrogates the history of technology and sexuality in order to account both for the socio-technological systems situated in their time and – in continuities and ruptures – for the structures of our present. The focus on the stereoscope, the main protagonist of this text, and the context of the second half of the nineteen century is in fact derived from a contemporary phenomenon: pornographic Virtual Reality (VR). A phenomenon – and we use this term to indicate the complex activation of domains of this aesthetic experience – that questions both the medium specificity of VR and the ontology of the pornographic image. The intention of the thesis, however, is not simply to find the techno-iconic prototype of this contemporary image form and device, but rather to demonstrate the long tradition of a *modus percipiendi*. This is a form of perception that is characterised and innervated by the ancient *desiderium* of approaching technically reproduced things and diving oneself in the liquidity of the image, to use a metaphor in the semantic realm of immersion. This movement – of the gaze and of the body – will also allow the definition of another interpretive lens: posture. Understood as a *symbolic form*, the postural dimension will make it possible to explain both the modalities of soma-technical fusion with the apparatus and the various moral and reputational implications associated with the devices and content in question.

In the first chapter we will discuss how posture can tell us something about the way we approach media and the images they convey. The analysis of this form of interpretation is divided into five sections, which aim to define different declinations of such postures. Starting from the integration of posture in the broad scheme of symbolic forms and haptic modes of perception (1.1), the chapter will propose to consider a methodological link

between posturological and mediological practice. A connection that will be discussed by focusing on what we will call *uncomfortable media* (1.2), namely those devices that require their viewers to challenge a static comfort and postural verticality. Just as posturology – a practice of alternative medicine – is concerned with extracting from the postural condition of the subject a diagnosis of broader chronic pathologies, so a mediological version of it will be able to obtain from the way we physically approach a media object, certain insights into its technological, rhetorical and social identity. It is in relation to this last transfer of meaning that section 1.3 proposes a brief genealogy of the relationships between postures, body figures and the moral consideration of the subjects who perform them. Why was and is the vertical uprightness of posture associated – metaphorically and concretely – with a morally upright subjectivity? Keeping this question in play, it is proposed to consider the same metaphor in the mediological sphere, further situating the insights that posture can give us in the encounter with the individual *Apparat*. Among the iconographic possibilities of these body figures, the following section (1.4) will deal with the oblique contortion of the onanistic body as an emblematic posture associated with pornographic fruition. In addition to introducing a more specifically erotic key, this section explains the genealogical processes behind the "invention" of the moral attributes of masturbation. Onanism, understood as an immersive and hermetic practice par excellence, will help to define the absorbed subjectivity, its reputation and the technical forms that contribute to its gestures. A subjectivity that would, however, risk defining itself as an abstract entity, dangerously close to the cogitating and privileged ego of traditional philosophy.

With the intention of promoting a form of inquiry that is as situated as possible, in an intersectional sense, section 1.5 introduces the interrelations between posture, gender, the erotic relation and phenomenology. The latter is analysed through the lens of feminist and queer perspectives in a semantic game that recovers the ancient etymon of the latter term, referring to an oblique, off-centered social geometry.

The second chapter deals with the qualities of the optical devices in question. First of all, it will be necessary to specify the methodology under study, which falls within the broad framework of media archaeology (2.1) and is oriented towards certain positions with regard to the temporal scope of the investigation and the terminology that can best do justice to the images and media under study. Section 2.2, divided into four subsections,

presents and examines the genesis of the stereoscope, the main stages of the optical debate and the protagonists of the technical evolution of the device. Subsection 2.2.1 deals with the figures of Charles Wheatstone and David Brewster, the authors at the centre of the scientific literature on human binocularity in Victorian England and the invention and commercial dissemination of the stereoscopic device. The intention here is to highlight the profoundly different nature of the two authors' theoretical positions and to recalibrate the actual revolutionary impact of the device after its commercialisation. In the following section (2.2.2), we will consider the figure of Oliver Wendell Holmes, the inventor of another – and quite popular – version of the stereoscope in the United States. Taking into account the peculiar identity of the author – scientist and populariser – the analysis will examine the twofold relationship between the material conformation of the device and the discursive and rhetorical modalities with which it was communicated. In the first case, the focus will once again be on the postures and specificity of the ergonomics of this philosophical toy, in order to determine the situated consequences in the social and reputational spheres. We will then (2.2.3) examine the various *discursive* commonplaces promoted by Holmes with regard to his invention, trying to extract broader considerations on the theoretical and political nature of technical reproduction, its links with capitalism and the colonial impulses of the United States at the time. Finally (2.2.4), some terminological specifications are offered to describe the various scopic movements and discursive strategies *around* and *in* the image promoted by the stereoscope and its various versions. Using the concepts of *envelopment* and *projection*, it is proposed to consider such modes of perception according to a gradient ranging from the hermetic encapsulation of absorption in the device to a "proto" tele-presence.

The third chapter of the dissertation introduces the interaction between stereographic technology and the context of erotic-pornographic images. Given the historicised nature of the section, it is deemed necessary to point out that the contemporary boundaries of the pornographic cannot be applied *tout court*, often making the contexts of the erotic interchangeable with those of the pornographic – the latter conceived as a product depicting sexual action, in other words *hardcore*. Indeed, the third chapter (3.1) introduces the study of the conceptual chiasmus between the optical and the pornographic, which finds its focus in the concept of *obscenity*. The intention will be to intersect stereoscopic optical obscenity – as understood by authors such as Jonathan Crary

– with moral and iconographic obscenity, following the meaning usually attributed to the term. This section proposes to consider the synchronicity between the emergence of stereoscopic immersive technologies and the "invention" of the pornographic genre in the modern sense. Such a parallelism will encourage the establishment of an alternative, albeit interrelated, genealogy from the cinematic one, highlighting how such products were characterised by immersive, three-dimensional and haptic features before they were set in motion. This important connection is also stressed in light of the seemingly indispensable characteristics of the devices in question and the ambiguous ontology of modern pornography, which is always on the borderline between hyper-realism and performative illusion. These structures also participate in the determination of the technically reproduced pornographic as simultaneously *defined by* and *promoting* an archiving of the sexual "real" (3.2). The next section of the dissertation (3.3) focuses on describing the main iconographic commonplaces of stereopornography: media, techniques, compositions and characters will be crucial to understanding the complex social and representational system at work in these early forms of immersive pornography. Section 3.4 will specify this taxonomy by examining a case that is still widely common today: the "beaver shot" or genital close-up, which inaugurates a specific case of immersion in the pornographic body between Freudian death drive and medical gaze. Finally, in the last section (3.5) of the chapter, a theoretical scheme will be proposed to explain the contractualist functioning of these images and devices. Through a comparison with the literature on iconic power and by crossing aesthetics and art anthropology, the section will propose to understand the pornographic immersive experience as a *ritual form* in which the viewer consciously invests the haptic subjectivities reproduced in stereography with agency. This interpretive model will make it possible to explain the erotic effect of stereopornography and, at the same time, to identify certain techniques that confirm and support this interpretation. The interpellation of the gaze, the architectural constructions and the careful use of supports will be the main characteristics analysed in order to determine the intention of the pornographers, conscious or not. A purpose determined by the will to promote a relationship of quasi-inter-subjectivity and the co-habitation of the iconic space between the observer and the technically reproduced subjectivities.

The fourth chapter, in line with the needs expressed above (1.5), will attempt to locate the stereopornographic observer at the level of gender and class. Admitting a degree of speculation, the first part of the chapter (4.1) will propose a sketch of the female observer of the time. Cross-referencing gendered, theatrical and stereographic performances, the section will seek to account for the invisibilisation – social and theoretical – of this figure. Promoting eccentric forms of eroticism – queer, one might say – it will show how the female observer, often excluded from effective pornographic citizenship, derived pleasure from other empowered female figures, the most common and widespread subjects and bodies in the pornoscape of the second half of the nineteenth century. Through the analysis of iconographic figures such as the New Woman and famous performer such as Maud Allan, the section will hypothesise a form of female resistance to the paradigms and interpretation of the male gaze. A perspective that ultimately returns to postures. Section 4.2 examines the disciplinary systems that, starting from the posturological dimension, have defined the body of the female observer. Through analyses of etiquette manuals and the performative practices promoted by American Delsartism, the political agency of the female spectator's posture will be demonstrated. In particular, we will focus on those devices – discursive and scenic – that have introduced a deconstruction of the vertically and morally upright body of the respectable female spectator, but at the expense of purging all forms of sexual and pornographic autonomy.
Finally, the fifth chapter brings us back to the present. Following an archaeological strategy, an analysis will be offered of those experiences and phenomena which, in the present day, have suggested experiences similar to those described so far. Without proposing any form of technological evolutionism or simple continuism, the intention is rather to clarify the conceptual starting point from which we have begun. With an initial exploration of the main characteristics of VR porn (5.1), a further posturological focus is proposed (5.2). The latter will be determined by the analysis of the *videal bodies*, i.e. those bodies that can be inhabited by the viewer but which at the same time constrain their movements – both physical and identity related. A form of embodiment that will therefore be investigated through the case study of *Virtual Sexology I* and *II* by BaDoinkVR (5.3). These products – 360° video pornography – are particularly relevant here for a twofold reason: on the one hand, they promote and confirm the typical directorial solutions of VR porn, and on the other, as we shall see, they are essential for

the codification of empathic rhetoric in its erotic declination. Specifically, and returning to the female observer, this section will demonstrate the endurance in the present of an insidious disciplinary system that tends to purify the pleasure of pornography when it is conceived and produced for a female audience. Finally, for full theoretical coherence, masturbatory performance and its interactions and frictions with VR will be examined (5.4). Considering pornography as a genre that exploits and highlights the limits of the technological, it will be shown how its VR version promotes a form of genital and identity *fluidification*. The functioning of such technology seems to reproduce projective systems, i.e. working through the incorporation of subjectivity into the virtual environment. However, if the masturbatory act is considered as a complex, resonant and multi-layered somatechnical practice, it will be shown how it always determines a series of stimuli – physical, visual and imaginative – that go beyond the supposed fixity of sexual orientation and projective interpretative lens.

Chapter 1. Uncomfortable Media: Towards a Postural Theory of Erotic Immersion

1.1 Immersion, Environments and Symbolic Forms

This dissertation is set in the context of a theory of *immersive* media. However, the broad debate on the subject requires us to make some specifications, which can best account for the theoretical perimeter of reference. In fact, the archaeological nature (cf. 2.1) of this analysis focuses on certain optical devices – such as the stereoscope – widespread in the second half of the nineteenth century, but with a perspective of investigation that starts, in its determination of objectives, from the present. The contemporary mediascape has in fact renewed interest in immersive "philosophical toys" such as Virtual Reality, whose commercial re-emergence (2014-15) (Evans 2018), has imposed new needs for aesthetic and culturological interpretations. The first specification is therefore related to the *type* of immersiveness referred to here. Immersion is in fact a particularly broad perceptual motion, encompassing various scopic and non-scopic movements. Being immersed in a medial form could in fact explain and account for virtually *all* our mediated experiences, from literature (Ryan 2001, 2007; Wolf et. al. 2013) to cinema (Griffiths 2008, Grossi 2021) and art (Grau 2003; Liptay and Dogramaci 2016; Modena 2021). In the case of the immersive iconic experience, one can therefore begin to specify the field of investigation by defining two forms of envelopment: the *environmental* and the *hermetic*. The former term is intended to refer to all those forms of immersion in the image that do not imply the exclusion of the world and the concrete body of its user. The broad genealogy of these images – from the Palaeolithic cave to the *camera picta*, from the panorama to the environmental art installation – accounts for an enveloping movement of the image that does not directly "touch" its observers and does not engage with their proprioceptive interstices (cf. 4.1).

Rather, the specific perimeter of this analysis is related to devices that, due to their material, ergonomic and rhetorical qualities, propose a type of immersion that we want to define as *hermetic.* Hermetic immersion describes those technological forms that

collapse the perceptive field with the iconic one, excluding, albeit illusorily and only to the eye, the world and the concrete body of its observer. This specific immersive form – such as the one of the stereoscope and Virtual Reality – determines further consequences with respect to the relationship between perception and image, as well as activating a link with the erotic-pornographic dimension of the media experience under consideration. The hermetic technologies we are considering are in fact media devices and forms that *do something* to the image and its observer. They produce optical-physiological *illusions* – as in the case of the three-dimensionality of the stereographic environment – and tactile stimulations – primarily linked to the fundamental wearability of the devices in question, always in concrete (and erotic) contact with the user's body.

The optical-illusory dimension of hermetic absorption produces a type of relationship with the images and entities reproduced there that insists on a *haptics-type* perceptual modality. This category is assumed in this analysis as indispensable for the understanding – genealogical and contemporary – of the perceptual and erotic systems at work in the relationship with these specific images. As we shall see (cf. 3.4), they set up a peculiar iconic *contract* and quasi-inter-subjective simulation between observer and the erotic entities technically reproduced in the image-environment. Indeed, the solidity of the stereographic entity resonates with those median characteristics between the optical and the tactile that determine the perceptual-aesthetic category of the haptic. Riegl (1901; 1966), notably, constructs the term from his museological experience and particular familiarity with ancient textile art specimens (Marks 2000, 168-169; Vasold 2010, 51). The author determination of the haptic is exemplified by the Egyptian bas-relief, understood as both the expression and aesthetic experience of a "primitive" abstract subject that privileges touch in its experience of the world. Conversely, from a historical-evolutionary perspective, the optical is achieved by late Roman abstraction expressed through the illusion of perspective and the sculptural integration of plasticity. A model, the optical, that for Riegl is cyclically rediscovered in his contemporaneity and in the definition of pictorial Impressionism. This aspect refers to (perceptual) distances with which one looks at art and representation. The former is haptic, close and attentive to surfaces and textures, just as the latter is optic, distant, abstract and focused on the composition as a whole. The stereoscope and its solid entities thus seem to propose a short circuit to Riegl's interpretation. The experience is unmistakably optical – hyper-

perspective and solid – but its perceptive attitude is close, innervated in the apparatus and seduced by the eroticism of its content. It is because of the technical nature of the photographic image that Benjamin overturns the chronological definition of Riegl's categories, recognising in avant-garde art and film techniques an overtly haptic quality.[1] This system, as we will see (cf. 2.2.1), resonates with Dadaist and cinematographic shock but also includes those aesthetic pleasures of proximity[2] as a highly politicised apparatus that frictions with the profound optical abstraction of the contemplative subject. The hapticity of the stereoscopic solid figures thus defines an ambiguous movement that collapses the extremely optical into the haptic, in an erotic path of perception emphasised by precise postural inclination and the quasi-inter-subjectivity processes at work.

Hermetic immersion, we have anticipated, also promotes a concretely tactile relationship with the device. This somatechnical[3] interrelation therefore requires a lens of precise analysis that can explain its genealogical effects, i.e. those conditions of meaning that intersect and hold in tension the corporeal, the discursive, power and the institutions that express it. This assemblage is examined here not from a cyborg perspective – thus linked to the complete incorporation of the technical – but rather through the concept of *posture* and the body figures (Fontanille 2004; Grespi 2021) it promotes. The posture demanded by the device or performed by its observer introduces systems of analysis that allow us, on the one hand, to further specify the concept of immersion and, on the other, to consider the different and layered constructions of meaning that posture and bodily inclination may imply with respect to the medial identity of the devices under consideration. Posture, in this sense, is understood as a *symbolic form*. The concept here is clearly indebted to Panofsky (1927) and the congruity with the author's thought is also defined by the spatial quality that posture includes in its very definition. The Panofskyan interpretation of linear perspectives as both sentiment of the world [*Weltgefühl*] and of the space [*Raumgefühl*] of a given epoch, helps us to perimeter the historical-ideological value of the term. It

[1] "The tasks which face the human apparatus of perception at the turning points of history cannot be solved by optical means, that is, by contemplation, alone. They are mastered gradually by habit, under the guidance of tactile appropriation" (Benjamin 1935, 240).

[2] We will see Benjamin's ambiguous position on the amorous role of inclination and the unexpected pleasures of proximity (cf. 1.3).

[3] The main reference here is to Murray and Sullivan's (2009) extensive reflection. The term, a synthesis of sòma and tèchne, stands as an alternative model to the antinomian pairs of nature and culture or interior and exterior, with the intention of "queer orderability by bringing to light the operations of power, the somatechno-logic, that constitute(s) (un)becoming-with in situated ways" (Sullivan 2009, 188).

could easily be applied to posture as an element that participates in that "double cut" typical of the perspective device. The linear perspective in Panofsky in fact determines a twofold movement: of distancing between man and the (represented) world and at the same time of immersion of the observer in the illusion of the three-dimensional image. A double movement of perspective that is in fact applied here to the postural agency of the immersive hermetic device: it asks its users to *observe* certain body forms and inclinations and, at the same time, the latter exercise their strategies of resistance and friction to these instances. The application of the symbolism of form, recovers, as we shall see, its etymological root, precisely in the light of its capacity to *put together* and at the same time produce a discursive or iconographic expression of a broad cultural and conceptual system.[4] It should also be specified that the root of the term "symbolic form" is here in line with Panofksy's usage, which, compared to the original in Cassirer (1923-29), implements a clear delimitation of its field of investigation. The discussion of the appropriateness of Panofsky's choice of term extension is not the subject of this analysis,[5] but it is essential to understand its applicability to other objects of investigation such as posture. In line with Neher's reflection (2005; 2006), the posturological dimension, like perspective, can aspire to the category of symbolic forms in the light of its *symbolic pregnance* [*symbolische Prägnanz*]. By the term Cassirer means "the way in which a perception as a sensory experience contains at the same time a certain non-intuitive meaning which it immediately and concretely represents." (Cassirer 1957, 212). If we consider posture and inclination as a *perceptual modality*, it is therefore possible to integrate it into symbolic forms. Just as perspective in Panofsky tells us of the historicity of perception and its optical-mathematical representation in a specific cultural perimeter – that of the Italian Renaissance – so posture, here, wants to account simultaneously for the perceptual structures derived from it and the transfers of meaning implied in bodily inclination and the media with which it relates.

[4] Cassirer proposes a very broad concept of symbol, which, however, helps to understand its specification in Panofsky. For Cassirer a symbol is "the totality of all phenomena which in whatever form exhibit 'sense in the senses' [*Sinnerfüllung im Sinnlichen*] and in which something 'sensuous' [*ein Sinnliches*] is represented as a particular embodiment of 'sense' [*Bedeutung*]" (Cassirer 1957, vol.3, 93).

[5] For the general debate on symbolic forms see: Hubert Damisch, *The Origin of Perspective* (Cambridge: MIT Press, 1995) and Allister Neher, *Panofsky, Cassirer, and Perspective as Symbolic Form* (Ann Arbor: Umi, 2006).

1.2 Posturology and Uncomfortable Media

Every inclination turns outward,
it leans out of the self in the direction of
whatever may affect me from the outside world.[6]

Interacting with a technological device, whatever it may be, always requires our bodies to assume a position, to perform a figure that best suits the material conformation of that object. Considering the postures that each *Apparat*[7] invites us to adopt could help us to better clarify the status – technical, political and moral – of these machinic entities. Therefore, the aim of this first part of the thesis is to extract from the physical approach and postures through which we interact with devices broader symbolic forms that could clarify the status of the images that these media convey. This analysis focuses on those technologies characterised by wearability, the apparent exclusion of the user's body from view and the illusion of three-dimensionality. This study will focus on the stereoscopic devices popular in the second half of the 19th century as a genealogical form of contemporary Virtual Reality. The focus on erotic-pornographic content is also intended to extract from this methodological approach a theoretical constellation that finds in the concept of obscenity the focal point of a system that crosses mediology, visual culture, perception theory and the broad sphere of gender and queer studies. Starting from postures, physical, symbolic and moral, a methodological and epistemological intersection is proposed that will inform the subsequent analysis of the material devices in question.

The term "posturology" has been used within the framework of so-called alternative medicine "to define the discipline studying the relationship between posture and many pathologies, above all chronic pain" (Gori and Firenzuoli 2005). The aim here is certainly not to investigate the validity and coherence of studies in the medical field but rather to derive a mediological analytic strategy from the posturological approach. In the same way

[6]Arendt, Hannah, 2003. "Some Questions of Moral Philosophy," in *Responsibility and Judgment*, edited by Jerome Kohn (New York: Schocken), 81.

[7] The concept is clearly understood here in a Benjaminian sense, precisely because of the "prepared" and artificial dimension that the optic devices we are going to analyse carry. On this point, cf. Antonio Somaini, "Walter Benjamin's Media Theory: The Medium and the Apparat," *Grey Room* 62 (January 2016): 6-41, https://doi.org/10.1162/grey_a_00188.

that posturology links certain postures to specific chronic pathologies, is it possible to extract from the physical posture with which we interact with devices considerations about the conformations of such media and the power dynamics through which we relate with the images and identities they reproduce?

Technically, "posture" can be defined "as any position that determines the maintenance of balance with maximum stability, minimal energy consumption and minimal stress of the anatomical structures" (Carini et al. 2017, 12). These elements and the relationship between them determine not only the postural conformation of the individual but also factors that are always active in our multisensory perception of the world. If we examine here a precise perceptual perimeter, that is the one related to our mediated experience, it is proposed to consider the postural dimension and its constituent elements as a further tool to identify the medial processes at work relating to the degrees of immersion that these technologies allow. The research in question and the proposed methodology recall a chiasmus between cultural perspectives: the visual, the material and the *popular*. In the first case, visual culture and its discipline recall the broad field of studies that, since the 1920s, has questioned precisely the cultural value of images and vision in its various declinations (Anglo-American, German and French) (Pinotti and Somaini 2016, 1-66). However, the attention here is to cross the study of visual, which already includes a focus on the tangibility of devices, to material culture, understood as the set of expressions of the life of a social group, located in different historical periods, analysed through its technical and socio-economic products (Harris 1979; Woodward 2007; Berger 2009; Miller 2010; Ciabarri 2018). The other pole of the culturological crossroads relating to popular or mass culture (Strinati 2004; Storey 2018) is activated precisely concerning the erotic-pornographic content of the analysis. Indeed, the historical insights proposed in this dissertation deal with material products and media that have been excluded from the canon of art and its history and theory since nineteenth-century stereoscopy. This aspect recalls the theoretical and methodological perspective of popular culture studies from its Gramscian origins (1950, 215-221) and its development in contemporary cultural studies (Moores 1993). The main methodological feature to be applied here in studying such popular material and its circulation is not to examine the production of a subaltern class, as in Gramsci, but to investigate how this social arena has defined processes of resistance and resemantisation to such consumption (Fiske 1989; Dei 2002, 77). Therefore, this

study conceptualises this audience not as mere observers and passive users but as actors in interpretive dynamics and, above all, in popular *resistance.* In fact, the origin of pornography, unlike artistic eroticism, has to do precisely with a strong political and parodistic connotation (Hunt 1993; Williams 2019), which, as we will see, already marked the first photographic and stereoscopic productions.

This intersection between the visual, the material and the popular will be applied precisely from the proposed posturological focus. In fact, it is this link that makes it possible to take greater account of the multisensory involvement in perceptual processes and, more generally, to derive from the posture and ergonomics of devices a theoretical framework that seeks to explain how they work in mediological terms. Posturology and, more generally, posture, as already anticipated, are necessarily related to *comfort*. A static posture, whether technically correct or incorrect, is determined precisely by the comfort perceived by the subject who consciously adopts it. Every media form, from books to cinema to Virtual Reality, requires a set of codified postures that are determined by a complex somatic and cultural system and, as such, are historically mutable.

What seems relevant, for a broader theory of immersion, is to recognise in postural characteristics the main propaedeutic elements of different degrees of audiovisual immersion. Here, the constitutive elements of posture (maintaining balance with maximum stability, minimum energy consumption and minimum stress on anatomical structures), their relationship and the disparate stimulations provided by the devices studied can help us to schematise the forms of immersion they allow.

The devices examined in this thesis are characterised by certain elements that interact directly with the postural setup of their users: They require a necessary vestibular involvement because they challenge one's upright posture, balance and comfort. They are *uncomfortable media,*[8] a term intended to describe the actual possible ergonomic discomfort of the devices, as is still often the case with contemporary VR, but more generally, to identify a type of media experience that materially and symbolically challenges one's postural comfort and, one might say, perceptual *rectitude*. This challenge will define media identities over the centuries and again cross the notion of

[8] The question that must be asked to position this analysis correctly is: uncomfortable for whom? The definition of "discomfort," similar to that of "posture," retains its historical and cultural variability. Here, aware of the variability of the concept, we will focus on discomfort as a sensation derived from postures other than straight ones. For the viewer accustomed to a vertical body architecture such as that of the Western world, they demand a physical and symbolic challenge to a disciplined *rectitude*.

obscenity. As already anticipated, this is a key concept for this investigation. It synthesises the (presumed) moral obscenity determined by erotic pornographic content, the compositional obscenity typical of the immersive stereoscopic image that, according to Crary (1990), determines a disorientation of Albertian perspective paradigms and, we would like to add here, a postural obscenity. Again, this last factor is intended to function as a synthesis of the two interpretive perspectives. On the one hand, it is an obscenity of inclination: Uncomfortable media require a physical posture that is often precarious or, in any case, challenging in terms of postural balance and the constituent elements mentioned above. On the other hand, they lead to a posture that is often morally obscene in many ways, especially with the archaeological emergence of proto-immersive devices in the nineteenth century. Particularly relevant to this respect is Baudelaire's heartfelt denunciation (1859) of the thousands of subjectivities involved in stereoscopic vision:

> A little later a thousand hungry eyes were *bending over* the peepholes of the stereoscope, as though they were the attic-windows of the infinite. The love of pornography, which is no less deep-rooted in the natural heart of man than the love of himself, was not to let slip so fine an opportunity of self-satisfaction. (Baudelaire 1859, 231, emphasis mine)

For Baudelaire, too, postures are central to the codification of moral and visual obscenity. Along with the more general criticism of the medium of photography, the poet's words echo a disdain for the disreputable posture that the spectator's body assumes in relation to this new machine of the visible, the stereoscope. This concern, albeit in a brief passage, brings back the fear of an apparatus capable of becoming "the attic-window of the infinite" and, therefore, one of the first erotic technical immersions in history. This disdain becomes even more specific when associated with female postures, whose bodies, especially at the time, are crystallised in a rigid normative pattern typical of Victorian culture:

> And do not imagine that it was only children on their way back from school who took pleasure in these follies; the world was infatuated with them. I was once present when some friends were discreetely concealing some such pictures from a beautiful woman, a woman of high society, not of mine – they were taking upon themselves some feeling of delicacy in her presence; but "No," she replied. "Give

> them to me! Nothing is too strong for me." I swear that I heard that; but who will believe me? (Baudelaire 1859, 231)

Therefore, we may hypothesise, at least for the period of Baudelaire's denunciation, that an obscenity, strongly connoted from a gendered perspective, is overbearingly linked to the need to orient one's posture beyond a more morally consonant upright position. This figure of the body would probably have determined allusive inclinations and the view of the intricate system of crinolines typical of 19th century women's fashion (figs. 1-2), which, as we shall see, would be another central point of the stereoscopic eroticism of the time.

Figure 1 Untitled, circa 1890, J. Robie, oil on canvas, in Balzer (1998, 117).

Figure 2 Porcelain Grouping, circa 1850, Anon., in Balzer (1998,55).

However, the moral obscenity of uncomfortable media and their postures is not limited to the possible licentiousness of the contorted bodies immersed in these devices. It lies more broadly in the erotic graft between the physical body of the user and that of the machine. A kind of soma-technical fusion that had already provoked reactions at the time was reflected, for example in popular cartoons. This was the case with the magazine *Punch*, which published an illustration of the "*Elephans Photographicus*" (Punch 4 [20 June 1863]: 249 in Silverman 1993), a strange technological animal, a proto-cyborg, one

might say, a parodic representation of a photographer who, under the opaque fabric typical of the cameras of the time, was to an outside observer a hybrid creature (fig. 3).

Figure 3 Elephans Photographicus*, from* Punch*, June, 1863.*

The "*Elephans Photographicus*" returns to the concept of posture and tells us about the popular assimilation of these new bodily figures, in this case with reference to the camera, which, as was typical of marketing at the time, was associated with the physiological function of human vision and was suitable for fusion with its operator. Huhtamo (2018)[9] takes up this mythical-parodic figure precisely to highlight the biunivocal relationship[10] typical of the photographic gesture (Grespi 2019), establishing an important stage in the codification of the cyborg that is largely influenced by fascination for the automaton.

As we have already seen with Baudelaire, the eroticisation of these postures is central to this analysis and is confirmed by the essential contribution of Linda Williams. In "The

[9]In the section dedicated to Holmes, we will also see how these metaphors – visual and discursive – construct a precise interpretive field of the photo-stereographic linked to the association between camera and weapon, fully condensed in the concept of the safari to which the *Elephans Photographicus* refers. We would like to thank Barbara Grespi for the essential discussion on this topic.

[10] The two-way nature of this relationship can be summarised by the concepts of prosthesis and epithesis. The latter term is here used in the sense proposed by Flusser (2014). If humans extend their innervated network in the technical objects they use, the concept of epithesis, the counterpart of prosthesis, describes the opposite dynamic, whereby each medium inscribes in humans a return innervation, a technical "counterattack." Cf. Francesco Restuccia, *Il contrattacco delle immagini. Tecnica, media e idolatria a partire da Vilém Flusser* (Milan: Meltemi, 2021).

Corporialised Observer: Visual Pornographies and the 'Carnal Density of Vision'" (1995), Williams recognises in early stereoscopic and proto-immersive technologies the clear haptic value of the image that the devices allowed, insofar as they could make the viewer "touch with his eyes" a sexual and sexualised body, while denying the tactile resolution of the gesture. However, tactility is in a sense substituted by the more radical tangibility of erotic contact with the machine.

The material tactile experience and the posture required by these devices, as in the case of facial contact with a stereoscope or the kinetic relationship with a mutoscope, are central to the erotic charge of these experiences:

> Touch, in this case is activated by but not aimed at, so to speak, the absent referent. Though quite material and palpable, it is not a matter of feeling the absent object represented but of the spectator–observer feeling his or her own body. (Williams 1995, 15)

Thus, this haptic process is not exclusively directed at the phantasmatic subject of representation (in this case, an erotic and mostly female body) but is intricately intertwined with more complex proprioceptive processes. Hence, the new tactility of the stereoscope and peep media is linked to the "corporealised observer" who not only handles the image but also is somatosensorily engaged with the apparatus of vision. In this sense, these early uncomfortable media already give us an idea of the erotic appeal of the typically post-human intersection between the (sexual) body and machine. Interestingly, as early as the nineteenth century, these technologies offered an alternative to the voyeuristic forms typical of the interpretation of pornographic images, inaugurating a spectatorship, that of the haptic observer, based on an erotic interaction with the image, the machine, the represented bodies and one's own. Accordingly, the mutoscope becomes, as Williams points out, the real sexual protagonist of *A Country Stud Horse*. This pornographic film from the 1920s (fig. 4) demonstrates the strong eroticism that an uncomfortable medium exerts on its user, further titillated by the kinetic-gestural valence typical of the device, which determines a double fetishisation: that of the moving image and its control by a conscious gesture and the inevitable para-masturbatory involvement that such motions imply.

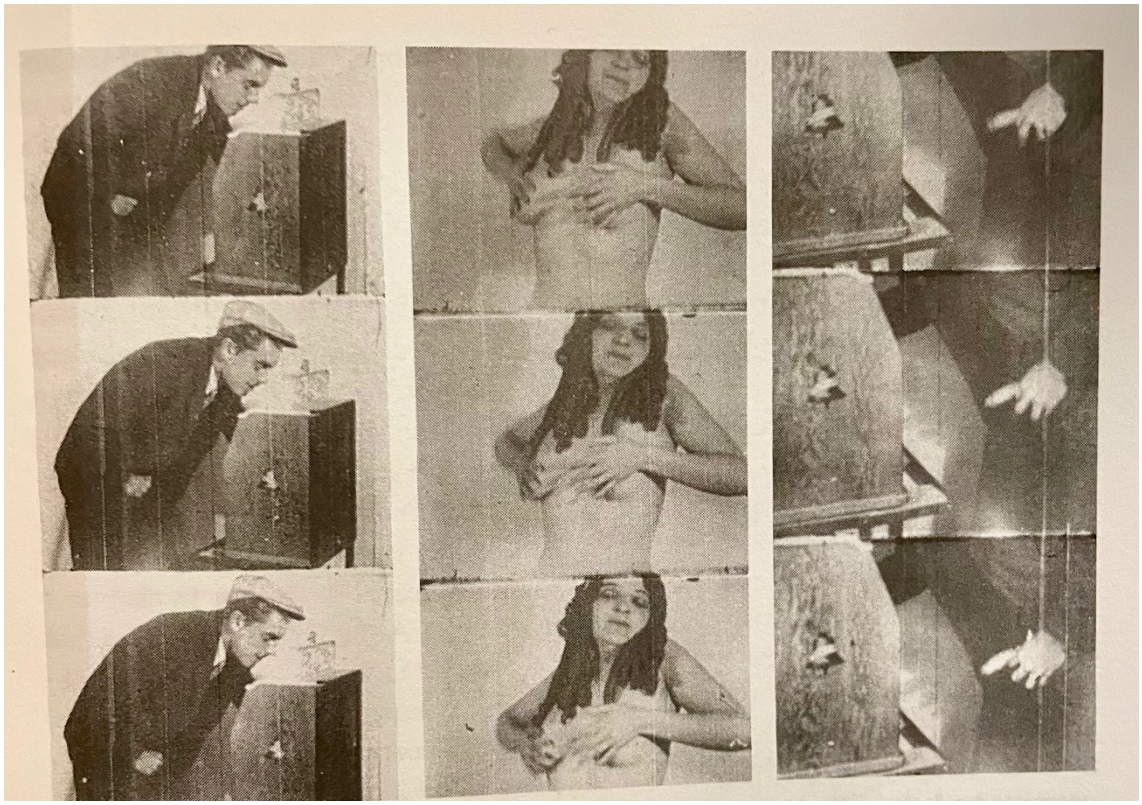

Figure 4 Frame enlargements from A Country Stud Horse *(c.1920), in Williams (1995, 19).*

This is a paradigm that, especially from the perspective of the historical evolution of the gendered gaze in the erotic-pornographic sphere, cannot but risk a parallelism between the control of the kinetic illusion and that of the female body reproduced in it. This interpretive model with a large critical fortune will be discussed in detail later.

Consequently, uncomfortable media interact with the broad ecosystem that has effectively challenged the device of rectitude par excellence: the frame. To further circumscribe this media identity, one could say that the tradition of uncomfortable media is closely related to those artistic and narrative operations that have also involved an overflow of the image from its ontological perimeter. This process has historically been active, as many authors have noted (Grau 2003; Liptay and Dogramaci 2016; Pinotti 2021; Modena 2021), since the origins of environmental representations. From Palaeolithic caves (Fontana and Pinotti 2021) to the camera picta to the immersive installation, a certain type of image has always challenged its boundaries and the normative postures usually associated with it. The history of art as a disciplinary field in which a straight inclination and posture have undoubtedly played a central role in defining the museographic and museological canons of framed art displays confirms the predominance of a posturological-perceptual model suited to an upright posture. This

system is openly and consciously challenged by twentieth-century art, starting precisely from the frame and, one might add, from a true *frameology* (Pinotti 2021). It is engaged in a progressive but constant deconstruction of this inclination, promoting a fraying open to different perceptual and postural forms. This is the case, for instance, of El Lissitzky's *Cabinet of Abstraction* (1928) (fig. 5), which is mentioned here precisely because it is both an immersive environment and an exhibition device that leads its visitors to perform a postural choreography corresponding to the neo-plastic abstractionism of the time. Supported by a careful study of materials, the *Cabinet of Abstraction* is also an open challenge to the emerging white cube paradigm, its postures and politics (O'Doherty 2012). Here, the artistic experience and the history of art and its environmentalisation do not define a dominant axis of analysis but a constant theoretical counterpoint with the intention of breaking down the disciplinary perimeters between "high" and "low" or "popular" production, a category, the latter, as mentioned above, to which the erotic-pornographic is often ascribed.

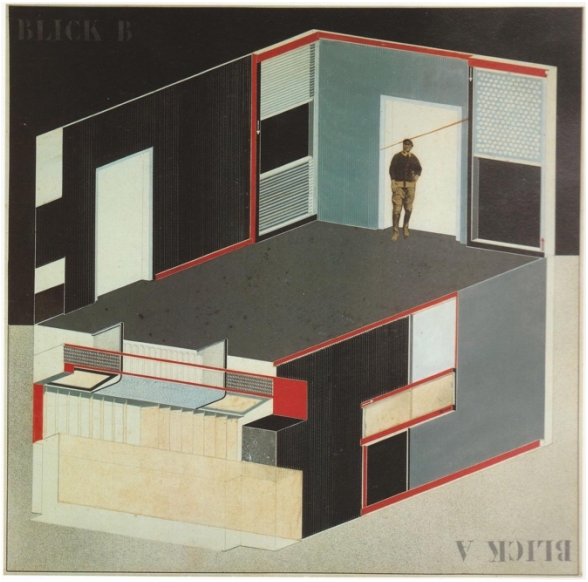

Figure 5. El Lissitzky, Entwurf Schaukabinett Museum Hannover – Wand 3 *(Design for Exhibition Room in the Hanover Museum), 1926, Harvard Art Museums/Busch–Reisinger.*

1.3 Postural *Metapherein*: From the Physical to the Moral

If, in this first part, the posturological and uncomfortable definition of media has been mainly concerned with its consequences in the construction of a specific immersive mediology, one might wonder what theoretical lines of a critical and phenomenological

nature these aspects activate. The theoretical relevance of posture in the philosophical and feminist spheres is certainly central to several works, particularly in the analysis that Adriana Cavarero conducts in her *Inclinations. A Critique of Rectitude* (2016). Cavarero's volume has the merit of condensing analytic strategies to construct a theoretical framework that identifies in inclination and obliquity a symbolic form with strong theoretical, critical and political potential. Her critique of rectitude delves into the forms of reputational and performative constructs. In fact, Cavarero starts with an essential semantic shift of the concept and the notion of inclination:

> [A]ccording to modern dictionaries, when the term moves from geometry to common speech and, even more, to philosophical language, it makes a crucial leap, from its proper sense to a figurative sense – which, as usually happens, inevitably complicates the situation (Cavarero 2016, 2).

This passage introduces us to the broader ethical-moral implications of the term. Transmigrating from geometry to the sensible world, inclination acquires a changing but precise connotation:

> [I]n moral treatises, for instance, it is easy to encounter a conflict between "good inclination," which is to say "an innate or acquired disposition to act virtuously," and its opposite, "bad inclination," a "natural and acquired propensity to behave dishonestly," which is to say, in a depraved manner. (Cavarero 2016, 2)

Correspondingly, posture and inclination become, in Foucauldian terms, discursive devices that condense an interpretive system of reality and synthesise the historical and, therefore, shifting moral coordinates of a given social group. Cavarero's posturological approach always considers the visual and literary as a performative matrix in that they, whether artworks or literature, do not simply reflect a certain socio-political status quo but rather provide tools that exert a strong prescriptive and therefore normative influence on reality. Here, posturological, moral and, one might add, erotic and mediological rectitude carries with it a complex system of attributes that can potentially help us to rethink its main paradigms. Cavarero's methodological tool extracts from inclination an avowedly feminist perspective of investigation, condensed in the figure and representation of the

inclined mother on her child[11] as a pharmakon of hetero–patriarchal verticality. This tool can be useful here precisely for its mediological transfer. What might the postural inclination we have in relation to certain material devices imply about the power dynamics and socio-political constructions imposed on or enacted by the Western observer? Could it be said – transferring Cavarero's perspective to media theory – that the obsession with the inclination of the upright posture, in this case both material and symbolic, has played a central role in determining the oscillation of medial emergence and immersion that has characterised the last two centuries of technological history?

Therefore, in this sense, uncomfortable media consciously disorient forms of postural rectitude and define perceptual conformations that, as we have witnessed with Cavarero, may have a broader theoretical-political bearing relevant to a hypothetical history of obliquity and perceptual immersion.

Cavarero's posture and the device of obliqueness owe much to the determination of posture as a symbolic form. Indeed, it is at the centre of various reflections that have explored its characteristics, from biology (Lovejoy 2005) and psychology (Schilder 1935) to philosophical anthropology (Huxley 1863; Darwin 1871) and phenomenology (Merleau-Ponty 1945). Among the most acute and precocious contributions in this sense is Erwin Straus' (1952; 1965). Straus records the essential semantic shift of the physical and moral qualities of an upright posture. In Straus' analyses, the upright posture characteristic of humans retains profound performative connotations in that it is not only conquered evolutionarily by *Homo erectus* but also re-performed on an ontogenetic level in the growth of the individual and in everyday actions. This constant conquest of upright position is a good example of the ambiguous nature of postural performance. It is a biological conformation determined by vestibular characteristics and anatomical structures. Simultaneously, it is always a historical and cultural construct that, while semantically translating the metaphor – which etymologically transports (*phero*) beyond

[11] Cavarero's concept of motherhood deserves further specification. The figure of the mother, as a geometric–ethical form of inclination towards the dependent other, offers an alternative to the philosophical subject, proposing a form based on relationality. However, Cavarero's position, fully aware of the criticality of the essentialism that the care work associated with the maternal subject entails, seems to maintain a criticality on the issue. Indeed, Huegel (2017) notes that a posturology based on the maternal figure seems to reiterate a precise patriarchal model that entrusts the female figure with the work of care, while the author's focus on kinship risks limiting the power of the concept. Compared to Arendt's abstract consideration of the newborn, Cavarero's mother "risks overstretching this category when it is supposed to cover relations that are not kinship-based but are purely political" (Huegel 2017, n.p.).

(*metà*) a meaning – continues to construct a communicative and, more broadly, ideological system of bodily figures. Straus is very clear on this point, describing the double meaning of the term in the incipit of his *The Upright Posture* (1952):

> Obviously, upright posture is not confined to the technical problems of locomotion. It contains a psychological element. It is pregnant with a meaning not exhausted by the physiological tasks of meeting the forces of gravity and keeping the equilibrium. (1952, 530)

The semantic fertility of posture thus activates the dichotomy between the anatomical and the moral, leading us, Straus continues, "to praise an *upright* man; we admire someone who *stands up* for his ideas of rectitude" (idem, emphasis mine). However, the semantic translation of the metaphor does not end with the simple allegory but continues to phenomenologically construct a being in the world characterised by a predominant expression of agency over the world and different degrees of distance, both enabled by the verticalisation of the perceiving subject. As we will see, the possibility of expressing agency, which is at the heart of Merleau-Ponty's reflections on the construction of posture, is also a key point for Straus:

> Because upright posture is the 'Leitmotiv' in the formation of the human organism, an individual who has lost or is deprived of the capacity to get up and keep himself upright depends for his survival completely on the aid of others. Without their help, he is doomed to die. A biologically-oriented psychology must not forget that upright posture is an indispensable condition of man's self-preservation. (Straus 1952, 532)

Straus' unabashedly *ableist* subject[12] derives from the upright posture its conditions for evolutionary survival. However, the peculiarity of an upright posture, unlike other physiological functions, such as breathing and heart rate, constitutes a recurring performative challenge to the human, resisting the physical laws of gravity. For Straus, the upright posture is a *counteraction*. It is in this friction with the state of quadrupedality

[12] On the question of ableism and postural phenomenology compare Thomas Abrams, "Is Everyone Upright? Erwin Straus' 'the Upright Posture' and Disabled Phenomenology," *Human Affairs* 24, no. 4 (January 1, 2014), https://doi.org/10.2478/s13374-014-0249-2.

and the gravitational forces of the Earth that humans challenge a supposed "naturalness." In this sense, the causal effect proposed by Straus is very clear and, in some ways, radical:

> Considering man in his upright posture, we do well to envisage the possibility that, not society, has first brought man into conflict with nature but that man's natural opposition to nature enables him to produce society, history, and conventions. (Straus 1952, 536)

A position affirms the profoundly agentic nature of posture beyond allegory and semantic transfer. This is not only a condition for the survival of the biological individual, but also, above all, a necessary system for the constitution of "civil society." Reversing the causal system of Hobbesian origins, Straus recognises precisely in the "unnaturalness" of the upright posture the aetiological root for the construction of material and discursive institutions, such as society, history and social conventions. This kind of evolutionary interpretive system links postural opposition to gravity to a deeper constructivist matrix of human identity. However, the conquest of the upright position is never definitive: In addition to the performative implications of an everyday nature (getting up in the morning), postural erection is constantly threatened by decay and physical fall, which always symbolises a form of moral decline. Thus, as a separation from nature and a condition of human agency, elevation becomes the substratum for its positive connotation in the moral and broader social sphere. The elevation of the human, as a process of emancipation from nature and a symbol of rectitude, also shares a broad system of visual and discursive representations that make such a movement its fulcrum.

The ancient Platonic tradition of the celestial tree[13] translates the same symbolic form of the body: man, elevated similar to a tree, loses the "natural" physiology of botanic identity by extending his roots not towards the fertility of the earth but towards the sky. Reversing the biological structure, the *homo* as *arbor inversa* prescribes an architecture of the body

[13] On the broad issue of the celestial tree or inverted tree, see: Maria Luisa Gatti, "Piante Celesti Con Le Radici Lassù: Una Metafora Dell'esistenza Umana Nel Timeo Di Platone," *Rivista Di Filosofia Neo-Scolastica* 107, no. 1-2 (2015): 111–18; Sara Ritchey, "Spiritual Arborescence: Trees in the Medieval Christian Imagination," *Spiritus: A Journal of Christian Spirituality* 8, no. 1 (2008): 64-82, https://doi.org/10.1353/scs.0.0014; Umberto Eco, *Dall'albero al Labirinto* (2007; repr., Milan: *La Nave di Teseo Editore*, 2017); Pippa Salonius and Andrea Worm, *The Tree: Symbol, Allegory, and Mnemonic Device in Medieval Art and Thought* (Turnhout: Brepols, 2014); Stefano Salzani, "Le Radici in Alto," *Rivista Di Studi Calabriani* 2 (2002): 55-96.

that, only through elevation and the rejection of physiological function, can aspire to connect with the sphere of the divine. The Platonic origin of the figure of the man-tree retains, as does Straus, a strong postural connotation. Indeed, in a passage of *Timaeus*[14] (90 a-b), Plato describes the structure of the body as a "celestial plant" whose head, the seat of the demon attributed by Theos, extends into the roots, becoming – through the practice of philosophy – an organ of nourishment for the divine and a simultaneous instrument of postural rectitude:

> This, of course, is the kind of soul that dwells, as we said, in the summit of our body, and it raises us up from the earth towards the heavenly region to which we are naturally akin, since we are not soilbound plants but, properly speaking, creatures rooted in heaven. For it is from heaven, where our souls originally came into existence, that the gods suspended our heads, which are our roots, and set our bodies upright. (Timaeus, 90 a-b)

The posturological *metapherein* is again configured as a chiasmus between the physical and the moral, where the rectitude of the tree-man is constructed precisely through philosophical exercise.[15] It is no coincidence that the botanical-posturological metaphor reappears in the description of those men who do not devote themselves to philosophy "and instead follow the example of those aspects of the soul that reside in the chest" (Timaeus, 91e). Interestingly, in Plato, the physical figures of these subjects, far removed from the mental exercise located in the head and rooted in the sky, are expressed with oblique postures that dangerously reflect an involution towards the mundane:

> This way of life bowed their upper bodies and heads down, by the principle of natural affinity, until their forelimbs rested on the ground, and their heads became elongated or otherwise oddly shaped, depending on how an individual's revolutions shrank from disuse. (Timaeus, 91 e)

[14] The passages quoted refer to the edition: Plato*, Timaeus and Critias*, trans. Robin Waterfield (Oxford: Oxford University Press, 2009).

[15] "But anyone who has devoted himself to learning and has genuinely applied his intelligence – which is to say, anyone who has primarily exercised his intellect – cannot fail to attain immortal, divine wisdom, if the truth should come within his grasp." (Timaeus, 90 b-c)

According to the principle of natural affinity, a model of biosomatic isomorphism, a subjectivity that does not practise philosophy, implodes into a bodily pattern that abandons the conquest of the upright station and returns quadruped, following the association between postural proximity to the earth and moral bestiality:

> This explains why animals of this kind have four or more legs, and the more mindless they were, the more such underpinning the gods gave them, to draw them even closer to the ground. As for the most mindless of them, the ones with their whole bodies level with the ground, the gods made them without feet, since they no longer needed them at all; these are the creatures that crawl along the ground. (Timaeus 92 a)

The Platonic roots of this philosophical posturology thus seem to introduce the semantic shift noted by Straus, especially in its association with distance from the ground, understood as the surface of the earth but also as the natural mundane. Therefore, an oblique inclination or posture can only subjectivise a morally ambiguous identity.
Aristotle, too, albeit in the direction of immanence, traces the Platonic metaphor of the inverted tree and upright posture. As pointed out by Salzani (2002) and Sbacchi (2021), in *On Youth and Old Age, On Life and Death*[16] there is a clear moral connotation of the upright tree-man:

> The part by which food enters we call the upper part, considering it by itself, and not in relation to the surrounding universe; the lower part is that by which the primary waste product is voided. Plants are contrary to animals in this respect. Because of his erect carriage man of all living creatures has this characteristic most conspicuously, that his upper part is also upper in relation to the whole universe, while in other animals it is midway; but plants, as they are immovable and take their food from the soil, must always have this part below. For the roots in plants correspond to what is called the mouth in animals; the part, that is, by which some absorb their food from the earth, and others from each other. (*On Youth and Old Age*, 467 b-468 a, 412)

[16] We refer to this edition: Aristotle, *On the Soul, Parva Naturalia, on Breath*, trans. W. S. Hett (Harvard: Harvard University Press, 1964).

Taking up the vertical topos of vegetal identity, Aristotle recognises the same inverted structure in human posture. Starting from the physiological pattern of nourishment, it derives a precise system that connects humans more effectively to the universe precisely because of their postural proximity.

Even in the Roman context, this topos of wide fortune finds its own terrain of expression. Indeed, Pellegrino (1964) underlines how Cicero, in *De natura Deorum,*[17] recognises in the upright posture both a divine gift and a condition of possibility for the exercise of thought:

> First, she [nature] has raised them from the ground to stand tall and upright, so that they might be able to behold the sky and so gain a knowledge of the gods. For men are sprung from the earth not as its inhabitants and denizens, but to be as it were the *spectators* of things supernal and heavenly, in the contemplation whereof no other species of animals participates. (Cicero, *De Natura Deorum* II, 257-259)

The interest in Cicero's posture for our analysis also lies in the *spectatorial* connotation of the upright human. Man, unlike other creatures, is not merely an inhabitant of the world but, thanks to his postural elevation, becomes a unique spectator *rerum caelestium.* Cavarero (2014, 85) also reminds us that the topos of rectitude is hinted at and rediscovered in Christian morality with texts that, like Paciuchelli's, recover precisely the botanical scheme as a model of paradisiacal salvation, the vertical *hetero-topos* par excellence.[18] Thus, inclination and posture seem charged with an agency beyond allegory precisely when they are concerned with a concrete and intellectual distancing from the natural and its symbols. Indeed, even the Christian theological tradition, in its interpretations of creation, recalls the importance of upright posture precisely as the first

[17] We refer to the English edition: Cicero Marcus Tullius, *De Natura Deorum; Academica; with an English Translation by H. Rackham* (London: W. Heinemann, 1933).

[18] Paciuchelli's text also specifies another characteristic of postural inclination and distancing, that related to the direction – to the right or left – of the subject-tree's growth. In another *metapherein* with very ancient roots, Paciuchelli specifies how a leftward inclination would imply a sign of moral degradation against the *righteousness of the* '*right*' that is always also the realm of the *just*: "The symbol that explains man is called tree. '*Homo est arbore inversa* [Man is a reverse tree],' said Plato. '*Video homines sicut arbores ambulantes* [I see men that are walking around like trees],' said the blind man in the Gospels. Just like the Death's sickle has to cut the tree, and hence it will necessarily fall on one side or the other, either to the right of salvation, or to the left of damnation, and so will be forever. If you want to foresee on which side it will fall, observe on which side it inclines. If since youth it leans on the side of vice, it will fall into Hell, says St. Bernard." Angelo Paciuchelli, *Lezioni Morali Sopra Giona Profeta*, Vol. 1 (Venice: Paolo Baglioni, 1664): 190, quoted in Cavarero (2016, 60).

form of distancing from the bestial and the *conditio sine qua non* of cognitive expression. In the field of Christian theology, Laurentius Haechtanus also returned to the metaphor of the upright tree in his *Mikrokosmos or Parvus Mundus* (1579). [19] In an illustration by Gerard the Jode (fig. 6) entitled *Homo Arbor Inversa*, the association with the uprightness of plants is even clearer. Contained in a hollow tree as the envelope of the subject, the human is fertile precisely because of his verticality, emphasised by the divine gesture that, in Platonic terms, dictates the direction of growth. In this case, the moral condemnation of the slanting posture is derived from the degree of fertility of the vertical tree subject, as confirmed by the quotation from the corresponding drawing: "*omnis enim arbor qua non facim fructum bonum excidetur et in ignem mittetur*."[20]

Figure 6 Digital scan of Laurentius Haechtanus, Mikrokosmos or Parvus Mundus *(1579; repr., Frankfurt: Iacobu[m] de Zetter, 1644), 35.*

Laurentius Haechtanus, quoting Aristotle, affirms the importance of the uprightness of the plant-human figure, which, if well nourished by the exercise of thought and prayer, will bear only good fruit. Conversely, a badly rooted "oak tree" will bear little fruit and will have to be cut down and burned. The link between the erection of the posture and the

[19] The edition examined here is Laurentius Haechtanus, *Mikrokosmos or Parvus Mundus* (1579; repr., Frankfurt: Iacobu[m] de Zetter, 1644).
[20] The wording, in Latin vulgate, is extracted from the Gospel according to Matthew (3.10), https://www.vatican.va/archive/bible/nova_vulgata/documents/nova-vulgata_nt_evang-matthaeum_lt.html [last accessed 28/04/24].

moral fruitfulness of the subject also reiterates the need to understand the causal sequence between the two elements. Are humans being erect because they are gods among beasts and thus chosen by the divine to be a princely creature? Conversely, is it in their verticality that they can erect beyond the mundane and become cogitating subjectivities?

In his history of posture, Gilman (2018) recovers the broad debate on this question, as in the case of Johann Gottfried Herder. In *Ideas for the Philosophy of the History of Humanity* (1784-91), starting from positions already treated in *Genesis* (1:20–25), Herder defines, as Straus will do, the upright posture as a primary and necessary element for the development of reasoning. Again, the focus is the perceptual and moral distance that an upright posture allows man:

> The form of man is upright: in this he is singular upon the earth... to the human species alone is this position natural and constant. All the muscles acting in this position are adapted to it. The calf of the leg is enlarged: the pelvis is drawn backward: the hips are spread outwards from each other: the spine is less curved: the breast is widened: the shoulders have clavicles: the hands have fingers endued with the sense of feeling: to crown the structure the receding head is exalted on the muscles of the neck: man is... a creature looking far above and around him. (Herder 1791, 67-8)

As Herder argues, this system derives a precise *forma mentis* from the material conformation of the structure of the body. The subject can act in the world, specifically due to its vertical distance from the ground. For Herder, human verticality is clearly a gift of the Creator, who made man "of beasts the god" (Herder 1791, 68). A widespread interpretation linking the divine gift of upright posture with the possibility of sentience can be found in other cases in the literature. For example, in *Paradise Lost* (1667), Milton emphasises how man's uprightness, a primary gift from God, enables a reverential connection with the Creator:

> [A] creature, who, not prone
> And brute as other creatures, but endued
> With sanctity of reason might erect
> His stature, and upright with front serene

> Govern the rest, self knowing; and from thence
> Magnanimous to correspond with Heaven,
> But grateful to acknowledge whence his good
> Descends, thither with heart, and voice, and eyes
> Directed in devotion to adore
> And worship God Supreme, who made him
> Of all his works. (7.506-15)

The posturological and moral dimension, then, is primarily concerned with the distance that allows man not only to ascend towards the divine, but also to distance himself from the earthly and, consequently, to elevate himself morally and to perceive the world *at a proper distance*. This approach confirms the not merely allegorical nature of the postural system and, to return to Straus, finds an important connection with the phenomenology of posture and bodily figures. Indeed, Straus explicitly describes the triple distance – from the earth, from things and from "fellow men" – that an upright posture allows. Interestingly, this form of postural distancing is secularised in Straus as an action that enables subjectification in development: In parallel with the conquest of the upright posture and its agency, the child stops referring to himself or herself by name and begins to use the pronoun "I." The vertical posture, as vertical as the graphic sign of the English first-person singular, abstracts the subject and allows one to "oppose [oneself] to everyone else, who is nevertheless my fellow human being" (Straus 1966, 337). Straus' interpretive lens, far from Platonic prescriptions, recognises that the distancing of upright posture "can be experienced either as a gain or as a loss" (idem). Thus, this dichotomy opens the possibility of considering the pleasures of oblique disorientation beyond the moral condemnation reserved for it in antiquity. It is no coincidence that, precisely in the nature of the performative effort of verticality, man appreciates "resting, relaxing, yielding, lying down, sinking back" (Straus 1966, 538). Among the forms of this rest from the upright posture, there is a sensual one: "Sex remains a form of lying down, or as language says, of lying or sleeping with" (idem). Straus' focus on sexual posture is further explored in another text (1965), in which erotic desire is included in the pattern of distancing and approaching postures:

> Perhaps the organisation of the visible world into near and far reaches its completion only with sexual maturity and the ardent longing for the embraceable proximity of a partner. (Straus 1965, 668–669)

The association between an erect posture, its possible inclination and sexual desire is indeed a particularly fertile topos for this investigation and is, as we shall see, also at the centre of Merleau-Pontian reflections. What seems relevant to Straus' posturological and erotic approach are precisely the postural interstices that the author recognises in the performance of the figures of the oblique body. The apparent abstraction of the perceiving subject, standing on and at a distance from the world, does not necessarily equate to a gaze dedicated to control and objectification. The distanced gaze, considering the broad context of the aerial view, is certainly at the heart of the typical modernist attitude, which, for example, towards the city and the dwelling, has often echoed sentiments of shrewd control and urbanist expressions dedicated to the sanitisation of life and the citizenry.[21] While this sentiment is broadly confirmed by much of Straus' thought, the author mitigates an overly monolithic interpretation. Distancing oneself from things also means devoting to an affective contemplation that finds in distance the right medium for appreciating the other (be it subject or object):

> The distant does not set off a region which might be approached and reached in the future. The distant opens itself to our gaze in contemplative regard, not in aggressive action; it opens itself in our looking over there, not in going over there. The first great abstraction of suchness is achieved in the beholding gaze: the *eidos* discerned from the *hyle*. Together with and through the suchness we comprehend what reveals and conceals itself in it. (Straus 1965, 669)

Just as postural verticality might imply an affective resonance with the distant other precisely through a contemplative stance, the inclination and challenge to bodily uprightness entail the shortening of physical and emotional distance. As Arendt (2003, 81) recognises, "every inclination turns outwards, it leans out of the self in the direction

[21]On the broad scope of aerial vision in architecture and urbanism, see: Peter Adey, *Aerial Life* (Hoboken, New Jersey: John Wiley & Sons, 2010); Mark Dorrian and Frédéric Puosin, eds., *Seeing from Above. The Aerial View in Visual Culture* (New York: Palgrave Macmillan, 2013); Nathalie Roseau, *Aerocity, Quand l'Avion Fait La Ville* (Marseille: Parenthèses, 2012).

of whatever may affect me from the outside." Similarly, Straus emphasises the potential of the challenge of rectitude:

> Therefore, the strict upright posture expresses austerity, inaccessibility, decisiveness, domination, majesty, mercilessness, or unapproachable remoteness, as in catatonic symmetry. Inclination first brings us closer to another. Inclination, just like leaning, literally means "bending out" from the austere vertical. (Straus 1952, 532)

If on the one hand, the inclination also determines a clear tendency towards the act of caring despite the vertical rigour, on the other, from a purely perceptual perspective, Straus envisions a gaze inclined towards the object of perception as a form of *childlike* behaviour. Indeed, in his focus on the stages of human development, the author emphasises the link between the predominance of vision and upright posture. This pair is conquered in cognitive maturity, as is the bipedal upright posture: "The contemplative gaze develops in a process of maturation" (Straus 1965, 669).
According to Straus, in the crawling phase, before the actual standing stage, the human tends to subordinate vision to touch in a hierarchy of perception that favours the near object that can be reached by gesture:

> The conquest of distant space passes through a series of phases. At first the distantness of things is not accepted. The small child approaches the visible, though remote, things until he can put his hand on them. Only in a second phase extending over many years does this "grabbing" compulsion fade away as the upright posture is secured. For a long time however the child's interest remains confined to things that lie within his grasp. (Straus 1965, 669)

The evolutionary condition of the percipient subject in Straus helps us define several issues that, as we shall see, will be central to the (erotic) interaction with the immersive devices examined in this thesis. Indeed, the haptic intermediate position described by the author seems to define a precise parallel with the dynamics allowed or required by uncomfortable media. Immersive and wearable technologies are devices that demand not only a proper tactile interaction and inclined posture, but also a haptic relationship with

the three-dimensionalised image – as in the case of stereography. This characteristic helps clarify the reputational economy associated with these devices. It is no coincidence that these media have often been associated with two spheres that implicitly refer precisely to the haptic quality they promote, especially in their first material manifestations in the nineteenth century: the educational-scientific context[22] – which exploited the playful quality of the optical illusion – and the erotic-pornographic framework – which, as we shall see, uses the solidity of the image for sexual arousal. For Cicero, as we have seen, postural elevation is the element that allows the human to become a spectator in the "con-templation"[23] of the divine. In a similar secularised sense, for Straus, it is only through verticalisation that the perceptual predominance of vision necessary for the definition of the subject is achieved. Recognising the extreme fertility of an oblique posture and perception, however, allows us to consider the agency of perceptual forms that challenge the rectitude of the Cartesian optical subject. Immersion as performance, again following a discursive metaphor, envisages precisely a figure of the body encoded in the action of diving into the liquidity of the image. It is this instability that is inherent in the apparent postural rectitude that Straus describes in his reflections:

> The space that surrounds me is not a piece of neutral, extended manifold, determined by a Cartesian system of co-ordinates. Experienced space is action-space; it is my space of action. To it, I am related through my body, my limbs, my hands. The experience of the body as mine is the origin of possessive experience. (Straus 1952, 545)

The upright posture, in its counteraction, is always threatened by the instability of a fall. The movement of walking, another point of interest in the author's phenomenology, requires a kinetic form based on the challenge to balance. However, spaces of movement and kinetic action are where human agency, in the broadest sense, is fully expressed. To

[22] On this issue, see: Meredith A. Bak, "Democracy and Discipline: Object Lessons and the Stereoscope in American Education, 1870–1920," *Early Popular Visual Culture* 10, no. 2 (May 2012): 147-67, https://doi.org/10.1080/17460654.2012.664746.

[23] The *contemplative* aspect is also of particular theoretical fruitfulness, especially when read in reference to its Latin etymology. Indeed, distancing and the construction of a para-frame device are central to the distanced abstraction of the upright posture from a perceptual perspective. On this issue, see the insightful interpretation of the *templum* as a form of the perimeter of the visible field in Anna Caterina Dalmasso, "Reframing Immersive Environments through the *Templum*: An Archaeology of the Frame," *Imago: Studi Di Cinema E Media* 20, no. 2 (2019), 81-99.

make this agency effective, man must reconfigure the space around him, as we shall see with Merleau-Ponty, deconstructing the fixity of the Cartesian scheme, stable par excellence.

What seems particularly relevant to the media posturology proposed here is the possibility of conceptualising this interpretive device as a lens of analysis that intersects the physical, the phenomenological, the moral and the political. Indeed, the system expressed thus far recalls the highly active nature of perceptual performance. When dealing with media forms and technologies that require postural discomfort – understood as an addition to the challenge of rectitude – it opens the possibility of interpreting immersion in the haptic image and contact with the device as a process of disorientation, again, postural, physical and moral. This triangulation best explains the social status of the devices we will examine, often associated with the morally ambiguous context of attractions in which the erotic and the pornographic insinuate themselves with overbearance. An intersection, the latter, that renders obscene not only the sexually connoted image but more generally the figures of the body that these media demand, implicitly challenging the verticalisation that for centuries has determined the discipline, in the Foucauldian sense, of the good spectator. If we also consider as implicit in the upright posture the distance it prescribes, as Straus argues, from the ground, from objects and from fellow men, we cannot but add that the uncomfortable media, conversely, demand a relationship of proximity with the apparatus, the image and the entities[24] reproduced in it. Thus, the postural inclination towards the device seems to participate in the convergence, in the Benjaminian sense, of what is technically reproduced precisely from that optical frenzy determined by the advent of photo-stereographic technology.

In fact, Benjamin dedicates some fragments to distance, written in 1922-23,[25] which help us to further centre our intersection of postures, mediology and eroticism:

> These are two factors that may be as important for the structure and life of the body as other spatial categories (up and down, right and left, etc.). They are particularly prominent in the life of eros and sexuality. The erotic life is ignited by distance. On

[24] In the chapter on image-personhood (3.5), we will observe what precise agency the solidity of immersive and stereographic images provides in the "ritual" of erotic immersion.

[25] In Walter Benjamin, *Selected Writings, Vol. 1, 1913-1926*, ed. Marcus Bullock and Michael W. Jennings (Cambridge, MA: Harvard University Press, 1996).

> the other hand, there is an affinity between nearness and sexuality. (Benjamin 1922–23, 397)

Benjamin does not include a purely posturological perspective in his reflections. Notably, even in his case, there is an analysis that starts precisely from the moral connotation of distance, again focusing on a *metapherein* of meaning. Benjamin states the following:

> The phenomena associated with these [the concepts of nearness] were probably repudiated and downgraded thousands of years ago. – Furthermore, there is a precise relation between stupidity and nearness: stupidity stems ultimately from too close a scrutiny of ideas (the cow staring at a new gate). (Benjamin 1922–23, 397)

Once again, then, as with obliquity or postural inclination, proximity is metaphorically associated with "stupidity" in a further moral chiasmus that helps us to better understand the role of the body in relation to proximity media, such as those we will analyse. Moreover, Benjamin further emphasizes the quasi-magical danger of proximity in another fragment from the same years, where he writes hermetically that "the spell is the magic of proximity" (Benjamin 1922-23, 400). The association with the magic of the spell, as a gestural – and verbal – form that controls and influences the realm of proximity, further reinforces the connotation of those media that, precisely because of the posture and closeness they require, *enchant* the viewer with their own optical illusions. Benjamin continues with extreme clarity: "For this reason, nearness has become the realm of the uncontrolled, something that assumes a terrible form with extreme closeness" (Benjamin 1922-23, 400). Indeed, it is no coincidence that the nineteenth-century iconography (figs. 30-33) of immersion in optical devices is often associated with a form of fraud, of dangerous deception[26], which, precisely through technology, posture and proximity, makes the observer a fool or stupid, to recall Benjamin.

We have demonstrated how the metaphors of posture and distance contain an agency that far surpasses the allegorical. Following a highly performative conception of language,[27]

[26] The posturology examined here seems to participate in that morally ambiguous environment of "attractions" to which cinema will also be afferent, as analysed by Tom Gunning and André Gaudreault (Gaudreault and Gunning 1989, Gunning 1990, Strauven 2006).

[27] The concept of the performativity of language here follows Austin's (1966) classic interpretation. The performative value is further specified in the context of metaphor as a case of the translation of meaning and linguistic operativity. In this regard, see Andrew Ortony, ed., *Metaphor and Thought* (Cambridge:

we have thus highlighted and attempted to confirm how verticalised, abstract and distant body figures graft themselves with particular force onto the identity of the disciplined spectator. The disarticulated figure and posture – in the sense of disordered and twisted – prescribe, in their rejection of vertical rigidity, a different and potentially subversive possibility of perception.[28] Benjamin again warns us of the unexpected pleasures of proximity, asserting that "this all too close (mindless) examination of ideas is the source of an enduring (nonintermitted) beauty" (Benjamin 1922-23, 400). Applying this concept to a more immanent relationship with material devices and haptic images, the unexpected pleasures of these uncomfortable media, on the one hand, and the perceived moral danger they pose, on the other, become clear.

1.4 The Postures of Onania: Immersion and the "Invention" of masturbation

> Masturbatory pleasure was dangerous because it
> was a sham version of real pleasure: virtual-reality orgasm, we
> might say. It partook of the wickedness of subterfuge, fraud, fakery,
> the very opposite of natural transparency.[29]

For a complete medial and erotic posturology, one cannot but consider, among the body figures participating in this iconographic and moral ecosystem, that of the onanist. Besides the decomposed convulsion of the orgasm, the postural implosion implied by the performance of this "secret vice" had much to do with the moral connotation of verticality and, as we shall see, the immorality of the oblique immersion in the device. A focus on the posture of masturbation is essential here because of the nature and "intended use" of the materials being analysed, which – as far as can be known – are unabashedly imagined

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Cambridge University Press, 1993) and, in particular, George Lakoff's chapter, "The Contemporary Theory of Metaphor," 202-251.

[28]Benjamin, as Cavarero recalls, in a youthful fragment determines the "loving" role of inclination against the rational and upright subjectivity of Kantian-rooted ethics. This aspect further highlights the potential of the oblique, which for Benjamin rises to the highest degree of morality: "*Der Begriff der 'Neigung*,' *den Kant fur einen ethisch indifferenten oder wider-ethischen halt, ist durch einen Bedeutungswandel zu einem der hochsten Begriffe der Moral zu machen, in der er vielleicht berufen ist, an die Stelle zu treten, welche die 'Liebe' inne hatte,*" Walter Benjamin, *Gesammelte Schriften*, Vol. 6, ed. Rolf Tiedemann and Hermann Schweppenhäuser (1974; repr., Frankfurt: Suhrkamp, 1999), 55.

[29] Thomas Walter Laqueur, *Solitary Sex: A Cultural History of Masturbation* (New York: Zone Books, 2003), 220.

for the erotic pleasure of their observers. Laqueur (2004) traces the history and genealogy of masturbation and the processes involved in its connotation as a "moral vice." The link between modernity and attention to masturbation is defined by a symbolic turning point, that is, between 1712 and 1716 through a pamphlet under the explanatory title *Onania, or the Heinous Sin of Self-Pollution, and All Its Frightful Consequences, in Both Sexes, Considered, With Spiritual and Physical Advice for Those Who Have Already Injured Themselves by This Abominable Practice*. This hugely successful text, which underwent several revised editions, was instrumental in the moral and physiological construction of masturbation and became the main inspiration for neurologist Samuel Auguste André David Tissot's 1760 volume *L'Onanisme*. Both texts constructed a precise genealogy of masturbatory sin.

In fact, one of the first associations between the biblical story of Onan (*Genesis* 38:6-10) – punished by God with death for wasting his seed in an act of coitus interruptus – and masturbatory performance was made in the pamphlet of 1712-16. Laqueur's rich conceptual path, however, focuses on the moral condemnation of masturbation and provides us with a more subtle conformation. It is not simply a sin, as in Onan, related to the "wasting" of such a precious fluid as semen. The modern condemnation of masturbation – which began including female subjects – is linked to the antisocial and "delusional" characteristics of the practice. Unlike sexual action, where the movements of desire are directed towards other subjectivities, the secret vice is an action of the imagination, a relationship with oneself and the ghosts of the mind. Laqueur (2004, 210), thus, traces the main perceived dangers regarding the unnaturalness of the masturbatory act in the eighteenth century. The first aspect is the poisoning of the imagination, the main faculty of the modern subject, which is polluted to the point of producing phantasmal images that drive and participate in the masturbatory act: a profoundly antisocial action that not only challenges the Christian moral conception of sex as a sacred model of reproduction but also seems to produce a form of involution and implosion of the social subject towards a solipsistic relationship between the self, the imagination and genital manipulation. It is a model that, as the pamphlet of 1712-16 and Tissot's subsequent volume show, highlights the impossibility of institutional control of the activity, precisely because of its addictive and solitary quality, literally and symbolically hidden and, therefore, safe from prying eyes. This system, as is well known, is embedded in the

Foucauldian model of the *scientia sexualis* (see Section 2.1), and the disciplinary and discursive role of masturbation as a confessional practice which underpins the construction of the modern and contemporary subject.

However, what we want to emphasise here with regard to masturbation is its interaction with the iconographic, moral and posturological construction. The first indication of this proximity is provided by Hippocrates – quoted by Tissot as one of the few historical precedents for his diagnosis[30] – who links the *tabes dorsalis* to male libidinal and masturbatory excess.[31] The pathology, consisting of a progressive consumption of the dorsal column and the dorsal root of the spinal cord,[32] associated with the act of masturbation thus implied a progressive loss of postural verticality in favour of a degenerate implosion of the figure of the onanistic male body.

The perceived dangers of the secret vice were innumerable and included various derived pathologies, just as we have seen with the ancient risks – in Plato and Aristotle – for those who did not practise philosophy. The focus on onanism is multifaceted: on one hand, it defines one of those postures that are sexual, oblique and morally ambiguous. On the other hand, the onanist's posture is also one of immersion. As anticipated, the unnaturalness of the practice was not linked, as in antiquity, to the "simple" loss of semen in men and the lack of reproductive function of the act. Rather, its danger lay in the fact that it was a solipsistic practice – the product of a desire to immerse oneself in the false pleasures of the mind. As Tissot explains, "Men subject themselves to false wants, and such is the case of those addicted to self-pollution. It is imagination and habit that subject them; it is not nature" (quoted in Laqueur 2004, 213). According to Bienville, another protagonist of the anti-masturbatory crusade of the time,[33] imagination, when obscured,

[30] Laqueur (2004, 86) notes that the absence of extensive casuistry on the subject in medical physiology texts in antiquity confirms the modern construction of the binomial between masturbation and physical-moral degeneration.

[31] On the question of the Hippocratic root of the nexus, see Laurent Tatu and J. Bogousslavsky, "Tabes Dorsalis in the 19th Century. The Golden Age of Progressive Locomotor Ataxia," *Revue Neurologique* 177, no. 4 (April 2021): 376-84, https://doi.org/10.1016/j.neurol.2020.10.006; Francis Schiller, "Venery, The Spinal Cord, and Tabes Dorsalis Before Romberg," *The Journal of Nervous and Mental Disease* 163, no. 1 (July 1, 1976): 1-9, https://doi.org/10.1097/00005053-197607000-00001.

[32] The disease is actually caused by late-stage syphilis. See Jenish Bhandari, Pawan K. Thada, and Richard M. Ratzan, "Tabes Dorsalis," *PubMed* (Treasure Island (FL): StatPearls Publishing, 2021), https://www.ncbi.nlm.nih.gov/books/NBK557891/.

[33] De Bienville is best known for his treatise on nymphomania. See M. D. T. De Bienville, *Nymphomania, Or, a Dissertation Concerning the Furor Uterinus. Clearly and Methodically Explaining the Beginning, Progress, and Different Causes of That Horrible Distemper*, trans. Edward Sloane Wilmot (1775, London: J. Bew).

becomes “an artisan for the fatal rage of masturbation.” It is precisely the technical nature of the imagination – which is included in the artisan metaphor – that reiterates an essential element of the perceived moral danger of masturbation. It is also and above all unnatural because it is *learnt*: “Thus learning to masturbate came to be represented as a secular reprise of the fall as each innocent new generation of the young stood to be corrupted” (Laqueur 2004, 227).

On one hand, the learned unnaturalness of masturbation became oxymoronic with the unnaturalness of postural elevation through the philosophical-religious practice expressed above. On the other hand, as we shall see, the (apparently) acquired quality of knowledge required for the act resonated with the broader debates about the role of experience in the theory of three-dimensional vision. If imagination, no longer a natural faculty at the apex of the cognitive hierarchy, becomes a diabolical technology, the artisan of seductive and phantasmal images, one cannot help but wonder what role technical and media devices might have played in determining the triangulation between posture, masturbatory obscenity and imaginative immersion. The pornographic, understood as a *dispositif* participating in the definition of an erotic ecosystem that is also inhabited by masturbation, became “the moral nadir of imaginative fiction, the bad seed of a potentially wholesome family” (Laqueur 2004, 339). Among the technologies of imaginative fiction, some are particularly effective, as we shall see, in generating forms and gradients of absorption and immersion (in the image and story). In this regard, attention is often drawn to literature (Mason 2008; Schulkins 2014) offering very specific forms of erotic immersion long before the advent of the optical devices that we will later analyse. The focus here cannot be entirely on the issue of literary immersion, but it is important to understand its role by looking at its material, ergonomic and postural qualities. Independent reading as a propaedeutic form of solitary vice is a commonplace that was very much in vogue between the eighteenth and nineteenth centuries.

The vast literary production analysed by authors such as Steve Marcus (1964) shows a broad underground ecosystem of pamphlets, serials and newspapers dedicated to the erotic narrative.[34] The iconography of the female reader immersed in erotic tales and distorted by the convulsive postures of pleasure is a recurring topos in various illustrations and paintings. This is the case of the piece by Antoine Wiertz (fig. 7, 1853), which is

[34] Cf.: Peter Mendes, *Clandestine Erotic Fiction in English 1800-1930* (London: Routledge, 2016).

particularly dense with figures and symbolic forms that can help in defining the agency of immersion as an erotic and onanistic danger.

Figure 7. Antoine Wiertz, La liseuse de romans*, 1853, Musées royaux des Beaux-Arts de Belgique, Bruxelles.*

At the centre of Benjamin's last reflections,[35] Wiertz is an author of particular relevance in this analysis because of his ability to understand the relationships between art and optical technologies (Post 2014). In this case, the iconography proposed by the painter is a good example of the effects of immersion in a device such as literary volumes and erotic narrative. Certain elements are immediately evident: the point of view of the distorted

[35] Benjamin recognised in Wiertz's painting qualities a feature highly influenced by photographic technologies: "The world exhibition of 1855 offers for the first time a special display called 'Photography': In the same year, Wiertz publishes his great article on photography, in which he defined its task as the philosophical enlightenment of painting. This 'enlightenment' is understood, as his own paintings show, in a political sense. Wiertz can be characterised as the first to demand, if not actually foresee, the use of photographic montage for political agitation. With the increasing scope of communications and transport, the informational value of painting diminishes." Regarding the painter's panoramic qualities, he sought "To reflect rigorously on the particular pathos that lies hidden in the art of the panoramas. On the particular relation of this art to nature, but also, and above all, to history. How peculiar this relation was may be gathered from these sentences by Wiertz, whose painting, in fact, has a distinctly panoramic tendency" (Benjamin 1999, 529).

and orgasmic posture of the female figure is immersed in the imagination stimulated by the novel, to the point of living a hermetic experience, closed off by the claustrophobic walls and curtains that surround the narrow perspective of the composition. A closure underlined by two other elements: the mirror – a topos of fortune in erotic stereography, as we shall see – which not only multiplies the exposure of the female body for the pleasure of the painter and his viewers but also, more symbolically, determines a form of reflexivity of immersion and onanistic practice. Such immersion also determines the complete lack of awareness of the painting's protagonist with regard to the other overshadowed entity that inhabits the pictorial space.

The second female figure on the left is also ambiguous in her gestural performance: is she supplying or stealing the licentious onanistic literature? Bergman-Carton (1995, 119) interprets the figure as an *incubus* who provides the reader with material for masturbation. The female incubus and her gifts thus recall the learned nature of onanistic practice, which is considered abnormal because it is apparently far removed from the "natural" sexual instinct. Nevertheless, the gestuality of the same figure can also be read, probably with some interpretive effort, as a silent theft. This second interpretation resonates with a focus on the *spread* of the "onanistic disease." In fact, the lexicon of contagion in Europe at the time, and especially in Victorian England, intersected with various issues: scientific advances in sexually transmitted diseases and the direct control of subaltern women and sex workers as the main carriers of physical and moral contagion (Mason 2008, 29).

Moving to the realm of bodily figures and symbolic forms, the invention of onanism is, thus, inherently somatechnical: it technicalises the imagination, which becomes the machine of erotic absorption, and includes material *Apparatur* – visual and discursive – that participate in the bodily performance. Here, then, as we have seen with Baudelaire, an immersed perceptual posture defines a moral obliquity because it brings its observer closer to the image – whether technically reproduced, narratively described or the fruit of an undernourished imagination. Thus, deploying the notion of obliquity as a symptom and desire of proximity to the things of the world, we understand how the invention of onanism has defined a further layer of disciplinary discursiveness about the practices and postures of immersion. To be close to one's body, to explore it with erotic will, while imploding in and with a media device is to recall the mythical danger of Narcissus, killed by the elemental screen of his double, and the McLuhanian narcosis (1964, 45-53), which

has much to do with the onanistic blurring of the imagination. The secret vice – part of the Foucauldian devices of sexuality and power – partakes in the construction of the oblique subject, who is bent over uncomfortable media.

We have seen that the definition of these devices implies both contact with the machine and a form of absorption in the liquidity of the image. If we combine the experience of immersing ourselves in the medium with that of the masturbator, there seems to be a kind of affinity that once again goes beyond the regime of the allegorical. The fear and moral judgement of these technological forms, as we shall see, seem to be determined by an assonance with masturbatory gestures, especially in their erotic-pornographic declination. What is the mutoscope of *A Country Stud Horse* (fig. 4) or the stereoscopes (which we will analyse later) if not the technical realisation and medial prosthesis of the autarchic and solipsistic imagination of the onanistic performance? The essential part of the secret vice body figures also helps in understanding the moral panic and negative reputation of uncomfortable media. They, like masturbation, have the capacity to tilt and distort bodies, to absorb them in a deception of the mind – in this case, optical – that partakes "of the wickedness of subterfuge, fraud, fakery, the very opposite of natural transparency" (Laqueur 2004, 220).

The optical onanism of uncomfortable media thus underlines the association of these machines with the ambiguous morality of attractions. It is a context, the latter, with a clear class connotation, that multiplies the discursiveness of the moral agency of the popular, understood as the realm of touch, as opposed to the optical abstraction of the bourgeois subject. Thus, it is a system that associates immersion – in both the apparatus and onanistic imagination – with the "divorce" of subjectivity from all forms of social order, "an old-fashioned mercantilist's dream and a moralist's nightmare" (Laqueur 2004, 220).

1.5 The Phenomenology of Erotic Postures: Gendered Performances

The figure of the onanist, the association between literature, femininity and erotic absorption begin to underline the importance of locating the subject of this bodily performance more precisely, in order to avoid the risk of a blatant tendency towards a discrete abstraction of its identity. This aspect has, as anticipated, been the subject of extensive criticism in the context of feminist phenomenology, with the precise intention

of situating the perceiving subject and avoiding forms of perceptual universalisation that are always dangerously congruent with the subject who, in a given context, performatively resides in the position of privilege. In the desire to introduce a situated medial posturology, it seems particularly important to trace certain passages of the phenomenological approach to posture and its feminist and queer critiques.

An essential contribution to the discourse on verticalisation and its entanglements with eroticism is certainly that of Merleau-Ponty (1945; 1968). In the pages of *Phenomenology of Perception*, there is indeed explicit attention to bodies and sexual atmospheres, as confirmed by the paragraph "The body in its sexual being," which is central to the definition of a cultural statute of the sexual and its definitive detachment from an assumed naturalness. As is well known, this perspective will be invoked by de Beauvoir in *The Second Sex* (1953) precisely to confirm the cultural construction of female subjectivities. However, Merleau-Pontian's indispensable contribution to a mediological posturology is, as we shall see, not without its problems if, as we intend to do here, we wish to maintain a constant theoretical tension with an analysis of the gendered incorporation of the percipient observer. The need for a feminist and thus gendered and situated phenomenology is confirmed by Judith Butler, who in "Sexual Ideology and Phenomenological Description: A Feminist Critique of Merleau-Ponty's 'Phenomenology of Perception'" (1989) criticises the abstraction of Merleau-Ponty's subject. According to Butler, the universalisation of the subject of perception conceals a blatant masculine identification:

> The ideological character of *Phenomenology of Perception* is produced by the impossible project of maintaining an abstract subject even while describing concrete, lived experience. The subject appears immune from the historical experience that Merleau-Ponty describes, but then reveals itself in the course of the description as a concrete cultural subject, a masculine subject. (Butler 2022, 184)

The masculinity of the subject in Merleau-Ponty is further confirmed, Butler continues, by the master-slave relationship that characterises the choreography of desire in his sexual phenomenology. In this volume, the erotic-sexual relationship is almost exclusively described as a predatory dynamic:

> a dialectic of the self and other which is that of master and slave: insofar as I have a body, I may be reduced to the status of an object beneath the gaze of another person, and no longer count as a person for *him*, or else I may become *his* master and, in my turn, look at *him.* (Merleau-Ponty1945, 193, emphasis mine)

Butler's interpretation of this passage is essential for its posturological-medial application precisely because of her acute insight into the gaze structures of heterosexual desire. In the perceptual dynamics of the master-slave, Butler recognises, above all, a problem of incorporation: in the relationship described by Merleau-Ponty, the desiring pole is active; it is a subject, while the desired pole is a body, reified, an object (and perhaps an image?). This chiasmus typical of Merleau-Ponty's reflections implies, on the one hand, a fundamental disembodiment of the desiring subject and, on the other, the purification of active desire from the body-object:

> In phenomenological terms, active desire is a flight from embodiment. The slave is thus designated as the body that the master lacks. And because the slave is a body-object, the slave is a body without desire. Hence, in this relationship, neither master nor slave constitutes a desiring body; the master is desire without a body, and the slave is a body without desire. (Butler 2022, 185–186)

This impossible embodiment of desire that Butler reads in Merleau-Ponty's words turns out to be an important point of contact with a mediology that deals with erotic-pornographic material. Indeed, the sexual and sexualised connotation of the object of analysis imposes the need to extract from the perceptive posture that these media require a possible reading that considers the gendered power dynamics reproduced in the process. Butler's Merleau-Ponty seems to echo those reflections that, as in Crary (1990), describe the disembodiment of the modern, Cartesian subject, the master of the phenomenological equation. In a work such as this, which deals with erotic bodies reproduced in images, it is always important to pay particular attention to the power dynamics underlying the processes of perception, their mediation and their phenomenological description. Uncomfortable media, in their challenge to postural stability, can and will be shown to emphasise, on the one hand, mastery of the male gaze and the perceiving subject, aided by an apparent control and domination of the medium by the user. On the other hand, it

could entail a form of disorientation of the perceptual processes and power relations with the reproduced body-objects, beyond the domination of the male gaze and towards a posture of perception that tends not towards control but towards a haptic relationship with the image. This relationship recalls what Laura Marks has argued about the hapticity of the videotape surface, which "invite[s] a small, caressing gaze" (1998, 336).

Butler's analysis, as is typical of her contemporary performative theories of gender, also describes a moment of liberation of the slave who remains ontologically so in the erotic relationship until (he/)she cannot actively express desire:

> If the slave is a body without desire, the very identity of the slave forbids desire. Not only is the desire of the slave irrelevant to the master, but the emergence of the slave's desire would constitute a fatal contradiction in the slave's identity. Hence, the liberation of the slave would consist in the moment of desire, for desire would signal the advent of a subject, a body expressive of consciousness. (Butler 2022, 186)

Although never fully explicit in Merleau-Ponty, the slave and her (impossible) liberation can only describe, again following the path traced by Butler, the female subject who, as de Beauvoir (1953) would argue, is precisely socially constructed as the Other, whose body is decontextualised and fragmented.

Butler recognises the limits of her analysis to the Merleau-Ponty of the *Phenomenology of Perception*. The subsequent and posthumous *The Visible and the Invisible* (1964) and the focus on tactility will be central to the somatechnical entanglement described above and breaks down the regimes of the gaze and the power dynamics of the master-slave equation. However, Butler's position remains highly polarised: The Merleau-Pontian subject will never be historically and culturally situated and thus lacks a valid phenomenological perspective:

> What is the historical genesis of the "subject" that Merleau-Ponty accepts as an a priori feature of any description of sexuality? Does this "subject" not denote a given history of sexual relations which have produced this disembodied voyeur and his machinations of enslavement? What social context and specific history have given birth to this idea and its embodiment? (Butler 2022, 188)

From a phenomenological perspective, a series of issues that reveal the precise exposure of a "sexual ideology" is also at the centre of Merleau-Ponty's text. If, as in our case, this phenomenology of erotic perception concerns medial prostheses and *epitheses* (Flusser and Roth 2014), the latter can be constituted as true *technologies of gender* (De Lauretis 1987) insofar as they can penetrate the perceptual interstices of the erotic choreography described in the phenomenology of perception. Butler concludes with a "call to arms," explaining the potential of situated phenomenology:

> If the body expresses and dramatises existential themes, and these themes are gender-specific and fully historicised, then sexuality becomes a scene of cultural struggle, improvisation, and innovation, a domain in which the intimate and the political converge, and a dramatic opportunity for expression, analysis, and change. The terms of this inquiry, however, will not be found in the texts of Merleau-Ponty, but in the works of philosophical feminism to come. (Butler 2022, 188)

In response to Butler's call and the many authors who have codified a feminist approach to phenomenology (Fisher and Embree 2000), there is certainly the fundamental contribution of Sara Ahmed, who could play a central role in this proposal of media posturology.

Interested in the construction of an expressly queer and feminist phenomenology, Ahmed, similar to Cavarero, requires us to analyse an important terminological shift. The locution "queer," today a word that connotes a wide field of studies and identity, finds its etymological root precisely in the concept of obliquity. The term derives

> from Scottish, perhaps from Low German (Brunswick dialect) *queer* "oblique, off-center," which is related to German *quer* "oblique, perverse, odd," from Old High German *twerh* "oblique" (from PIE root **terkw*- "to twist"). (Online Etymology Dictionary n.d.)

Here, too, as can be deduced from the etymological root, the original semantic scope concerned postures and gestures that recorded an inclination that was precisely "off-centre" and, therefore, outside the framework of rectitude. The derogatory connotation

that the term would acquire in the early 20th century, would still determine an association, as we have already observed with Cavarero, between obliquity and moral obscenity. Therefore, we want to include the context of queer studies as an essential theoretical-methodological source in the definition of uncomfortable media, which, as we shall see, in their interaction with erotic-pornographic material have much to do with the complex dynamics of gender subjectification. Ahmed's perspective is particularly important here because, starting from the oblique experience of non-heterosexual sexuality, it succeeds in extracting a general phenomenology from the concept of orientation, both sexual and physical:

> What does it mean to be oriented? How is it that we come to find our way in a world that acquires new shapes, depending on which way we turn? If we know where we are, when we turn this way or that, then we are oriented. We have our bearings. We know what to do to get to this place or to that. To be oriented is also to be oriented towards certain objects, those that help us find our way. (Ahmed 2006a, 543)

The question posed by Ahmed at the beginning of the article and explored in detail in *Queer Phenomenology: Orientation, Objects, Others* (2006b) thus defines a methodological strategy that is indispensable to the proposed posturological one. Specifically, Ahmed's queer perspective responds to Butler's call and situates the percipient subject in a perspective that radicalises phenomenology and makes it coincide with the situated experience of the writing subject (the author, herself) in a tradition typical of feminist self-narrative (Abrams 2019). Queer desire in Ahmed's phenomenology is a vector that precisely orients the perception of the entire physical and symbolic space around us:

> We can see that the tending towards certain objects and not others produces what we could call "straight tendencies," a way to act in the world that presumes the heterosexual couple as a social gift. Such tendencies enable action, in the sense that they allow the straight body, and the heterosexual couple, to extend into space. The queer body becomes from this viewing point a failed orientation: the queer body does not extend into such space, as that space extends the form of the heterosexual

> couple. The queer couple in straight space might look like they are slanting, or oblique. (Ahmed 2006, 543)

The obliquity of queer desire, which closely recalls the impossibility of active desire in Butler's interpretation, finds a further point of comparison, this time less severe, with Merleau-Ponty's words. In fact, Ahmed returns to another point in the *Phenomenology of Perception*, at which the author describes the process of the progressive verticalisation of perception. In the passage that is essential for a mediological posturology, Merleau-Ponty states the following:

> If we so contrive it that a subject sees the room in which he is, only through a mirror which reflects it at an angle at 45° to the vertical, the subject at first sees the room "slantwise." A man walking about in it seems to lean to one side as he goes. A piece of cardboard falling down the door-frame looks to be falling obliquely. The general effect is "queer." (Merleau-Ponty1945, 289)

However, this description refers to an initial moment of the perceptual process in question that is constantly evolving. The obliqueness of the mirror's reflection is indeed corrected: "After a few minutes, a sudden change occurs: [T]he walls, the man walking around the room and the line in which the cardboard falls become vertical" (Merleau-Ponty 1945, 289). This aspect, Merleau-Ponty explains, concerns the will to act of the body, itself, and its relationship to space:

> What counts for the orientation of my spectacle is not my body as it in fact is, as a thing in objective space, but as a system of possible actions, a virtual body with its phenomenal "place" defined by its task and situation. My body is wherever there is something to be done. (Merleau-Ponty1945, 291)

For the author verticality is a matter of action, then. The "queer" moment described in the oblique perception of the mirror must be corrected because it inhibits bodily action and, thus, the subject's actual being in the world: "In other words, the body straightens its view, in order to extend into space" (Ahmed 2006a, 561). Starting precisely from the process of perceptual verticalisation, Ahmed recovers another terminological chiasmus

of the adjective *straight*, understood as upright, vertical, but also heterosexual. The double valence of this posture allows the author to "describe heteronormativity as a straightening device, which rereads the slant of queer desire" (Ahmed 2006a, 562). Ahmed's perspective analyses how bodies acquire a certain shape and inclination in space because of the repetition of normative gestures dictated by compulsory heterosexuality. Occupying a physical, political and social space is not a neutral act: Ahmed highlights how spaces are oriented around the heterosexual body, which allows that body to extend into space. Quoting the work of Gill Valentine, Ahmed points out how "repetitive performances of hegemonic asymmetrical gender identities and heterosexual desires congeal over time to produce the appearance that the street, for example, is normally a heterosexual space" (Bell and Valentine 1995, 150). Ahmed's work offers a way of seeing how gender and sexuality are produced in everyday moments of interaction with objects, others and the spaces we inhabit. For the author, the experience of a body that is not oriented or inclined along straight lines – in her case, the lesbian body that is sexually inclined towards objects outside the heterosexual matrix – can generate an important *disorientation device* of the Butlerian performative grid (Butler 1990; 1993). Bodies that do not conform to the rectitude of such a grid are, for Ahmed, "contorted bodies" (Ahmed 2006b, 67), that is those cultural corporealities beyond the "straight line" that are forced into the obligatory precincts of the heterosexual matrix: "Compulsory heterosexuality diminishes the very capacity of bodies to reach what is off the straight line" (Ahmed 2006b, 67). Here, then, as with Cavarero, this tendency in Ahmed's phenomenological approach acquires an important critical–social value that, once again, could tell us much if applied to the postures with which we approach certain images, especially if they are erotically active, and the media forms that convey them. Following the constructivist perspective inaugurated by Butler, who notoriously suggested ways out of the heterosexual matrix through forms of displacement or performative subversion, Ahmed also perceives in the experience of oblique orientation the possibility of constructing a "disorientation device." The disorientation device describes the possibility of "experiencing the pleasures of deviation" from those systems that, from a Foucauldian perspective, define the discursive devices for the construction of knowledge and power dynamics. To better express this concept, Ahmed uses the example of the family line: "After all, it is possible to follow certain lines (such as the family line) as a disorientation

device [...]. For some, for instance, the very act of describing queer gatherings as family gatherings is to have joy in the uncanny effect of a familiar form becoming strange" (Ahmed 2006a, 3). Queer gatherings, those alternative forms of kinship to those of blood that queer or non-conforming subjects constitute because of forced exclusion or self-determined estrangement from biological families, become, for Ahmed, expedient for actualising a form of discursive device that bends the rectitude of the normative grids that, in this case, establish the concept of family. Ahmed's use of the verb "describe" is a clear reference to the performative capacity of language, as Butler has already intuited. Simultaneously, it raises the possibility of considering visual and media forms of representation as devices of disorientation. Returning to our posturological approach, the concept of the disorientation device – where it retains its dual nature of material and discursive technology – seems to be a valid theoretical ally of the uncomfortable media discussed above. Indeed, it is precisely in this "pleasure of deviation" that the peculiarity of such immersive media forms lies: a pleasure that is here innervated by an openly erotic matrix and that finds its expression precisely in somatechnical fusion. The perceptual disorientation dictated by the ergonomic conformation of certain devices (the stereoscope and forms of contemporary VR) is here associated with the possibilities of disorientation that certain mediated experiences can have regarding processes of gendered subjectification.

What, then, are the aims of the posturology just outlined? Primarily, there is an urgent need to find ever more precise tools for analysing the concept of immersivity, which is now central not only to interactions with virtual technologies, but also to the broader *experiential turn* that characterises our contemporaneity at a more general level. The latter will be addressed here precisely from its media archaeological genealogies, with a direct focus on how bodies, situated and gendered, occupy a space or, rather, an environment, the concrete one and the virtual one of the an-icon (Pinotti 2021). Therefore, the proposed methodological system will attempt to keep the diverse theoretical points activated here in tension, with the purpose of constructing, from the specificity of the erotic-pornographic content, a broader reflection on the relationship between body, image and technology. Hence, posturological reflection becomes a tool for the main purpose of this thesis. Drawing on the long-standing debate about the alleged ability of erotic pornographic material to shape and influence sexualities and body politics, we ask

whether the technologies described here and the characteristics of the environmental images define new perspectives for the concept of immersive pornography: Is it part of a broader system of control and capitalisation of bodies and identities, or is it a media form with strong expressive power and the ability to queer gender proprioception?

Chapter 2. The Frenzy of the Third Dimension

2.1 Methodology – Media Archaeology and the Erotic Commonplace

This chapter requires further methodological specification. While the perspective proposed in relation to the postural approach will also be applied to the objects and devices of study examined in the following pages, the historical identity of this analysis must be situated within the broad theoretical, disciplinary and methodological context of media archaeology. This perspective, whose genesis is illustrated by programmatic volumes such as *Media Archaeology: Approaches, Applications, and Implications* (Huhtamo and Parikka 2011) and *What is Media Archaeology* (Parikka 2012), implies an important shift in philosophy and method. This shift in perspective constitutes part of a broad theoretical vector in dialogue with the fluctuations of the historical discipline. The so-called New Historicism current in the Anglo-American sphere (Veeser 1989) has made it possible to circumscribe, from the cultural materiality of the media – understood, above all, as devices – a system of analysis that moulds the notions of linear temporality, narrative and historical study in order to derive a Foucauldian genealogical approach. Foucault's contribution to media archaeology, as well as to the general approach of this thesis, is central.

The Archaeology of Knowledge (Foucault 1969) not only introduces the semantic shift of the discipline of archaeology but also provides a method that questions the construction of our present and the devices – necessarily discursive in Foucault – that, through the lens of a more or less recent past, explain the systems of our contemporaneity. The Foucauldian genesis of media archaeology, as Parikka and Huhtamo (2011, 8) have noted, has much to do with the critical luck and varying lines of interpretation of the philosopher's texts. This is the case of the two critical vectors, the Anglo-American and the German, which have emphasised two distinct systems in Foucault's legacy. In the first case, "the Anglo-American tradition has valorised Foucault as a thinker who stressed the role of discourses as the loci where knowledge is tied to cultural and social power" (Huhtamo and Parikka 2011, 8). The Anglo-American tradition of post-Foucauldian studies, whose reception is associated with authors such as Andrew Scull (1990) and Judith Butler (1990, 1993), therefore focuses on discursive devices as primary and

constitutive elements of the processes of subjectification that construct and shape being as a social and somatechnical entity.

As anticipated, the Anglo-American field draws on the theoretical perspectives of New Historicism, which Aram Veeser has summarised in a series of key assumptions:

> 1) that every expressive act is embedded in a network of material practices; 2) that every act of unmasking, critique, and opposition uses the tools it condemns and risks falling prey to the practices it exposes; 3) that literary and non-literary "texts" circulate inseparably; 4) that no discourse, imaginative or archival, gives access to unchanging truths or expresses unalterable human nature; 5) finally that a critical method and a language adequate to describe culture under capitalism participate in the economy they describe. (Veeser 1989, xi)

According to Parikka and Huhtamo's (2011) preliminary mapping, the Anglo-American discursive approach "assesses the material and the technological *through* their discursive manifestations" (2011, 9-10, emphasis mine) which recalls, for example, the analyses of Giuliana Bruno (2002) and Jeffrey Sconce (2000). Conversely, the German approach, influenced by Kittler's (1985; 1986) theoretical model, sought to overcome the discursive logocentrism typical of Foucauldian archaeology in order to focus on the material hardware constituting archaeological mediascapes. Such a system, as specified by Kittler, who however had distanced himself from media archaeology (Armitage 2006), is intended to emphasise the role of material devices in power dynamics, thus focusing on the construction of operational systems and institutions through assemblages of technical media without subordinating them to a discursive interpretation.

Wanda Strauven (2013, 75) also points out that to Anglo-American and Germanic vectors, we should add the theoretical and methodological line of the so-called Amsterdam School, which focuses on early cinema studies and is influenced by Eric Kluitenberg's *Imaginary Media Project*.[36] In the same text, Strauven highlights four thematic vectors summarising the directions of the constellation of theories and methods of media archaeology. "The Old in the New: From Obsolescence to Remediation," "The

[36] The symposium "An Archaeology of Imaginary Media," organised by Eric Kluitenberg at De Balie, Amsterdam, in February 2004 and the volume *Book of Imaginary Media* (Rotterdam: Nai010 Publishers, 2006) are worth mentioning in this regard.

New in the Old: Anarchaeology or Variantology," "Recurring Topoi: The Eternal Cycle of Déjà Vu" and "Ruptures and Discontinuities: Foucault's Legacy" are the titles under which the author synthesises four approaches, directions and possible disciplinary developments.

Strauven's perspective, although necessarily synthetic, helps identify a media archaeology – and, thus, its theoretical and methodological genealogy – as well as crystallise theoretical nodes essential to the methodological definition of this chapter. Although they often overlap and coexist, the four approaches refer respectively to the different clusters of authors and methods of the media archaeological para-discipline. The first methodological category – "The Old in the New" – can be linked to the McLuhanian position on remediation and its theoretical heirs (Bolter and Gruisin 1999). "The New in the Old" maintains a tension with Siegfried Zielinski's (1999; 2006) archaeological perspective and the field of deep time, just as the theme of "Recurring Topoi" can be associated with Finnish media archaeology in Huhtamo and Parikka (2011). Finally, on the focus on ruptures rather than continuities – in full coherence with Foucault's perspective – one could refer to the works of Thomas Elsaesser (2004) and Wolfgang Ernst (2006; 2021). Strauven (2013, 73-74) also recognises the value of the latter definition as an apt description of the landscape – theoretical and practical – of "media art."

These perspectives, which together form the (partial) constellation of approaches that define media archaeology, can be further situated in this context. Indeed, the study of erotic-pornographic images and their devices aims to synthesise the theoretical will that crosses the material conformation of technologies with the broad discursive assemblage – also part of the media ecosystem of the era – that has defined the rhetoric associated with certain optical media. This represents a system that seeks to interweave the discursive and material as fields of investigation that are necessarily interrelated but never subordinate to one another, a kind of interrelation that necessarily involves the *content* of media forms. In the wake of McLuhan (1964), many authors have stressed the secondary nature of the content dimension from a perspective that would render an archaeo-genealogy of a precise "genre" inoperable, such as the erotic-pornographic. Kittler

(1999),[37] for example, emphasises the primacy of the media's storage and communication qualities rather than their content. This is certainly a desirable position and one that will be widely applied in this thesis. The intention, however, is to consider the discursiveness of the content of the *Apparat* as a central element in the definition of a specific genealogy in relation to erotic immersion.

With this intention, the contribution of media archaeology will focus on the main recurring topoi of immersion and (proto-)virtualisation technologies in their interaction with sexual and erotically active bodies, particularly in line with the vectors indicated by Huhtamo (1996). This erotic media archaeology is not intended to define an archaeology of sexuality *per se* and its socio-cultural implications but, rather, to highlight, through a media perimeter, a series of commonplaces of immersion in the erotic image. The commonplace, in its etymological nature – *koinos topos* – sums up the multiple identities of the archaeological media object in question. It is the study of "common *place*" in the sense of shared and known by a social arena – recalling Gramsci, one would say popular.[38] But they are also common places in the sense of recurring. It is here that the system of media temporality proposed by Huhtamo (1996) is of particular methodological coherence. Indeed, media archaeology, which is concerned with recurrent topoi, emphasises "cyclical rather than chronological development, [the] recurrence rather than unique innovation" (303). At the heart of an anti-linear temporal perspective, the issue of cyclicity owes much to theories of *deep time*[39] (De Landa 1997) and participates in the definition of media archaeology as the study of recurring commonplace and elements: "the result of such an approach is media history as a succession (or eternal return) of media clichés or commonplace views concerning (new) media, technology and their uses" (Struaven 2013, 71). A frame of analysis that again emphasises the Foucauldian matrix concerns the culturality and, thus, ideology of these recurring topoi. As Huhtamo himself warns us, "in the era of commercial and industrial media culture, it is increasingly

[37] Kittler's perspective is quite clear and radical on the issue: "What remains of people is what media can store and communicate. What counts are not the messages or the content with which they equip so-called souls for the duration of a technological era, but rather (and in strict accordance with McLuhan) their circuits, the very schematism of perceptibility" (Kittler 1999: xi–xii).

[38] Think also of the derogatory use of the English adjective "common" as "typical of a low social class." "COMMON | Meaning in the Cambridge English Dictionary," dictionary.cambridge.org, n.d., https://dictionary.cambridge.org/dictionary/english/common.

[39] The term derives from the geological time considerations of the volcanologist James Hutton (1788). On this subject, see Stephen Baxter, *Ages in Chaos: James Hutton and the Discovery of Deep Time* (New York: Tor Books, 2004).

important to note that topoi can be consciously activated and ideologically and commercially exploited" (1996, 301).

The ideology of the topos and its (proto- and post-) industrial commercialisation are focal points for an erotic media archaeology. Erotic media archaeology will always have to deal with technologies, images and systems of representation that, from their origins, have had to engage with the politics of the commercialised body. The topos described by Huhtamo could therefore also be understood as the materialisation and spatialisation of the Foucauldian discursive *dispositif*. The topographical device is, thus, part of a broader capitalist disciplinary system with the capacity, as mentioned with Huhtamo, to activate and ideologically and commercially exploit a given topos or commonplace.

Indeed, the link between an archaeology of media and an archaeology of sexuality was suggested by Foucault (1976) in his *History* – although one might venture to call it an archaeology – *of Sexuality*, vol. 1. From Foucault's perspective, sexuality seems to describe a particularly fertile space for the grafting of a series of discursive devices for the control and discipline of bodies. The early Foucauldian perspective describes how contemporary Western civilisation would develop a *scientia sexualis*, in contrast to the practice of the *ars erotica*, characterised by a relationship with "truth" "extracted from pleasure itself, considered as practice and harvested as experience" (Foucault 1976, 57). The characteristic of the knowledge synthesised by *ars erotica* is that of being embedded in a mode of *initiatory* transmission. In ancient civilisations, it was understood as a practice apt for the transfiguration of the one on whom it falls. Conversely, *scientia sexualis* describes a series of procedures that, in the West, functioned to "tell the truth about sex" through, among other things, the practice of *confession.* A technique that exercises power over the pleasures and desires that are the subject of it, in a circular mode that, on the one hand, sensualises this knowledge and, on the other hand, transmits the sensual pleasure derived from the confession back to the institution of power that put it in place. It is a problematic recirculation that, according to Foucault, lies at the heart of Western processes of repression in relation to the body and sexual practices. It is, therefore, a question of communicative processes: on one hand, it is the analysis of bodily pleasure and the practices that allow it to be studied and communicated *in* pleasure, itself within "private" and guided contexts. On the other hand, it is a heterodirected

communicative model based on the presence of an organ of power that defines and extrapolates a form of knowledge through confession.[40]

However, Foucault himself remains ambiguous about the value and repressive capacity of the *scientia sexualis*, proposing that it may constitute a form of *ars erotica* for the modern West.[41] The Foucauldian approach allows us to understand the biopolitical nature of sexualities and the institutions that regulate them – such as the family – beyond their merely repressive function. In a sense, sexuality and the family became agencies of a broader system of disciplinary, diffuse and atomised power that produces precise strategies of control. The hysterisation of the woman's body, the pedagogisation of the child's sex, the socialisation of procreative conduct and the psychiatry of perverse pleasure (Foucault 1972, 104-105) all became the strategic axes through which institutional models exploit this sexuality device.

The link between archaeology and sexuality also gives us the opportunity to specify another essential element of the media archaeological discipline and, more generally, for the reflection pursued here. Indeed, it seems necessary to examine the Foucauldian root in its bifurcation between purely archaeological and genealogical approaches. Monea and Packer (2016) highlight the political relevance of the distinction between the "two souls" of the "first" and "second" Foucault. Given the profound turn that the philosopher took in thinking about the technologies of power, governance and the self, beginning with his 1970–71 course at the *Collège de France*, it may be essential to better situate media archaeological approaches.[42] What is now nominally known as media *archaeology* cannot but consider, as we have seen with Huhtamo, the role of discursive and material devices (if such a distinction is possible) in the construction of the agentic recirculation of knowledge power. Such a consideration is not limited to a purely nominal characteristic but tends to redefine a methodological form that deeply *problematises* the present. Following Koopman (2013), it is in the attitude of *problematisation* that the authors

[40] These are two types of direction that, as we shall see, will be the same as those identifying representations of sex in ancient societies, such as Pompeii, and the modern *pornographic* ones in nineteenth-century Europe.

[41] "Must we conclude that our scientia sexualis is but an extraordinarily subtle form of ars erotica, and that it is the Western, sublimated version of that seemingly lost tradition?" (Foucault 1978, 71).

[42] The genealogical development of Foucault's thought is further explored by the author in "Nietzsche, Freud, Marx," in *Aesthetics, Method, and Epistemology: Essential Works of Foucault, 1954-1984*, eds. J. D. Faubion and P. Rabinow (New York: The New Press, 1999), 269-78; "Nietzsche, Genealogy, History," in *Aesthetics, Method, and Epistemology: Essential Works of Foucault, 1954-1984*, eds. J. D. Faubion and P. Rabinow (New York: The New Press, 1999), 369-92.

recognise the *trait d'union* between archaeology and genealogy, with the intention of constructing a critique dedicated to the history of the present:

> In the realm of media studies and media history, the problematisation approach has the capacity to not only (archaeologically) articulate the specific affordances and constraints of a technical media apparatus' functions of capture, processing, storage, and transmission but (genealogically) articulate the clashes of power that resulted as multiple technologies were (counter)posed as potential solutions within a problematic field, and thus trace the emergence of a stabilised (socio)technical apparatus. (Monea and Packer 2016, 3145–46)

This passage is central to understanding the strategies and goals of a media archaeological/genealogical trajectory. Keeping the technical regimes of media affordances in tension with the institutional systems that have occasionally participated in the emergence and persistence of a particular media form seems not only desirable but also at the core of the political valence of media genealogy. Thinking of media as "a method of systematically and repeatedly addressing a problem" (Monea and Packer 2016, 3146) is indeed a winning strategy in terms of understanding its disciplinary value.[43]
Among these institutions, the pornographic, understood as both a *cultural industry* and an actual organisation of commercial production, is one of the most effective investigative lenses for understanding such media and genealogical movements. The definition of an erotic media archaeology cannot but take into account Foucault's analysis of developments in sex discourses and integrate it into the material and postural conformations of media, which, as we shall see, have participated in defining somatechnical disciplinary systems. As Monea and Packer reiterate, it is a military manual that provides Foucault with the cue to codify the discipline of signal processing:

> From the master of discipline to him who is subjected to it the relation is one of signalisation: it is a question not of understanding the injunction but of perceiving the signal and reacting to it immediately, according to a more or less artificial, pre-

[43] Monea and Packer (2016) focus on media signal processing as the form and object of media genealogy. This focus is determined by its centrality to understanding the disciplinary nature of media: "Media address the certainty and regularity of signal processing, of reducing uncertainty and noise-or, in broader terms, "disciplining" signaling or, more consequently, epistemological practices" (3146).

> arranged code. It places the bodies in a little world of signals to each of which is attached a single, obligatory response. (Foucault, 1975, 166)

It is no coincidence that Foucault's somatic metaphor references a series of bodily figures and actions that had much to do with the disciplined verticality of posture, as in the military context.[44] The focus on the observer and the observance of rules and disciplines can only lead to a need to question the body styles that certain media demand of their users.

The devices – in their material and discursive assemblages, that is, the subject of this analysis – are necessarily concerned with the ergonomic and rhetorical forms that have exploited the commonplaces recurring over the last two centuries. The chronological approach proposed in this analysis, however, will not, as a matter of intention, be linked to a geological deep time: the devices and social contexts analysed are related to recurrent topoi, the origin of which, we would like to propose here, can be traced back to the first half of the nineteenth century. In fact, the contribution of Crary (1990), himself in a certain sense a media archaeologist, is the main reference for a chronological perimeter that records, albeit with necessary adaptations, an obscene revolution that the author associates with those visual apparatuses that, like the stereoscope, disrupt the rules and techniques of the observer.

The focus of media archaeology on the erotic context is clearly not entirely new. Huhtamo (2006) devoted several pages to the eroticism that certain media forms, such as peep shows, permit in relation to their viewers. This initial analysis, therefore, will examine a series of topoi that will then be developed based on their historical recurrence and will intersect posturology, mediology and the politics of sexual bodies in the nineteenth century. In order to situate the methodological adherence chosen here, it should also be specified that the concept of the erotic commonplace describes two types of conceptual declinations. On one hand, it refers to the erotic-pornographic postures reproduced in the images and demanded of the viewer by the devices. On the other hand, the spatial and architectural valence of the term recalls the construction of a media fetish made possible by these devices. Indeed, the possibility of creating a virtual space through a physiological

[44] On this subject, see Sander L Gilman, *Stand up Straight! A History of Posture* (London: Reaktion Books, 2018), in particular, chpt. 3, "Chest Out! Posture's Military Meanings."

trick – the principle underlying stereography – describes the interest here in analysing the places – physical, technical, moral and social – that construct the iconography of immersion in the pornographic image.

2.2 Stereography and the Optical Debate

To fully understand the impact of the stereoscope and stereographic photography on nineteenth-century visual culture, it is first necessary to understand their circulation. If we now associate photography with a precise format, that is, with a single camera that produces a single image on different media depending on the technique and period, we must imagine that for the observer of the second half of the nineteenth century, one of the most common relationships with the photographic image was the stereoscopic one. As we shall see, this is an image produced by a "double" photographic device whose lenses, placed at a precise distance to mimic that of the human intraocular distance, produced stereoviews (or simply "views") composed of two images whose focal points differed slightly. They produced the typical three-dimensional effect by being inserted into various forms of stereographic optical devices.

The decision to focus on stereography and examine its interrelationship with erotic-pornographic content stems from the observation that stereographic production was a particularly powerful force in mass visual culture in the second half of the nineteenth century (Davis 2004; Plunkett 2008; Teukoslky 2020a; 2020b; Huhtamo 2006). The approach to a product that was "industrially" produced – albeit with due historical caution – and uncoincidentally often excluded from the art historical canon that has examined art photography from its origins (Davis 2004, 41), posits an analogy with erotic-pornographic material. With this kind of images, stereography shared audiences, techniques and reputation capital.

The massification of stereographic production that took place from the 1860s onwards (Darrah 1977, 45) led to the creation of a visual proto-industry in the United States and Europe: according to the historian William C. Darrah, by the mid-1860s, several publishers[45] were printing over 2,000 views a day, and by the early 1860s, this figure had

[45] This is the case involving E. & H. T. Anthony, Ferrier (Paris), Adolph Braun (Dornach) and J. Andrieu (Paris). Cf. Darrah 1977, 45.

reached around 3,000. By 1874, the stereoprinter Charles Pollock of Boston and Foxboro, Massachusetts, was producing 4,000 stereoviews daily, while the Kilburne brothers of Littleton were producing between 1,800 and 3,000 stereographs a day in the 1870s (Darrah 1977, 45; Davis 2004, 2). By 1901, with more efficient mechanisation of production, one of the leading publishers of stereoviews, Underwood & Underwood, was producing 25,000 views a day and 300,000 stereoscopic instruments a year.[46] Between 1859 and 1885, Darrah estimated that about one-third of American photographers produced stereographs (Darrah 1977, 245). Darrah's calculation was based on a ratio of the total number of photographers who printed *carte de visite*[47] to the percentage who also published stereoviews. This is a conservative estimate, as Davis notes, "for the number of stereographers versus photographers does not indicate the number of photographs taken, nor prints made. With the publication of views, photographic pairs could well outstrip single photographs in quantity, if not in the count of producers" (2004, 50).

This first account of the numbers involved in the production of stereographs since the second half of the nineteenth century tells us about and confirms the extreme domestication in the use of stereoscopes in Europe and the United States at the time. Therefore, these data help in defining the relevance of this technology for the construction of a social imaginary and the definition of a series of spaces (symbolic and photographic) for the production, reproduction or disorientation of critical categories such as gender, race and social class. It represents a technological system that also re-signified, in its erotic-pornographic forms, a model of expression of desire and sexuality that was unprecedented at the time.

If the influence of the photographic form is clear from this initial overview of the productive scope of the stereoscope, it is worth remembering that the invention of the stereoscope and studies on the binocularity of human vision preceded the actual diffusion of photographic technology, albeit by a small margin. This aspect, as we shall see, is

[46] William C. Darrah, *Stereoviews: A History of Stereographs in America and Their Collection* (Gettysburg, PA: Times and News Publishing Co., 1964), 109. William Brey estimated the Underwood and Underwood production in 1901 at nine million views annually. See William Brey, "Ten Million Stereo Views a Year," *Stereo World*, vol. 16, no. 6 (January-February, 1990): 6–12.

[47] *Carte de visite* shares with erotic stereographs broad circulation and the fundamental characteristic of affordability. On the relevance and spread of the genre, see Lara Perry, "The Carte de Visite in the 1860s and the Serial Dynamic of Photographic Likeness," *Art History* 35, no. 4 (May 22, 2012): 728–49, https://doi.org/10.1111/j.1467-8365.2012.00915.x.

important for a thorough understanding of the directions taken by this technology, which, as is often the case, went from its first use in the experimental scientific sphere to widespread commercial success through a series of technical developments.

2.2.1 Wheatstone and Brewster: The Origins of The Apparatus

Before its commercial diffusion, the stereoscope was the protagonist of a complex optical and philosophical debate. This diatribe focused on the physiological, muscular and optical processes that explain its operation as well as the nature of perception itself. In order to fully understand the philosophical underpinnings of the device, it is useful to consider a number of positions, often in opposition, exemplifying the debate on optics at the time and introduce two of the central figures in this technology: Charles Wheatstone and David Brewster.

In fact, the stereoscope was born in the positivist climate of the 1830s as a practical device for the experimental confirmation of theories on visual depth perception. In almost complete synchrony with the early photographic experiments of William Fox Talbot, Nicéphore Niepce and Louis Daguerre, the invention, development and diffusion of this device revolved around a number of prominent figures who, between Europe and the United States, determined its development and commercial success.

One of these figures was Charles Wheatstone, who presented the first form of the apparatus to the Royal Society of Great Britain in 1838, along with a paper titled "Contributions to the Physiology of Vision, Part the First: On Some Remarkable, and Hitherto Unobserved, Phenomena of Binocular Vision."[48] Wheatstone's theory postulated that when looking at a three-dimensional object at close range, two slightly different images are projected onto the retina of the eye. The paper began with the following consideration:

[48] On the exact chronology of the birth of the device, there is still a margin of uncertainty due to the ghostly figure of Mr. Eliott (or Helioth), a teacher of mathematics from Edinburgh who, according to David Brewster, anticipated Wheatstone's invention in 1834. While this claim finds no further bibliographical confirmation, it gave rise to the widely quoted nomenclature "Helioth-Wheatstone stereoscope" to indicate the earliest forms of the device. However, it is worth noting the more than explicit theoretical rivalry between Wheatstone and Brewster, which may have led the latter to point out the non-originality of Wheatstone's invention. Cf. Nicholas J. Wade, "The Ghost of Helioth and His Stereoscope: The Return of a Phantom," *Perception* 41, no. 8 (January 1, 2012): 1001–2, https://doi.org/10.1068/p7353.

> When an object is viewed at so great a distance that the optic axes of both eyes are sensibly parallel when directed towards it, the perspective projections of it, seen by each eye separately, are similar, and the appearance to the two eyes is precisely the same as when the object is seen by one eye only. (Wheatstone 1838, 371)

The object seen at a distance thus produces a retinal projection with a negligible difference between the two eyes. This margin of negligibility, which, according to Wheatstone, also allows for mimetic reproduction: "[…] hence pictorial representations of distant objects […] may be rendered such perfect resemblances of the objects they are intended to represent […]; the Diorama is an instance of this" (Wheatstone 1838, 371). It is interesting to note how another illusionistic device, the diorama,[49] which was fashionable at the same time, is quoted here to confirm a scientific proposition on the nature and conformation of vision. However, if the diorama, like the various types of panorama, modelled the illusion of an environmental image on a large scale, and on distanced view, Wheatstone wondered how the close-up vision of a three-dimensional object could be technologically reproduced. In this case, the axes of the eye and the supposed retinal projections differ significantly:

> But this similarity no longer exists when the object is placed so near the eyes that to view it the optic axes must converge; under these conditions a different perspective projection of it is seen by each eye, and these perspectives are more dissimilar as the convergence of the optic axes becomes greater. (Wheatstone 1838, 371)

Indeed, it is on this first intuition that Wheatstone based the rest of his treatise and, above all, his presentation of stereoscopic technology – an intuition that was not new to optical studies, as Wheatstone himself admitted, referring to an illustrious precedent. Leonardo da Vinci had already observed, albeit briefly, the binocular nature of human sight[50] but

[49] On the diffusion and social relevance of dioramas, see Claudia Kamcke and Reiner Hutterer. "History of Dioramas," in *Natural History Dioramas: History, Construction and Educational Role*, eds. Sue Dale Tunnicliffe and Annette Scheersoi (Dordrecht: Springer Netherlands, 2015); R. Derek Wood, "The Diorama in Great Britain in the 1820s," *History of Photography* 17, no. 3 (September 1993): 284-95, https://doi.org/10.1080/03087298.1993.10442306.

[50] "After looking over the works of many authors who might be expected to have made some remarks relating to this subject, I have been able to find but one, which is in the Trattato della Pittura of LEONARDO DA VINCI*. This great artist and ingenious philosopher observed "that a painting, though conducted with the greatest art and finished to the last perfection, both with regard to its contours, its lights, its shadows

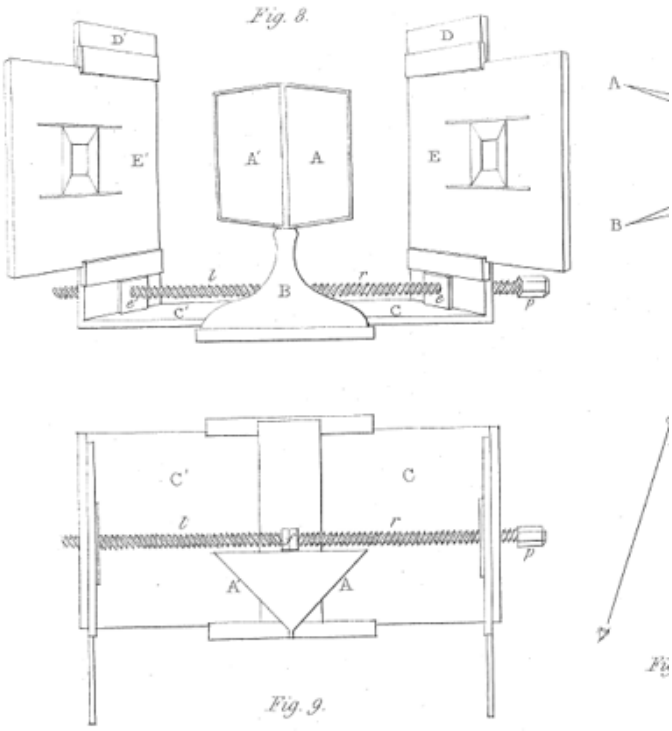

Figure 8. Illustrations from Wheatstone's (1838) article describing the stereoscope and stereoscopic vision; they were presented as two plates (pages of figures) in the article.

failed to conceive the two retinal projections of the close-up object as different. Having instead established the binocular functioning of human vision, Wheatstone had only to ask, "What would be the visual effect of simultaneously presenting to each eye, instead of the object itself, its projection on a plane surface as it appears to the eye?" Is it then possible to artificially create the illusion of depth? Moreover, is it possible to empirically prove Wheatstone's theoretical intuition by means of a specially designed optical device? In the following paragraphs of the essay, as well as in the actual presentation of the technology to the Royal Society of Great Britain, Wheatstone described the device he first called a stereoscope, so named for its ability to produce the illusion of depth.[51] Together with the paper, the author enclosed a series of plates that accurately described the operation and composition of the device. In figures 8 and 9 (in fig. 8), Wheatstone's stereoscope, also called "mirror-type," consisted of two mirrors (A1 and A) reflecting two images (E, E1). The observer would then have to stand as close as possible to the two reflecting surfaces and move the two images until their inclined reflection coincided with the intersection of the ocular axes "and form an image of the same apparent magnitude

and its colours, can never show a relievo equal to that of the natural objects, unless these be viewed at a distance and with a single eye […]."

[51] "The frequent reference I shall have occasion to make to this instrument, will make it convenient to give it a specific name, I therefore propose that it be called a Stereoscope, to indicate its property of representing solid figures" (Wheatstone 1838, 374).

as each of the component pictures" (Wheatstone 1838, 375). According to Wheatstone, several inclinations make up the stereoscopic single image. Only in one of these states, the one most in line with the axes of the eyes, does the image appear immediately as a single one "because in this position only the ordinary relations between the magnitude of the pictures on the retina, the inclination of the optic axes, and the adaptation of the eye to distinct vision at different distances are preserved" (Wheatstone 1838, 375). Thus the physical elements at play are clear to Wheatstone: to work, stereoscopy needs technological and illusionistic stratagems that take into account the size of the image projected onto the retina, the inclination of the optical axes, and the adaptability of the eyes to discriminate different planes of perspective.

To accompany the treatise and the presentation of the device, Wheatstone enclosed a series of figures, "stereo drawings" (fig. 9) to be inserted into the stereoscope on supports E and E1. The choice of the representations is particularly relevant: their geometric simplicity is, with the exception of figure 20 (in fig. 9), decreed by the desire to exclude

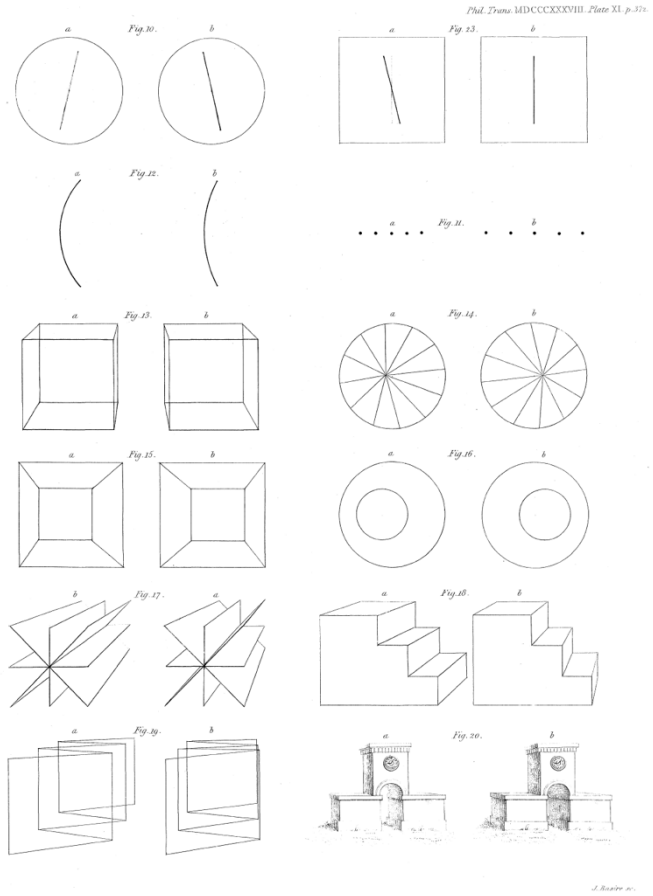

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Figure 9. Illustrations from Wheatstone's (1838) article describing the stereoscope and stereoscopic vision; they were presented as two plates (pages of figures) in the article.

any pictorial or illusionistic expedient that might suggest three-dimensionality, the intention being to emphasise the role of the stereoscopic device in the creation of the "solid image."[52]

Also relevant is the material structure of the technology, which, as per the outline, was still far from the kind of manageability and portability that would lead to the real commercial success of the stereoscope in the following decades. The Wheatstone or mirror stereoscope is a "naked" device that shows how it works and the structure of its parts, a display that not only makes it impractical but also constructs an ineffective medium: by exposing its workings, it causes the loss of an illusory form of immediacy that would be typical of its later versions, cloaking the stereoscope in a quasi-magical and phantasmagorical function (Crary 1990). However, properly recognising the media

[52] "For the purposes of illustration I have employed only outline figures, for had either shading or colouring been introduced it might be supposed that the effect was wholly or in part due to these circumstances, whereas by leaving them out of consideration no room is left to doubt that the entire effect of relief is owing to the simultaneous perception of the two monocular projections, one on each retina" (Wheatstone 1838, 375).

characteristics of this first version of the stereoscopic device would be an interpretative stretch: as is evident from Wheatstone's treatise, the mirror stereoscope is a scientific device constructed with the exclusive intention of proving a physiological theory. However, even at this immature stage of the device's development, it is possible to discern its implications for a broader philosophy of human perception. While the optical effects of the stereoscope were demonstrated, the processes that this device set in motion were yet to be specified. Indeed, it is interesting to note that in the same essay, Wheatstone traces a number of optical problems related to monocular perception that would be central to a broader philosophical debate on the nature of visual perception itself. In paragraph 5 of the essay, Wheatstone introduces the concept of "inverse figures" (1838, 377): in the stereoscope, if we inverted the two images (E and E1) of, say, a skeleton cube (figs. 13-14 in fig. 9), the depth planes would appear inverted, producing a solid with deformed geometry. Such inverted figures, when applied to simple geometric solids, such as those proposed by Wheatstone in figures 13-19 (in fig. 7), will be interpreted in stereoscopic form, albeit distorted. In the case of complex solids, such as figure 20 (in fig. 9), "the mind, unaccustomed to perceive its reverse, because it never occurs in nature, can find no meaning in it" (Wheatstone 1838, 377).

It is, therefore, experience, "nature" in Wheatstone's words, that co-determines the possibility of perceiving the solidity of objects, a particularly relevant consideration to understanding the philosophical nature of these "optical toys." The stereoscope, even in its first version, is a device embedded in a broad optical debate on the multisensory nature of perception and, in particular, the relationship between sight and touch. The debate about the construction of spatial perception and, more generally, the solidity of objects has its own broad and complex tradition, as we have already seen with Leonardo Da Vinci. John Plunkett (2013) traces the genesis of this debate and the role of the stereographic device, starting with the famous question posed by William Molyneux to John Locke[53]: Would a man born blind, if he were to acquire sight, be able to distinguish

[53] In 1688, William Molyneux read an abrégé of Locke's (1688) "Essay on Human Understanding." Locke's chapter on perception interested Molyneux so much that on 7 July of the same year, he sent Locke the following letter: "*A Problem Proposed to the Author of the Essai Philosophique concernant L'Entendement*: A Man, being born blind, and having a Globe and a Cube, nigh of the same bigness, Committed into his Hands, and being taught or Told, which is Called the Globe, and which the Cube, so as easily to distinguish them by his Touch or Feeling; Then both being taken from Him, and Laid on a Table, Let us suppose his Sight Restored to him; Whether he Could by his sight, and before he touchd them, know which is the Globe and which the Cube? Or whether he Could know by his sight, before the stretchd out

a cube from a sphere without touching it? Otherwise put, would he be able to distinguish two solids that had previously been perceived by touch using only the organs of sight? For Molineux and Locke, the answer is negative: it is only through the combination of sight and tactile experience of the world that man constructs three-dimensional perception. This essentially represents an empiricist perspective that challenges the Cartesian or nativist one,[54] which conceived sight as an innate and immediate process of the eye. It is a position further specified by Berkley (1709), who, in *New Theory of Vision*, enshrined the role of touch in our sensitive construction of solid objects and three-dimensional spaces.

Because of the ability of the stereoscope to induce an illusory three-dimensional perception,[55] it reignited the debate as to which perspective it experimentally confirmed. Is the stereoscopic apparatus a confirmation of the nativist position, or does it determine the role of experience and touch in defining the perception of solids and depth? To answer this question, it is necessary to turn to Wheatstone's debate with another protagonist of optic and stereoscopic technologies of the time: David Brewster. In paragraph 11, Wheatstone (1838, 383-384) addresses an optical diatribe that was particularly popular at the time: What causes some people to perceive a carving as a cameo and vice versa? What optical illusion and process causes us to perceive an image carved in a material as a relief and, conversely, to perceive a protruding figure as sunken into the material in which it is carved?[56] The conversion effect was the focus of an earlier meeting of the Royal Society

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his Hand, whether he could not Reach them, to they were Remouved 20 or 1000 feet from him? If the Learned and Ingenious Author of the Forementiond Treatise think this problem Worth his Consideration and Answer, He may at any time Direct it to One that Much Esteems him, and is His Umble servant William Molyneux High Ormonds Gate in Dublin, Ireland." On this issue, compare Alessandra C. Jacomuzzi, Pietro Kobau, and Nicolo Bruno, "Molyneux Question Redux," *Phenomenology and the Cognitive Sciences* 2, no. 4 (2003): 255–280, https://doi.org/10.1023/b:phen.0000007370.68536.2d.

[54] In this regard, see Luigi Traetta. "Stereoscope: A Viewing Device Between Empiricism and Nativism," in *Individual and Environment Conference Proceedings*, ed. Z. Markovic, M. Bojanovic, and G. Digic. University of Niš Faculty of Philosophy, 2016. Retrieved at https://www.researchgate.net/profile/StanislavaStoyanova/publication/310588078_Career_motivational_types_in_Bulgaria/links/5a528319458515e7b72caecd/Career-motivational-types-in-Bulgaria.pdf#page=35.

[55] Inherent but not secondary in any discourse on the theory of perception is the ableist bearing that it brings with it. The analyses carried out in this work are based on historical texts that did not include, except in a derogatory sense, a disabled phenomenology.

[56] "The same indetermination of judgement which causes a drawing to be perceived by the mind at different times as two different figures, frequently gives rise to a false perception when objects in relief are regarded with a single eye. The apparent conversion of a cameo into an intaglio, and of an intaglio into a cameo, is a well-known instance of this fallacy in vision; but the fact does not appear to me to have been correctly explained, nor the conditions under which it occurs to have been properly stated" (Wheatstone 1838, 383).

of London and the subject of a paper published as early as 1745 by Professor Gmelin (Wheatstone 1838, 11). In both cases, the illusion was perceived through the use of optical devices such as the microscope, which imposed a monocular view of the object under investigation. This mediation of the perception of the cameo illusion would be central to determining the role of binocularity in depth perception.[57]

In 1826, Brewster published an article on the subject, in which he explained that the effect was mainly due to the lens of the apparatus used, which reversed the refraction of shadows on objects. Brewster, focusing on the role of experience, then described in detail the physiological process that should have caused the illusion of conversion:

> It cannot therefore be doubted, that the optical illusion of the conversion of a cameo into an intaglio, and of an intaglio into a cameo, by an inverting eyepiece, is the result of an operation of our own minds, whereby we judge of the forms of bodies by the knowledge we have acquired of light and shadow. The greater our knowledge is, of this subject, the more readily does this illusion seize upon us; while, if we are but imperfectly acquainted with the effects of light and shadow, the more difficult is it to be deceived. (Brewster 1826, 104)

It is a perspective that positions the relationship between perception and experience: for Brewster, the eye sees correctly, but it is only the misjudgement of experience that determines the fallacy of visual interpretation. The article, therefore, reconfirms the primacy of the eye and "acknowledges the role of the learnt experience only to demonstrate its fallibility" (Plunkett 2013, 392). Wheatstone then proceeds to take up Brewster's article to refute its main thesis. The indeterminacy of the illusion is given not by the fallacy of mental processes but by the inaccuracy of monocular vision dictated by the device used – in this case a microscope:

> If we suppose a cameo and an intaglio of the same object, the elevations of the one corresponding exactly to the depressions of the other, it is easy to show that the projection of either on the retina is sensibly the same. When the cameo or the intaglio

[57] On this issue, see Thomas V. Papathomas. "The Hollow-Mask Illusion and Variations," in *The Oxford Compendium of Visual Illusions*, eds., Arthur Shapiro and Todorović Dejan (Oxford-New York: Oxford University Press, 2017).

> is seen with both eyes, it is impossible to mistake an elevation for a depression. (Wheatstone 1838, 384)

The retinal projections of a cameo or a carving of the same object are, therefore, congruent, and only binocular vision allows their correct interpretation. Faced with a fallacious optical stimulus, Wheatstone continues, our imagination will, therefore, have to cover the shortcomings of monocular perception:

> but when either is seen with one eye only, the most certain guide of our judgement, viz. the presentation of a different picture to each eye, is wanting; the imagination therefore supplies the deficiency, and we conceive the object to be raised or depressed according to the dictates of this faculty. (Wheatstone 1838, 384)

Unlike Brewster, where it is the mind that creates the deceptive illusion of an inherently correct visual datum, Wheatstone's interpretive model integrates the imaginative faculty as an essential element in the "correction" of an inaccurate optical datum. The cameo-intaglio effect is thus explained by the indeterminacy of the imaginative faculty of judgement, which, when integrated with various environmental factors, can only produce differentiated results depending on the subject and viewing conditions. It can also provide us with a more precise overview of the theoretical polarities relating to human perceptual systems, the diatribe on the cameo-intaglio effect underlines Wheatstone's insight into the instability of human perception, which fully challenges the primacy of vision in sensory construction and seems to anticipate what, as we shall see, Jonathan Crary (1990) would argue with regard to the obscenity of stereoscopic optical devices.

The cameo-intaglio diatribe not only illustrates the conflicted relationship between two historical figures – Wheatstone and Brewster – but also highlights the far-reaching impact that the study of optics and its instruments would soon have on the theory of perception. Indeed, Wheatstone's empirical approach and proto-phenomenological description would have a profound impact on the discipline of optics, which, not coincidentally, from the second half of the nineteenth century onwards would be called *physiological* optics (Schiavo 2003, 116). The body, its physiology, would become the essential protagonist of a theory of perception; paradoxically, an apparatus based on vision and a discrete exclusion of the physical body would become its empirical proof. Between 1850 and

1854, about a quarter of the publications on physiological optics discussed the question of depth perception (Turner 1994; Schiavo 2003, 116), endorsing not only Wheatstone's critical fortune but also the general interest in a more complex definition of perceptual subjectivity. The mirror stereoscope, including its position in relation to the cameo-intaglio diatribe, redefined the relationship between the external world and its seemingly immediate visualisation: an optical device that shows us what is not really there – a solid object – retroactively challenges the entire framework of the relationship between stimulus and sensation (Schiavo, 116), ultimately attacking the modern scopic regime (Jay 1988).

The processes described so far, while essential from a theoretical point of view in constructing a genesis of stereoscopic technologies, are still far from determining a mass cultural substrate. As mentioned at the beginning of this chapter, it was only with the actual spread of photographic techniques that the stereoscope was domesticated in the visual culture of the time. As early as 1860 – a decade usually taken to mark the beginning of the commercial fortunes of stereography (Darrah 1977; Plunkett 2008; 2013) – Nathaniel Burges emphasised the importance of photographic technology for the full realisation of stereoscopic potential in its mimetic capacity.[58] Indeed, photography is central to a correct history of the material development of stereoscopy, which would be essential both for the theoretical implications of the device and identifying the technology as a genealogical form of contemporary Virtual Reality. As we have seen, Wheatstone's first device was not designed to interact easily with the photographic formats of the time.[59] It is Wheatstone himself who confirmed the essentiality of photography for the completion of the stereographic effect: in 1852, he published a second paper[60] in which he emphasised the synchronicity of the birth of photographic techniques and their relevance to the stereographic illusion:

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[58] "This truly wonderful result (of the stereoscope) cannot be obtained unless the drawings are exact copies of nature, even more exact than the human hand can execute. We are therefore obliged to call in the aid of Photography, without which Stereoscope pictures would never have obtained that perfection which we now see exhibited." Nathan G. Burgess. *The Photograph Manual: A Practical Treatise, Containing the Cartes De Visite Process, and the Method of Taking Stereoscopic Pictures* (New York: D. Appleton & Co, 1862), 196.

[59] Darrah claims that "even so, several photographers exhibited large stereoscopic pictures with the Wheatstone apparatus" (Darrah 1977, 2).

[60] Charles Wheatstone, "The Bakerian Lecture. Contributions to the Physiology of Vision. Part the Second. On Some Remarkable, and Hitherto Unobserved, Phenomena of Binocular Vision," *Philosophical Transactions of the Royal Society of London* 142 (December 31, 1852): 1-17, https://doi.org/10.1098/rstl.1852.0001.

> It was at the beginning of 1839, about six months after the appearance of my memoir in the Philosophical Transactions, that the photographic art became known, and soon after, at my request, Mr. TALBOT, the inventor, and Mr. COLLEN (one of the first cultivators of the art) obligingly prepared for me stereoscopic Talbotypes of full-sized statues, buildings, and even portraits of living persons. (Wheatstone 1852, 7)

In the same paragraph of his second treatise, Wheatstone gives instructions on the best techniques for producing stereographic photographs, an element which, for a complete technological history of stereography, requires a consideration of the different cameras used to produce stereographic positives and negatives. Initially, as Wheatstone (1852, 7) also suggests, stereography was achieved by using a single camera moved to two points on a circumference whose centre is defined by the focal point of the object or scene depicted.[61] This technique was not entirely effective and tended to produce "ghosting" errors: the movement of the camera and the long exposure times could lead to the inclusion of faded elements, such as carriages, horses and people passing in front of the lens (Darrah 1977, 3). Wheatstone also recognised that in order to produce stereoscopic portraits, it was advisable to use two cameras simultaneously, positioned at the correct angle.[62] At the same time that the commercial potential of stereography was beginning to be recognised, the first binocular cameras, which automated the stereographic production process, was being created. Darrah (1977, 3) reports that the first binocular camera was made in 1854 but does not provide further details. It is likely that Darrah was referring to the experiments and patents of John Benjamin Dancer, who invented one of the first binocular cameras in 1852. A prototype had been built in 1849 and was officially registered in 1856 (Hallet 2013, 254). One year later, according to Timby (2000), Alexandre Marie Quinet registered a patent for a machine with two lenses, thus also initiating a series of stereographic camera inventions in France.[63] At around the same time

[61] "To obtain the proper projections for this distance, the camera must be placed, with its lens accurately directed towards the object, successively in two points of the circumference of a circle of which tile object is the centre, and the points at which the camera is so placed must have the angular distance of 18? from each other, exactly that of the optic axes in the stereoscope" (Wheatstone 1852, 7).

[62] "For obtaining binocular photographic portraits, it has been found advantageous to employ, simultaneously, two cameras fixed at the proper angular positions" (Wheatstone 1852, 7).

[63] Timby reports the main patents for stereoscopic photographic devices in nineteenth-century France, such as Louis Cyrus Macaire, 1854 (no. 20,864); Louis François Saugrin, 1854 (no. 19,651); Joseph Benjamin

in Paris, André-Adolphe-Eugène Disdéri introduced a new photographic technique using albumen paper and a four-lens camera. The economic advantage was obvious: up to eight photographs (or four stereographic pairs) could be taken before the camera had to be reloaded.

Stereography was thus on its way to commercial success, including from the point of view of photographic technology. However, in order to achieve its complete medial domestication, the problem of the stereoscopic device, the material apparatus that allows its easy consumption, would have to be solved. Wheatstone's mirror stereoscope was a scientific device that could not be easily distributed and enjoyed by the general public. A more suitable, portable and compact technical device was needed. This solution was to be found by David Brewster, who, in the history of stereography and the stereoscope, would prove to be Wheatstone's technical and theoretical counterpart.

In 1849, Brewster proposed the first version of his lenticular stereoscope. Unlike Wheatstone's mirror type, the lenticular stereoscope consisted of a closed box that could be opened at the bottom to insert the stereographic image into its various supports (at the time of its first version, mainly daguerreotypes). At the top of the box were two holes containing two lenses through which the user could view the image positioned at the bottom of the device and illuminated by two further openings on the sides. Brewster's stereoscope also has a precise history in terms of its material production, as recounted by the author himself in his 1856 essay titled "The Stereoscope; Its History, Theory, and Construction: With Its Application to the Fine and Useful Arts and to Education." The lenticular stereoscope was first produced in France by Louis Jules Dubosq based on a prototype brought by Brewster himself and made in Scotland by Louden of Dundee (Darrah 1977, 2). Unlike the mirror type, Brewster's stereoscope had an immediate media impact, largely due to its presentation at the Great Exhibition in London in 1851, where Queen Victoria herself, as chroniclers of the time tell us,[64] was particularly fascinated by

Dancer, 1857 (no. 31,779); Henri Furne junior and Tournier, 1859 (no. 40,032); André Adolphe Disdéri, 1861 (no. 48,736); Henri du Mont, 1861 (no. 49,520); Nicolas Auguste Bertsch, 1861 (no. 52,182); Ernest Bernicard Junior, 1863 (no. 59,838); Paul Garbouleau, 1867 (no. 78,335).

[64] Brewster himself tells the story in his essay *The Stereoscope* (1856, 31): "While the lenticular stereoscope was thus exciting much interest in Paris, not a single instrument had been made in London, and it was not till a year after its introduction into France that it was exhibited in England. In the fine collection of philosophical instruments which M. Dubosq contributed to the Great Exhibition of 1851, he placed a lenticular stereoscope with a beautiful set of binocular Daguerreotypes. The instrument attracted the particular attention of the Queen, and before the closing of the Crystal Palace, executed a beautiful stereoscope, which I presented to Her Majesty, in his name. In consequence of this public exhibition of the

the device. After the exhibition, Dubosq received several orders from England, confirming the immediate commercial success of the machine. It was also Dubosq who, during the same period, made an essential addition to the technology: dissatisfied with the viewing conditions of daguerreotypes illuminated through side openings, he proposed replacing them with positives on glass or translucent paper illuminated directly from a ground glass base (Darrah 1977, 2). This element would be essential for the construction of a precise posture in the usage of the device. The backlighting of the stereographic image, in addition to giving the photograph a greater appeal and the power of the depth simulation effect, actually dictated a different physical relationship with the device. A user of the lenticular stereoscope would not only be forced to manipulate the technology in order to adapt it to his or her face but would also be led to position him- or herself and seek the best angle in relation to natural or artificial sources of light – an element that increasingly underlined the techno-somatic relevance of the stereoscope and, above all, its material similarity, in terms of archaeological media, to digital Virtual Reality devices. Returning to the origin of Brewster's compact device, other theoretical elements can immediately be extracted from the material conformation of the device to best illustrate the inventor's theoretical perspective. Brewster, as observed in his academic interaction with Wheatstone on the question of the cameo effect, recognised the phenomenon of visual binocularity, though not that it was a direct cause of depth perception:

> In analysing Mr Wheatstone's beautiful discovery, that in binocular vision we see all objects of three dimensions by means of two dissimilar images on the retina, I trust I have satisfied the Society that the dissimilarity of these two pictures is in no respect the cause of our vivid perception of such objects, but, on the contrary, an unavoidable accompaniment of binocular vision*, which renders it less perfect than vision with one eye*. (Brewster 1847, 663, emphasis mine)

Brewster's perspective, always polemical with respect to Wheatstone's, was that binocular vision must be considered subordinate to monocular vision. For Brewster, the mirror stereoscope did not prove the role of double vision in depth perception; it merely defined it as an accessory phenomenon. The eye sees space and depth directly; it does not

instrument, M. Dubosq received several orders from England, and a large number of stereoscopes were thus introduced to this country."

need binocular interaction and, above all, learned experience. An element further emphasised in the 1856 essay mentioned above was the scientist's argument that "vision of distance is not the result of experience is obvious from the fact that distance is seen as perfectly by children as by adults; and it has been proved by naturalists that newly born animals appreciate distances with the greatest correctness" (Brewster 1856, 51).

Experience, therefore, plays no role in depth perception. Even touch, although important in the haptic setting of the stereographic image, becomes a sense subordinate to sight: "the sense of sight, therefore, instead of being the pupil of the sense of touch, as Berkeley and others have believed is, in this case, its teacher and its guide" (Brewster 1856, 250).

It is important to highlight this theoretical shift and its synchronisation with the commercial success of the stereoscope in order to fully understand the reasons for its diffusion. Schiavo (2003) suggests that the commercial success of the lenticular type meant the loss of the complex phenomenological implications of Wheatstone's stereoscope, which nevertheless retained its appeal in the scientific sphere (Wide and Ono 1985) because of its adjustability and precision, traits particularly suited to experimental investigation. Plunkett (2013, 394) further emphasises that along with, and probably complicit in, commercialisation, there is also the congruence of Brewster's extensive critical theoretical corpus with a Cartesian monocular conception of vision.

This position would have been more easily accepted by a wide audience than the instability of the perceiving subject proposed by Wheatstone's intuition. For a correct historical analysis of the diffusion of the stereoscope and its theories, it is also important to stress that unlike Wheatstone, who wrote relatively little about his invention, Brewster was particularly prolific, resulting in a strong influence of his figure on optical physiology.[65]

Is it possible, then, to find a connection between the material conformation of the lenticular stereoscope and Brewster's theoretical perspectives? The closed box of which this version of the stereoscope is composed defines several important consequences in the interpretation of the device with a historically situated eye. On one hand, the stereoscope became commercially effective: it was easy to build, easy to use and relatively inexpensive. On the other hand, it enclosed its operation within an invisible

[65] For a comprehensive account of the texts of the two theorists, see Nicholas Wade, *Brewster and Wheatstone on Vision* (Amsterdam: Elsevier Science, 1983).

perimeter, its illusion becoming quasi-magical for the audience of the time, and the stereoscope, readily adorned with mother-of-pearl or other materials, became a full-fledged fetish object and status symbol of a bourgeoisie that interacted with innovative devices and integrated them into its media ecosystem.[66] Nevertheless, given Brewster's militant commitment to his device and the theoretical position he promoted to enshrine the primacy of the eye, monocularity and retinal truth in the perception of space, what was such a device supposed to prove to him and his audience?

The lenticular stereoscope is more likely to be seen, as we have already understood with Plunkett, as a direct descendant of the camera obscura. Contrary to Crary – whose position we will discuss later – for Brewster, the device was fully and paradoxically part of the modern scopic regime and the logic of the monocular perspective. In the same way that the camera obscura and its aperture constructed a functional metaphor for describing the processes of vision, this miniaturised form of it – which retains the characteristics of the relationship between light, projection and darkness – became for Brewster, and much of the public of the time, an updated version of the camera obscura that did not challenge its underlying theoretical framework.

Returning to the modern paradigm of the camera obscura, it is functional to note that since Descartes' writings, the metaphor between the proto-device and the (singular) eye has taken on unprecedented literal value (Crary 1990, 47-49). Indeed, Descartes proposed the use of a bovine (or human) eye as a lens to be inserted into the opening of the camera obscura.[67] This form of bio-medium would provide the best and most accurate projected image of the outside world. The animal or human eye, single and extracted from its host's corporeality, not only exemplifies the full realisation of the analogy between the optical device and monocular vision but also completes the crystallisation of the abstraction of vision, literally and surgically removed from the perceiving subject. Brewster's position, as we have seen, reintegrates the binocularity demonstrated by Wheatstone into a

[66] In this regard, see Laura Burd Schiavo, "From Phantom Image to Perfect Vision: Physiological Optics, Commercial Photography and the Popularization of the Stereoscope," in *New Media, 1740–1915*, eds., Lisa Gitelman and Geoffrey P. Pingree (Cambridge: MIT Press, 2003), 113–37. On the phantasmagoric values of optical media, see Crary (1990, 132).

[67] "But you may become more certain of this if, taking the eye of a newly dead person (or failing that, the eye of an ox or some other large animal), you carefully cut away the three surrounding membranes at the back so as to expose a large part of the humour without spilling any. Then cover the hole with some white body thin enough to let light pass through (e.g. a piece of paper or an egg-shell), and put this eye in the hole of a specially made shutter so that its front faces a place where there are various objects lit up by the sun, and its back faces the inside of the room where you are standing" (Descartes 1629-33, 166).

blatantly Cartesian and fundamentally monocular system. Thus, Brewster fits into the long optical tradition of perceptual *suppression*. This explains the fact that humans see a single image, despite having two optical organs, by imagining the suppression of one eye by the other, thus maintaining a deeply monocular perceptual root.[68]

From this point of view, Brewster's device does not belong to the field of conceptual binocular technologies. The theory behind its implementation suggests that depth perception takes place directly on the retina, without a process of fusion of the projections from the two eyes. Furthermore, this perspective holds that it is the single eye that determines the best visual perception. Therefore, this interpretative model of physiological processes also influences the material design of the device conceived by Brewster and his collaborators. In contrast to Wheatstone's "exploded" stereoscope, which was extremely adjustable in all its parts and, therefore, suitable for experimental manipulation and, as we would say today, deeper phenomenological investigation, the lenticular stereoscope is a fixed device that does not allow structural manipulation of its internal elements. Brewster's technical-theoretical approach also has consequences on a more political level with regard to human perception and the devices that exploit its physiological processes. As Crary notes,

> for Brewster, a Scottish Calvinist, the maintenance of barbarism, tyranny, and popery had always been founded on closely guarded knowledge of optics and acoustics, the secrets by which priestly and higher castes ruled. (1990, 133)

This attitude featured in the collection of letters Brewster sent to Walter Scott in the 1830s and published in a volume with the emblematic title *Letters on Natural Magic* (1883). In this correspondence, Brewster emphasises the political role of optical devices and visual

[68] One of the earliest references to this optical concept can be attributed to Giambattista della Porta, *De Refractione Optices. Libri Novem* (Naples: Salviani, 1593). Porta (1593, 142–143) claimed that "Nature has given us two eyes, one on the right and the other on the left, so that if we are to see something on the right we use the right eye, and on the left the left eye. It follows that we always see with one eye, even if we think both are open and that we see with both. We may prove it by these arguments: To separate the two eyes, let us place a book before the right eye and read it; then someone shows another book to the left eye, it is impossible to read it or even see the pages, unless for a short moment of time the power of seeing is taken from the right eye and borrowed by the left." The counterpart of suppression theory is *fusion* theory, which conceives of the two eyes as being equally stimulated at the same points of the two retinas, a position close to that of Wheatstone. Among the first to delineate its characteristics was François d'Aguilon in *Opticorum libri sex. Philosophis juxta ac mathematicis utiles* (Antwerp: Moreti, 1613).

and acoustic illusions used, as expressed in the first of the letters, "by ancient government to deceive and enslave their subjects" (Brewster 1883, 1).

With the aim of significantly democratising the devices of optical illusion, Brewster removes them from the context of natural magic and placed them within the emerging discipline of optical physiology. This process of collectivising illusion aimed, at least rhetorically, to neutralise its potential impact in terms of political and social control. Essentially, this was a project with an Enlightenment flair but which, as Crary (1990, 133) warns us, "simply collapsed that older model of power onto a single human subject, transforming each observer into simultaneously the magician and the deceived." Crary's hyper-subjectivist stance, while extremely important in understanding the revolutionary nature of the device, must be further linked to its practical uses and, as we have seen, the theoretical stance of the time. Indeed, the lenticular stereoscope is immediately connoted both as an instrument with a strong scientific and educational appeal and, as we will see in the next chapter, an obscene device that would engender strong moral panic. In the first case, and fully in line with Brewster's theoretical-physiological perspective, the stereoscope is an instrument that proves and reproduces a retinal truth (Schiavo 2003, 126) – a perspective confirmed, among other things, by the popular reception and promotion of the device, which, as in *The Magician's Own Book* (Arnold 1857), defined the stereoscope as "an imitation of the powers of the eye":

> That is to say, if it were possible to be behind the retina of each eye, and draw the two pictures of any object seen by our eyes, those pictures put into the stereoscope, would reproduce the solidity from which they were drawn (Arnold 1857, 173)

According to this assumption, stereography is defined as a faithful impression of retinal projections, which in turn are a perfect copy of the external world. In the non-scientific reception of the device, the dream of a mechanical and faithful reproduction seemed to have been fully realised – a perspective, albeit popularised, in line with Brewster's optical theory, though filtering out the more complex and less marketable implications described by Wheatstone. The lenticular stereoscope and its commercial success, according to the chroniclers and salesmen of the time, ushered in a technique and medium that re-established a direct, transparent and immediate relationship with reality, excluding the highly active nature of physiological depth perception. The stereoscope was "no longer

an instrument for phenomenological interrogation and the study of the vagaries of vision, the stereoscope had become a tool for furnishing visual truths" (Schiavo 2003, 127). Visual truths synthesised in the concept of "perfect vision," which, again simplifying Brewster's optical theories, described the natural perfection of vision demonstrated by stereography and the stereoscope:

> There is, therefore, no further room for doubt as to the need for two eyes; we have taken by the daguerreotype the very picture from each, and have made them tell their secret. Our double vision is but *perfect vision.* (*Photographic Art-Journal* 1852, 175)

Thus, the lenticular stereoscope has the capacity to reproduce "natural" human vision[69] and, in conjunction with the typical indexicality of photography, determines an experience that plays out its operation on an apparently solid link with "visual truth." Nevertheless, the image enjoyed through a stereoscope is paradoxically absent in the concrete world: the fusion of two photographs into a three-dimensional image places it semiotically outside a regime of typical Piercian indexicality in order to produce "the actual visual equivalent of the object or objects signified" (Schiavo 2003, 128). This aspect of "seeing things as they are in nature" (Hunt 1856, 118) constructs a further and updated fetishisation of a visual model that is still Cartesian, for which sight is a purely abstract system that does not take into account the more complex multisensory and cross-modal system to which Wheatstone referred, with due historical proportions. This theoretical and commercial exclusion was confirmed by certain correspondences, such as that of an anonymous person (identified as G.A.S.), to the *Notes and Queries* of 1868. G.A.S. asked whether Wheatstone's invention, mentioned but not described in an article twenty years earlier, could be traced to the parlour stereoscope. This statement underlines that, by the end of the 1860s, almost thirty years after Wheatstone's first paper, his mirror stereoscope and the theoretical implications associated with it had been largely forgotten, at least by the general public.

[69] The concepts of "perfect" and "natural" vision are clearly influenced by a blatant ableist perspective. This issue innervates many of the earliest elaborations of optical theory but also defines the prodromes of another branch of optical physiology, that of "corrective" technologies that had much to do with the re-negotiation of "natural" and "perfect" vision. On this issue, see Micky Lee, Frank Rudy Cooper, and Pat Reeve, *Dis/Ability in Law, Media and History: Intersectional, Embodied and Socially Constructed?* (Oxon; New York: Routledge, 2022), in particular, the chapter by Micky Lee, "Corrective Lens: Dis/abilities and the Materiality of Media."

The material conformation of the Brewster-Dubosq device also forces us to reflect on the posturological dimension that this device requires of its observer. We have seen how it reintegrates Wheatstone's stereoscopic illusion into a closed perimeter, an aspect that determines its commercial appeal precisely because it takes the technical operation of its illusion to a higher level of opacity. However, this aspect is accompanied by other elements that help in defining its revolutionary charge in the media ecosystem of the time. Not only is it integrated into the home, but it also imposes a new somatic relationship with an optical apparatus. The long tradition of media that demanded direct contact with its viewer – such as peep shows and the *boîte d'optique*[70] – had already inaugurated an oblique spectatorial posturology, which imposed a series of contortions and body figures far removed from the rectitude of traditional media forms, such as the framed ones. This element elicited further reflections on the status of the observer of a medium, such as the Brewster stereoscope. On one hand, it required a particularly high level of somatic and vestibular commitment. The need to hold the device in the right place and make it adhere as closely as possible to the face, together with the need to find the best sources of light for the correct visualisation of the views, combined with the physiological "fatigue" of the stereoscopic illusion, contributed to defining this technology as both immediate and opaque.

The definition of an uncomfortable medium proposed in the first chapter seems particularly suited to the material conformation of this technology. It encouraged a double postural movement: on one hand, it required its viewers to bend over the device in an enveloping action, lending itself particularly well to the interpretation of a somatechnical fusion. On the other hand, the immersiveness typical of the stereoscopic medium led us to emphasise the absorptive value of this technology. The latter polarity of such a movement, then, has to do with the representational "absorption" required by the medium, a form of scopic movement which, as Trotter (2004) reminds us, "is not simply to be sucked into it (sorbere), but to be sucked away (ab) from where one once stood" (42), echoing the etymological root of the term.[71]

[70] Compare Richard Balzer, *Peepshows: A Visual History* (New York: Abrams, 1998).
[71] On the movement of absorption in the image, see Maurice Blanchot, *The Gaze of Orpheus, and Other Literary Essays* (Barrytown: Station Hill, 2005).

The element of absorption also helps us situate the apparatus and its postures in a genealogical form that departs from the exclusively cinematic perspective. We will see that this aspect will be essential for the construction of the pornographic scopic contract; for now, it is sufficient to stress how stereoscopic technology, as well as the physiological debates examined so far, seem to imply a specific position of the device in the media ecosystem of the second half of the nineteenth century. Unlike the experiments on the movement of the images, it does not seem to participate in the Benjaminian shock typical of the flaneuristic movement of the percipient subject. Indeed, Benjamin stresses the offensive qualities – in a belligerent sense – of technical and artistic forms, such as film and Dadaism, which, in their movement towards the audience, "hit the spectator like a bullet" because they are based on changes of place and focus which periodically assail the spectator (Benjamin 1970, 252). Unlike the regime of cinematic spectatorship, the stereoscopic observer is a subject safe from shock because of the qualities of absorption it promotes: "what the stereoscope offers […] is not shock, but absorption; and the whole point about absorption is that it is in itself utterly unshockable" (Trotter 2004, 42). It is a system, it should be noted, that nevertheless collides with the direction towards the haptic that Benjamin recognises in the construction of the modern perceptual regime. If, following Trotter, the stereoscope shelters its user in velvety atmospheres while literally being worn by its observer, it promotes proximity and manipulation in line with the closedness of perceptual shock that new media promoted in the nineteenth century. The theoretical tension between these polarities again highlights how the stereoscopic device determines its ambiguous genealogy and co-participation in the construction and questioning of the scopic regime of modernity.

The ergonomic qualities of the Brewster-type stereoscope arguably imply a form of isolating absorption. We will see later, in relation to the main critical aspects of Crary's discourse, which elements define the scopic dynamic of the observer consciously immersed in the image. For now, we want to stress how the structure of the Brewster device promotes, above all, a form of *envelopment* of the gaze. Benjamin reconstructs the forms of the *original* domestic occupation by focusing on architectural structures that defined a form of envelopment of the human being, such as the nineteenth-century bourgeois apartment:

> The original form of all dwelling is existence not in the house but in the shell. The shell bears the impression of its occupant. In the most extreme instance, the dwelling becomes a shell. The nineteenth century, like no other century, was addicted to dwelling. It conceived the residence as a receptacle for the person, and it encased him with all his appurtenances so deeply in the dwelling's interior that one might be reminded of the inside of a compass case, where the instruments with all its accessories lies embedded in deep, usually violet folds of velvet. (Benjamin 1999, 220)

Benjamin's attention on shells, envelopes and enclosures maintains a level of tension with the device analysed so far. Because of the qualities of absorption and immersion it promotes, it seems to participate in the definition of an experience based on this enveloping movement towards technical reproduction. Benjamin's perspective defines a polarity that contrasts that of modernist glass architecture, where enveloping systems are replaced by an expositional logic that also intrudes on the territory of the dwelling.[72]

The Brewster stereoscope seems to propose a new interstitial space for the domestic interior. It is *an interior of the interior* in the sense that it can be made part of those enveloping systems, cases and velvets that protect the bourgeois home from the modern threat. At the same time, its nature as an optical medium and a technological novelty seems to conceal a double identity: the stereoscope insinuates itself among the objects and shells of the domestic, but it is also a symptom of the new media ecosystem that nineteenth-century middle-class society was beginning to experience. As anticipated, however, it could be intended not as a medium of shock, precisely because its static absorption entailed an invitation to immersion and, thus, rhetorical and material exclusion from one's surroundings. The quality of the Brewster device as an envelope thus prescribes a scopic regime parallel to the velvety[73] isolation that the bourgeois home promoted. The reference to velvet, a fabric not coincidentally identified for its tactile and haptic qualities, also seems to promote a further parallel with the solidity of the

[72] On this comparison, see Elisabetta Di Stefano, "Il vetro e il velluto. La casa tra opacità e trasparenza," *Opacità Dell'oggettuale*, in eds., Desideri, F. et al. (Bergamo: Moretti & Vitali, 2016), 205-218: "Although the comparison between the old and the new mode of living sometimes seems to privilege the intimacy of the shell-house, in reality Benjamin considers life in glass houses a 'revolutionary virtue' precisely because it disrupts the protective and muffled space of the interiéur, where everything had its 'case,' its pre-established place, and opens it up to flows of air and new energies" (213, my translation).

[73] Velvet is central to Benjamin's reflection as a symbol of the cosy, insulating opacity of the nineteenth-century bourgeois home.

stereoscopic image, which, one might say, demanded to be touched primarily with the eyes. These stereographic shells seem to confirm, by their enveloping nature, the risk that Baudelaire read into them. Baudelaire's *scopophobia* (Friedberg 1993, 30)[74] is aimed at those technical memorisation devices that defuse the flaneuristic movement of the perfect observer of modernity.

In this first material conformation, the stereoscope is thus domesticated in a hypothetically reactionary visual regime, given the enveloped isolation it promoted. We will examine this interpretation as representing only one of various perspectives on the supposed revolution made possible by stereographic three-dimensionality. Envelopment as immersion could be interpreted as just one point in the gradient of absorption promoted by these uncomfortable media.

2.2.2 The Handle as Frame: Re-Erecting the (Moral) Posture in the Holmes-Bates Stereoscope

Following a media archaeological approach, specifically related to the synthesis of the material and discursive conformations of a given commonplace, it is essential to introduce the third protagonist of nineteenth-century stereoscopy, Oliver Wendell Holmes. In the panorama of theorists and inventors of stereography, Holmes played an important role in many respects. He was an accomplished writer, physician and teacher of physiology and anatomy at Harvard (Hamilton 1949; Fiorentino 2014).

When James Russell founded the *Atlantic Monthly* in 1857, Holmes – "the poet laureate of Boston" – was asked to write monthly essays. It was in this column that Holmes published the first essay on stereography in the United States in 1859, thereby introducing the term *stereograph*: "we have now obtained the double-eyed or twin pictures, or

[74] On the term and its opposite, "scopophilia," Anne Friedberg argues that "I've chosen these two terms here to restate the paradox in Baudelaire's relation to spectation. Scopophilia, by now a well-known term, first taken from Freud's discussions of the perversions in 'Three Essays on Sexuality,' has come to be associated with the gendered pleasures in looking and feminist critiques of gendered voyeurism (as in 'men look, women appear'). As a technical term, scopophilia refers to 'pleasure in looking' and hence, as a neologistic twist on its technicality, scopophobia refers to the fear or dread of looking" (1996, 220).

stereograph, if we may coin a name" (1859, 743). The interest in Holmes here is primarily

Figure 10. Holmes-Bates Stereoscope, c. 1861 Coll. Musée Français de la Photographie, Bièvres.

in his role in introducing a new type of device that would have important consequences both for the commercial spread of the technology and the postures it implied towards the viewer. Holmes, together with Joseph L. Bates, developed a new version of the lenticular stereoscope between 1859 and 1861 (Holmes 1861; Darrah 1977; Wade 2021). If we were to imagine a techno-evolutionary *ekphrasis* of the stereographic device, this version is, in a sense, a synthesis of the lenticular Brewster type and the Wheatston type. The Holmes-Bates stereoscope – the technical nomenclature adopted for this technology – is a portable

Figure 11. Advertisement for the stereoscope designed by Oliver Wendell Holmes and Joseph L. Bates. Boston Medical Library Artifact Collection.

but open device. It "explodes" and reveals its workings to the eye – unlike the opaque closure of the Brewster type, echoing the phenomenological clarity of Wheatstone's scientific apparatus – while integrating it with a high degree of comfort and portability. The device consists of three main elements (figs. 10-11): a handle, a mask with two lenses – which enhances the process of three-dimensionality and the exclusion of the observer's surroundings – and a space for the stereographic strip, held by two metal parts.

The success of this technology was determined not only by the lower production costs compared to the closed Brewster-type boxes but also the greater ergonomic comfort and, above all, the resolution of the problem of image illumination. As mentioned earlier, the

Brewster-type stereoscope had side openings or a translucent glass bottom suitable for backlighting the strip (in its various holders). This meant, as Dubosq (the manufacturer of the device) complained, that the image was poorly visible. Conversely, the Holmes-Bates stereoscope allowed a more complete visibility of the stereographic strip, determined by the ambient lighting. As Holmes himself stated in his emphatic promotional prose: "an instrument which may be held in the hand that is very convenient. We have had one constructed which is better, as we think, than any in the shops" (Holmes 1861, 29). The handle also allows us to focus on a number of seemingly marginal elements that were nevertheless essential to the construction of the immersive experience. In line with the chiasm between immediacy and hypermediation (Bolter and Gruisin 1999), an archaeology of immersion cannot but take into account the interstitial spaces and elements that construct the performative rituality of absorption in the image, as in the case of the various ways in which the observer manipulates the device.[75] The technical updating of the stereoscope necessarily implies an adaptation of its postures. Indeed, one could note that Brewster's closed stereoscope had an epithesis character (Flusser and Roth 2014), in the sense that it implied a greater somatosensory demand on the observer. Certainly, the appropriate angle for a lenticular stereoscope had to take into account the greater weight of the device and its place in the domestic media ecosystem. Often resting on flat surfaces, the device required the bodies of its viewers to bend, as Baudelaire told us, and adapt to the demands of this uncomfortable medium (fig. 12). The nature and, one

Figure 12. Leisure Hour*, July 29th 1852. Woodcut. This appears to be the first published illustration of a person looking through a stereoscope. Collection Denis Pellerin.*

[75] This "aesthetic ecology of things" (de la Fuente 2016) of Simmelian matricie also helps in methodologically defining an archaeology of ergonomics, always focused on the material conformations of the devices and objects in question.

might say, rhetorical-commercial revolution of the Holmes-Bates type was probably also meant to put the device at the service of its user. It was easier to manipulate, and the presence of a wooden handle, often carved to improve ergonomics, imposed greater control over the technology. Holmes' stereoscope finally tamed this machine of the visible and, in a sense, purged it of some of its obscenity. The inclination of Holmes' stereoscope is not the licentiousness promoted by the Brewster type and other peep media. It returns to an upright position and encourages a relationship with the image, one no longer determined by a process of oblique immersion and absorption but by *projection*. With Holmes, the stereoscope became a device of virtualisation and tele-presence, recalling the process of the technical augmentation of the visible and the postures typical of other contemporary technologies, such as the telescope but especially the panoramic binocular or tower viewer. Although the Brewster stereoscope sometimes included an elevation suitable for vertical viewing – as depicted in the caricature from the *Petit Journal pour rire* (1859) (fig. 13) – it implied, at least in its most widespread iconography, a postural envelopment of the device by its observer.

Figure 13. Petit Journal pour rire*, no. 172, 1859, "New Stereoscopes in which one can distinctly see what's going on in one's house while having a peek in the instrument."*

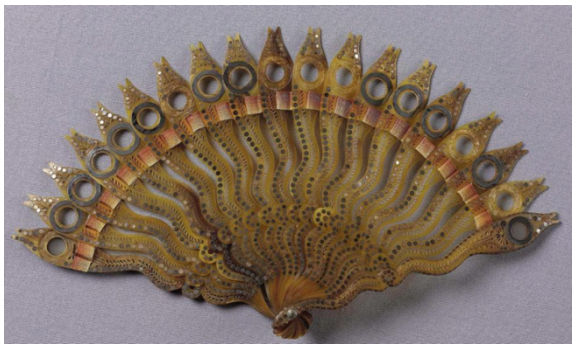
The presence of the handle in the patent and its technical specification prescribe a precise posture, probably more comfortable, but above all more in keeping with the moral canons of the time. Contrary to the Brewster type, the Holmes-Bates version, especially from a postural point of view, can be traced back to the family of optical instruments, characterised by their partial wearability and supported by a handle. This is the case with the lorgnette[76] (fig. 14), a form of corrective spectacles that, not coincidentally, were

[76] On this subject, see J. William Rosenthal, *Spectacles and Other Vision Aids: A History and Guide to Collecting* (San Francisco: Norman Pub, 1996), 118; C. Willett Cunnington, *English Women's Clothing in*

considered more suitable for female wearers, as they allowed a graceful, morally upright pose, crossed with an erotic allure, in the classic chiasm of seduction and modesty that

Figure 14. Late ninetheen century lorgnette

characterised nineteenth-century femininity. A system further confirmed by devices such as the fan lorgnette (figs. 15-16), a form of optical technology that merged with the social and seductive device of the fan and underlined its erotic nature. The fan lorgnette was both a screen, in the sense of a protective membrane, and a transmitter of erotic signals as well as an effective optical instrument of enhancement.



Figures 15–16. Brisé lorgnette fan, probably French, late early 18th or 19th century. Museum of Fine Arts, Boston.

The lorgnette was also the main inspiration for what were known as opera glasses or theatre binoculars (fig. 17) by the end of the nineteenth century, theatrical devices characterised by a long handle and two magnifying lenses for close observation of details during plays and operas, particularly effective in the architecture of opera theatres. The often richly decorated opera glasses, techno-postural relatives of the Holmes stereoscope, were status symbols and the technological prostheses of the aristocracy and emerging industrial bourgeoisie. What seems particularly relevant here is the material and

the Nineteenth Century: A Comprehensive Guide with 1,117 Illustrations (New York: Dover Publications, 1990); Frank Joseph Goes and J. J. De Laey, *The Eye in History* (New Delhi: Jaypee-Highlights Medical Publishers, Inc, 2013), 311. The lorgnette also featured, as did the stereoscope, in literary metaphors. On this subject, see Charles Monselet. *La Lorgnette Littéraire* (Paris: Poulet-Malassis et de Broise, 1857); Julie A. Buckler, *The Literary Lorgnette: Attending Opera in Imperial Russia* (Stanford: Calif., 2000).

ergonomic similarity between devices that were profoundly different but, as suggested, shared the same posture.

Figure 17 Opera glasses, French, late 1890s–early 1900s, Metropolitan Museum of Art

The opera glasses, the lorgnette and the Holmes stereoscope were all technologies that required a *hygienic* way of wearing them: the long handles made it possible to maintain as upright a posture as possible, but they also determined the willingness to move away from contact with the apparatus. In a historical and geographical context, such as Victorian England, where scientific discoveries confirmed the role of contact and germs[77] in the spread of potentially epidemic diseases, attention to hygiene, its postures and gestures was relevant. The veiled desire concealed in the handle of the opera glass or the Holmes-Bates stereoscope can thus be traced back to a desire to frame and thereby control not only the image produced by these devices but also the somatechnical interrelationship that more radical – and obscene – wearability allowed, as in the case of the Brewster device. Such a stance has the potential to subvert the truly immersive nature of stereoscopy.

Indeed, the intention here is to suggest that the movement allowed by these technologies should be considered as *projection*[78] rather than enveloped immersion. Projection, if in its contemporary sense it means a concrete transmission of image and action (Levy 1998,

[77] See William F. Bynum, "Darwin and the Doctors: Evolution, Diathesis, and Germs in 19th-Century Britain," *Gesnerus* 40, no. 1–2 (November 19, 1983): 43-53, https://doi.org/10.1163/22977953-0400102006; David I. McLean, "Protecting Wood and Killing Germs: "Burnett's Liquid' and the Origins of the Preservative and Disinfectant Industries in Early Victorian Britain," *Business History* 52, no. 2 (April 1, 2010): 285–305, https://doi.org/10.1080/00076791003610691.

[78] The term has a wide critical fortune. Leaving aside the not entirely negligible psychoanalytic implications (Freud 1936; Knight 1940; Novick and Kelly 1970), the main reference in this analysis of the term can be ascribed to Lévy (1998): "The symmetrical function of perception is the projection in the world of action and image. The projection of action is obviously associated with machinery, transportation networks, circuits of energy production and transfer, and weapons" (38-39).

38-39), also finds its possible field of application in analogue technologies. Aided by discursive systems, such as those of marketing,[79] the Holmes-Bates stereoscope induces, from its material structure, the optical displacement of its user towards a technically reproduced "elsewhere."[80] Beyond the immersion in the fluidity of the image semantically offered by immersion, the Holmes stereoscope seems to wink at a projective movement and a double somatechnical fusion. The opera glasses, the lorgnette and the Holmes-Bates stereoscope (partially) innervate their viewer, projecting rather than absorbing into another place, be it the enlargement of an existing context or the illusion of a three-dimensional space. The material and discursive conformation of the Holmes-Bates stereoscope, as we will see in the next section, thus introduces a kind of movement into the image that is more polarised towards tele-presence. In the context of virtual technology studies, the concept of "presence" is characterised by an illusion of absence of mediation (Lombard and Ditton 1997), accompanied by a sense of transparency (Bolter and Grusin 1999). This term refers both to the notion of "tele-presence" (Minsky 1980; Sheridan 1992), which is the ability to operate at a distance in physical space through the exchange of information by means of technological devices, and "presence," understood as the feeling of being in various forms of virtual environments (Slater and Wilbur 1997). In this case, with the archaeological intention of determining the commonplace of this movement in the image and media, the concept is only applicable to a form of virtual habitability of another place and not to actual operability through the image. However, it is important to note that even in these forms of proto-tele-presence, the posturological dimension and ergonomic conformation of the device play an essential role in determining the ecosystem of virtual technologies and figures of the body, along with the discursive devices that we will tackle in the next section. The complex value of projection, as noted by Väilaho (2022), encounters a form of *virtualisation* in optical devices (since the pre-photographic ones of the eighteenth century). Virtualisation refers then to the inherent will of "unlock [place and processes] from the here and now and to displace them in time – in the empty time of eternity, or prospects of colonial adventures, or speculative

[79] The following section will show Holmes' prose at the centre of a theoretical and promotional effort of the stereoscopic technology.

[80] As we shall see, both the "elsewhere" and historical-geographical otherness would become central to the definition of the discursive and visual topoi of stereography in the second half of the nineteenth century, including its implications in the processes of *othering*, determining the colonial subject in the erotic-pornographic sphere.

futures" (Väilaho 2022, 34). Väilaho's perspective on virtual projection[81] is crucial here in further specifying the scope of the proto-tele-presence movement, as it describes the agency of optical devices in transporting images and bodies as constituting "an expansive form that made the virtual, in the sense of what surpasses the present reality, enter into actual states of affairs, thereby also introducing the possibility of deception and illusion" (Väilaho 2022, 34). This process is essential in understanding the evolution of optical illusions at the intersection of the photographic medium and, above all, immersive technologies that (we would like to emphasise here) convert virtual movement by requiring a projection of its observer into the "depths" of the solid image.

2.2.3 The Discursive Commonplaces in the Holmes-Bates Stereoscope

Holmes, who enjoyed very high reputational capital in the social economy of the United States at the time, authored three major articles on stereography published in *The Atlantic Monthly* (1859; 1861; 1863). He not only contributed to the differing material emergence of the stereoscopic device but also produced several popular texts that accompanied the marketing and circulation of his technologies.[82] In a media archaeological analysis, such as the present one, the methodological approach emphasises the correlation between material and discursive devices, thus also focusing on the textual apparatuses that, as in this case, participated in the promotion and marketing techniques of a given medium.
The first of the three articles, "The Stereoscope and the Stereograph," inaugurates Holmes' discursive architecture on the device. Published in June 1859, it defines the role of photography in the construction of "self-portraits of nature," anticipating, as Fiorentino (2014) noted, the Benjaminian insight into the role of technical reproducibility in the construction of urban social geography. The text begins, as befits a "poet laureate," with a reference to ancient philosophy:

[81] It should be specified that the author's object of analysis are optical technologies that, like the camera obscura or the magic lantern, project and present virtual images in an emergent movement (as we shall see) as opposed to the immersive form in the context of stereographic fruition.
[82] It should be noted, however, that Holmes did not file a patent for his invention, allowing the technology and its structure to be reproduced free of charge, ultimately sanctioning the effective dissemination of the device, though mainly in the United States (see Darrah 1977, 2–3).

> Democritius of Abdera, commonly known as the Laughing Philosopher, probably because he did not consider the study of truth inconsistent with a cheerful countenance, believed and taught that all bodies were continually throwing off certain images like themselves, which subtile emanations, striking on our bodily organs, gave rise to our sensations. Epicurus borrowed the idea from him, and incorporated it into the famous system, of which Lucretius has given us the most popular version. Those who are curious on the matter will find the poet's description at the beginning of his fourth book. Forms, effigies, membranes, or *films*, are the nearest representatives of the terms applied to these effluences. They are perpetually shed from the surfaces of solids, as bark is shed by trees. *Cortex* is, indeed, one of the names applied to them by Lucretius. (Holmes 1859, 1)

The incipit of the article draws from the Greco-Latin genealogy an essential physiological positioning; "forms, effigies, membranes or films" are "shed" from the surface of solids, powerfully indicating the process of flattening of the three-dimensional image occurring upon the contact of solid reality with the membrane of the cornea, typical of the physiological interpretation at the time. Holmes continues as follows:

> These evanescent films may be seen in one of their aspect in any clear, calm sheet of water, in a mirror, in the eye of an animal by one who looks at it in front, but better still by the consciousness behind the eye in the ordinary act of vision. (Holmes 1859, 1)

The films of matter are thus visible on natural (water), artificial (mirrors) and biological (an animal's eye) surfaces. In the case of the human being, however, the materialisation of these films does not take place on a concrete surface but "through the consciousness behind the eye." Nevertheless, Holmes defines the archaeology of the image and its technical reproducibility, opening up a confrontation with the atmospherology of projection (Bruno 2022),[83] which focuses on the alchemical nature of screens and archaeoscreens (Carbone 2016). Furthermore, Holmes immediately defines his position

[83] In *Atmosphere of Projection* (2022), Bruno deals with the elementality of projective processes. Bruno's in a sense *archaeological* perspective crosses the alchemical value of surfaces with the representational, medial and ideological processes of projected light. The conceptual adherence is in this case derived from the (rhetorical) attention that Holmes proposes with respect to the material, elemental and "natural" supports of the impression of the image.

in relation to optical physiology, aligning himself with Brewster in conceiving the image as an act of consciousness, physically "behind the eye" and determined by the primacy of sight-mind in the construction of perception.

After an emphatic description of the roaring modernity of, first, the daguerreotype and, second, photography, understood as "a mirror with a memory"[84] (Holmes 1859, 2) and "sun-painting" (4), Holmes devotes the third section (3-8) to stereoscopy itself, beginning with a brief but effective description of the apparatus:

> A stereoscope is an instrument which makes surfaces look solid. All pictures in which perspective and light and shade are properly managed, have more or less of the effect of solidity; but by this instrument that effect is so heightened as to produce an appearance of reality which cheats the senses with its seeming truth. (Holmes 1859, 4).

The revolutionary impact of the machine can be gauged from these first lines, which echo the enthusiasm of Wheatstone and Brewster: the physiological illusion that gave two-dimensional forms the appearance of solidity is extended by this technology to such an extent that it "cheat[s] the senses with its seeming truth." In this case, this illusion is further specified by the term *cheat*, which refers to the sphere of fraudulent games or gambling as well as magical illusionism. This aspect places such perceptual tricks in the context of attractions and coin-operated machines, a central market for the stereographic and, later, film industry.[85] The interesting conceptual chiasmus of Holmes' perspective, as we saw earlier with Brewster and other commentators of the time, is the association of illusion with a supposed visual *truth*, a system typical of the cultural (and popular) response to the new machines of the visible of the time.[86] Holmes' article then continues

[84] The wording "mirror with memory" would be among the most successful photographic metaphors of the nineteenth and twentieth centuries. The alliance between the mirror and the photographic device was essential, especially at the time, in promoting the indexical qualities of photography. Compare E. A Poe (1839), Baudelaire (1859) and Bazin (1945).

[85] On the issue of the connection between optical devices and "attractions," see Lisa Gitelman and Geoffrey P. Pingree, eds., *New Media, 1740–1915* (Cambridge: MIT Press, 2010); John Plunkett, "Selling Stereoscopy, 1890–1915: Penny Arcades, Automatic Machines and American Salesmen," *Early Popular Visual Culture* 6, no. 3 (November 2008): 239–55, https://doi.org/10.1080/17460650802443027; Wanda Strauven, *The Cinema of Attractions Reloaded* (Amsterdam: Amsterdam University Press, 2006); Gunning, Tom. "The Cinema of Attraction[s]: Early Film, Its Spectator and the Avant-Garde," in *Theater and Film: A Comparative Anthology*, eds., Robert Knopf (New Haven: Yale University Press, 2005).

[86] On the question of photography as a tool, symbol and symptom of nineteenth-century positivist culture, see Herbert Molderings and Gregor Wedekind, *L'évidence Photographique La Conception Positiviste De*

with an important section on the physiological processes of visual depth perception, further situating his scientific perspective:

> There is good reason to believe that the appreciation of solidity by the eye is purely a matter of education. The famous case of a young man who underwent the operation of couching for cataract, related by Cheselden, and a similar one reported in the Appendix to Müller's Physiology, go to prove that everything is seen only as a superficial extension, until the other senses have taught the eye to recognise depth, or the third dimension, which gives solidity, by converging outlines, distribution of light and shade, change of size, and of the texture of surfaces. Cheselden's patient thought "all objects whatever touched his eyes, as what he felt did his skin." The patient whose case is reported by Muller could not tell the form of a cube held obliquely before his eye from that of a flat piece of pasteboard presenting the same outline. Each of these patients saw only with one eye, – the other being destroyed, in one case, and not restored to sight until long after the first, in the other case. In two months' time Cheselden's patient had learned to know solids; in fact, he argued so logically from light and shade and perspective that he felt of pictures, expecting to find reliefs and depressions, and was surprised to discover that they were flat surfaces. If these patients had suddenly recovered the sight of both eyes, they would probably have learned to recognise solids more easily and speedily. (Holmes 1859, 4)

Holmes' physiological position, which aligned with optical science at the time, recognised the role of learned experience in the construction of three-dimensional space and the solids that inhabit it. Recalling Molyneux's classic question, Holmes cites two examples from optical physiology, that is, the cases reported by Cheselden and Müller. In the former, Cheselden found that a 13-year-old patient continued to have severely impaired vision even after the removal of cataracts, as illustrated in this passage from his 1727 text:

> When he first saw, he was so far from making any judgment of distances, that he thought all object whatever touched his eyes (as he expressed it) as what he felt did

La Photographie En Question (Paris: Maison des sciences de l'homme, 2009); Diane Dufour and Christian Delage, *Images À Charge: La Construction de La Preuve Par L'image* (Paris: Le Bal, 2015).

> his skin, and thought no object so agreeable as those which were smooth and regular, though he could form no judgment of their shape, or guess what it was in any object that was pleasing to him: he knew not the shape of anything, nor any one thing from another, however different in shape or magnitude; but upon being told what things were, whose form he knew before from feeling, he would carefully observe, that he might know them again. (Cheselden 1727, vol. 35: 447–450)

Cheselden's patient continued to have serious difficulty recognising solids even after regaining his sight. It should be noted that, as Sinha and Held (2012) point out, Cheselden's data can only be partial, given the surgical and diagnostic knowledge of the time. Similarly, Holmes' reference to Muller's *Physiology*[87] and the patient who did not recognise a solid from a flat figure is associated with the monocular vision of the two subjects. There is, therefore, a multi-sensory involvement in the construction of three-dimensional space, but it is the binocularity of human vision that plays a central role in this visual process:

> We can commonly tell whether an object is solid, readily enough with one eye, but still better with two eyes, and sometimes only by using both. If we look at a square piece of ivory with one eye alone, we cannot tell whether it is a scale of veneer, or the side of a cube, or the base of a pyramid, or the end of a prism. But if we now open the other eye, we shall see one or more of its sides, if it has any, and then know it to be a solid, and what kind of a solid. (Holmes 1859, 4)

Holmes' prose, deliberately informative and suitable for the broad audience of the *Atlantic Monthly*, focuses on binocularity as a condition of three-dimensional perception and a preliminary physiological explanation for the stereoscopic revolution. Holmes continues as follows:

> We see something with the second eye which we did not see with the first; in other words, the two eyes see different pictures of the same thing, for the obvious reason that they look from points two or three inches apart. By means of these two different

[87] Crary (1990, 92-93) also discusses Muller's physiology, noting that "In his account of the relation between stimulus and sensation, Muller suggests not an orderly and legislative functioning of the senses, but rather their receptivity to calculated management and derangement."

> views of an object, the mind, as it were, *feels round it* and gets an idea of its solidity. We clasp an object with our eyes, as with our arms, or with our hands, or with our thumb and finger, and then we know it to be something more than a surface. This, of course, is an illustration of the fact, rather than an explanation of its mechanism. (Holmes 1859, 4)

This passage is particularly significant for a theory of haptics,[88] of which the stereoscope, as seen with Wheatstone and Brewster, became a physiological proof device. Holmes' proposal of a synaesthetic description of sight, touch and consciousness would go on to have a strong appeal to his readers and determine the discursive success of the stereoscopic device. The mind "feels" an object by means of two points of view. The homologation of sight and touch in the hierarchy of the senses is, in Holmes' case, transformed into a rhetorical and discursive trick to present a material device capable of deceiving the senses while at the same time verifying its functioning. By means of a mirror with a memory – photography – the stereographic device is able to reproduce a part of nature with all of its inescapable truth. It is to photography that Holmes returns, in a poetic phenomenology of the photographic portrait. With two shots, or, rather, as Holmes argues, with a "double camera" – as we have seen in Wheatstone's dictum – stereography immortalises the concrete essence of its subject:

> We were just now stereographed, ourselves, at a moment's warning, as if we were fugitives from justice. A skeleton shape, of about a man's height, its head covered with a black veil, glided across the floor, faced us, lifted its veil, and took a preliminary look. When we had grown sufficiently rigid in our attitude of studied ease, and got our umbrella into a position of thoughtful carelessness, and put our features with much effort into an unconstrained aspect of cheerfulness tempered with dignity, of manly firmness blended with womanly sensibility, of courtesy, as much

[88]We will discuss the hapticity of the stereographic solid image later (cf. 3.4). On the issue, see David Trotter, "Stereoscopy: Modernism and the 'Haptic,'" *Critical Quarterly* 46, no. 4 (December 2004): 38–58, https://doi.org/10.1111/j.0011-1562.2004.00596.x; Martin Grunwald, *Human Haptic Perception: Basics and Applications* (Basel-Boston: Birkhäuser, 2008); David Parisi, *Archaeologies of Touch* (Minneapolis: University of Minnesota Press, 2018); Laura U Marks, *Touch: Sensuous Theory and Multisensory Media* (Minneapolis: University of Minnesota Press, 2002). On cinematic haptics, see Antonia Lant, "Haptical Cinema," *October* 74 (1995): 45-73, https://doi.org/10.2307/778820; Laura U Marks, *The Skin of the Film Intercultural Cinema, Embodiment, and the Senses* (Durham: Duke Univ. Press, 2000); Jennifer M. Barker, *The Tactile Eye: Touch and the Cinematic Experience* (Berkeley, California: University of California Press, 2009).

> as to imply, – "You honour me, Sir," toned or sized, as one may say, with something of the self-assertion of a human soul which proudly reflects, "I am superior to all this," – when, I say, we were all right, the spectral Mokanna dropped his long veil, and his waiting-slave put a sensitive tablet under its folds. The veil was then again lifted, and the two great glassy eyes stared at us once more for some thirty seconds. The veil then dropped again; but in the meantime, the shrouded sorcerer had stolen our double image; we were immortal. Posterity might thenceforth inspect us, (if not otherwise engaged,) not as a surface only, but in all our dimensions as an undisputed *solid* man of Boston. (Holmes 1859, 5)

Holmes' lyricism in this passage contains several elements central to a theory of stereographic immersion and the somatechnical fusion between the perceiving body and the machine. Holmes' subject, after careful and studied postural training, arrives at the desired pose – promptly en-gendered (De Lauretis 1987; 1999)[89] into male and female postural phenotypes – and encounters a skeletal figure. This phantasmagorical apparition, a metaphor for the photographer under the typical camera tassel of the time, introduces a new interpretation of the body-machine fusion seen in the *Elephans Phtograficus* (cf. 1.2). In this case, the photographer is associated with Mokanna, or Hashim al-Muqanna' (fig. 18), a prophet and alchemist who founded a cult in the eighth century with the intention of uniting Zoroastrianism and Islam. The iconography of the prophet, in vogue

[89] The reference, as shown below, is to Teresa De Lauretis, *Technologies of Gender: Essays on Theory, Film, and Fiction* (Bloomington: Indiana University Press, 1987) and "Gender Symptoms, or, Peeing like a Man," *Social Semiotics* 9, no. 2 (August 1999): 257-70, https://doi.org/10.1080/10350339909360436. In the latter article, de Lauretis (1999, 260) explains that "to engender – which means to produce or bring into existence and comes etymologically from genus and generate and hence does not have feminine (or masculine) connotations – and the word gender in its feminist usage meaning the mark of woman: by en-gendered I meant that the social subject was produced or constituted as a woman or as a man; that is to say that gender was inscribed or implanted in each subject from its inception from the very beginning of subjectivity even before the apperception of sexual difference."

in the nineteenth century,[90] shows the presence of a veil, probably associated with an act of modesty due to the alchemist's extreme beauty.[91]

Figure 18. Samuel Forde, The Veiled Prophet of Khorassan*, c.1828, sepia ink on paper, © Crawford Art Gallery, Cork.*

In addition to the poetic isomorphism between the liturgical and the photographic veil, this association is reminiscent of the typical Orientalist fascination of Western colonialist culture, which, as we shall see, made the stereoscope an instrument in its service. The photographer-Mokanna then shows his glass eyes and proceeds to immortalise the man in front of him. Here, then, the stereoscope enables the reproduction of this "man of Boston" – Holmes himself – in all his *solidity*. The term solid, italicised in the original text, continues to define an important semantic and postural chiasmus. While the term emphasises the market novelty of the device – the illusion of three-dimensionality – Holmes specifies that the subject of stereoscopy is also solid, in the sense of firm and reliable, whose moral stability is, therefore, unquestioned.

What happens when the stereographic strip is inserted into the proper stereoscopic apparatus? Holmes continues with his usual emphatic description:

[90] In this regard, see Thomas Moore's collection of short stories, *Lalla-Rookh* (New York: Thomas Y. Crowell & Co, 1817). An 1877 opera, The *Veiled Prophet* by Charles Villiers Stanford, is in turn loosely based on the story of Mokanna, as given in Lalla-Rookh.

[91] For more on the character, see "Encyclopaedia Iranica – MOQANNA,'" iranicaonline.org, accessed January 31, 2024, https://www.iranicaonline.org/articles/moqanna; Bernard Lewis, *Arabs in History* (Oxford: Oxford University Press, 2002).

> The first effect of looking at a good photograph through the stereoscope is a surprise such as no painting ever produced. *The mind feels its way into the very depths of the picture*. The scraggy branches of a tree in the foreground run out at us as if they would scratch our eyes out. The elbow of a figure stands forth so as to make us almost uncomfortable. Then there is such a frightful amount of detail, that we have the same sense of infinite complexity which Nature gives us. (Holmes 1859, 5, emphasis mine)

The discursive system promoted by Holmes in this passage introduces topoi that are essential in understanding the recurring rhetoric on new technologies and immersion. On one hand, Holmes states that the new stereographic medium is "a surprise such as no painting has ever produced," implying a fundamental rethinking of the illusionist schema of pictorial perspective. On the other hand, in the light of the physiological processes described above, "the mind feels its way into the very depths of the picture," thus defining for Holmes the typically projective possibility of stereoscopy, in which the perceiving subject is launched, rather than immersed, into the inhabitable depths of the image.
In the conclusion of the essay, Holmes imagines in a futurological afflatus the potential prospects of stereoscopic technology.[92] Drawing on an imaginative process typical of the emerging science fiction,[93] he continues with a piece full of aesthetic implications:

> *Form is henceforth divorced from matter*. In fact, matter as a visible object is of no great use any longer, except as the mould on which form is shaped. Give us a few negatives of a thing worth seeing, taken from different points of view, and that is all we want of it. Pull it down or burn it up, if you please. We must, perhaps, sacrifice some luxury in the loss of colour; but form and light and shade are the great things, and even colour can be added, and perhaps by and by may be got direct from Nature. (Holmes 1859, 8, emphasis in original)

With the powerful locution of "form divorced from matter," Holmes condenses and, above all, anticipates much of the twentieth-century reflection on the status of the

[92] "What is to come of the stereoscope and the photograph we are almost afraid to guess, lest we should seem extravagant. But, […] we will venture on a few glimpses at a conceivable, if not a possible future" (Holmes 1859, 7-8).
[93] See Mark Bould, *The Routledge Companion to Science Fiction* (London and New York: Routledge, 2009), in particular, chpt. 2.

technical image and, one would add today, the virtual image. The loss of aura announced by Benjamin in the 1930s cannot but resonate with this separation of form from matter: the cult value of the original, now not only technically reproduced but also illusorily restored to its concrete, solid, three-dimensional nature, becomes a simple "mould on which form is shaped." Matter – states Holmes with an important dose of irony[94] – is only useful as a mould imprinted in photographic negatives: whether they are destroyed or set on fire, all that matters is that the things that should be seen, archived and transmitted are recorded by the sun-painting of stereography.

As Nancy M. West (1996) notes, however, Holmes' prose points to a more complex system of values that also anticipates the postmodern and simulacral vector inaugurated by Baudrillard. In particular, stereoscopy in Holmes' prose is an important actor (material and discursive) in the construction of what Baudrillard called the "weightless system" of capitalism, a system that "is no longer anything but a gigantic simulacrum, never again exchanging for what is real, but exchanging in itself, in an uninterrupted circuit without reference or circumference" (Baudrillard 1988, 170). The capitalist-simulacral entanglement interspersing the lines of this first text by Holmes is further confirmed by a passage shortly afterwards in which the author, maintaining the ironic perspective of his prose, suggests a new system of monetary exchange based on stereographs:

> As a means of facilitating the formation of public and private stereographic collections, there must be arranged a comprehensive system of exchanges, so that there may grow up something like a universal currency of these bank-notes, or promises to pay in solid substance, which the sun has engraved for the great Bank of Nature let our readers fill out a blank check on the future as they like – we give our endorsement to their imaginations beforehand. (Holmes 1859, 8)

This passage, part of a rhetorical speculation on the possible future of stereoscopic technology, invites a twofold reflection. On one hand, it emphasises the metaphorical reception of the technical reproduction of the image: just as banknotes are a material (and two-dimensional) support of economic value – established, at least at the time, by a

[94] West (1996), links Holmes' literary irony to an awareness of the socio-philosophical changes of his time, which included photo-stereography: "Holmes uses irony, a trope that allows him to explore the paradoxes of the invention, its potent conflation of depth and surface, intimacy and alienation" (237).

financial attribution system linked to the calculation of a particular nation's gold reserves – so stereography becomes a "promise to pay in solid substance," an indexical counterpart to its referent. Stereographic banknotes are thus printed for the "Great Bank of Nature." Nature, the bio-bank institution of the sensible, reconnects and confirms the discursive nexus of stereophotography as the principal device in the technical reproduction of part of visual truth. At the same time, the passage seems to set up a more subtle argument about the interrelationship between money, capitalism and photography.

Indeed, West (2008) links the Marxian interpretation of money to the photographic process: "Like money, photography was soon transformed into a system that unified value, need and desire. As Marx wrote of money, photography functions as a democratiser, a myth supposedly authorised by universal consent" (252). This kind of association becomes even more central when we consider the increasing commercial success of photography (stereographic and otherwise), which, as anticipated, was being defined at the time. Among the first forms of popular photographic products, stereography became the perfect counterpart to the banknote and its socio-symbolic system. In a perspective such as this, which considers the material conformation of devices, technologies and supports, one cannot help but notice that the typical shape of the stereographic strips, often with decorated borders, closely resembles the contemporary prints of, for example, the American dollar (figs. 19-20). Very often sold in sets of multiples, stereographs could easily remind their collectors of a bundle of banknotes. The miniature stereoscope and the fifty-six accompanying stereograph cards issued as a promotional item by the American Biscuit Company of San Francisco (fig. 21) are a perfect example of such material isomorphism, which, as we have seen, also determines a marriage of conceptual intentions between the semiotics of money and those of stereography.

It is, moreover, a concern in relation to photography as a potential instrument of the erosion of the real that afflicts other writers besides the aforementioned Baudelaire. Such is the case with Dickens, who in *Busy with Photograph* states as follows:

> The commercial world becomes every now and then a little alarmed, and not unreasonably so, at the startling strides made by science: fearful lest the necessary caution observed in trading matters should occasionally be over-dazzled by the

> brilliancy of modern discoveries. Thus, as photography is copying all sorts of productions, why not copy a Bank of England note [?] (Dickens 1854, 244)

Stereoscopy as a banknote and photography as a technical prosthesis of capitalism are expressions that are fundamentally concerned with the perceived erosion of the real that such systems inaugurated in those very decades. The association is even more effective

Figures 19-20. 20 US Dollars, 1880, Coltrane Collection.

Figure 21. Circa 1890, American Biscuit Company Stereoscope and Stereoscopic Cards.

when we recall, as Tratchenberg (1989, 18) does, that at the time of Holmes' text, the United States was emerging from more than two decades of severe unemployment and inflation.[95] A specific scenario that challenged the myth of American capitalism:

> He [Holmes] suggests that photographs may now stand in for their referents, like cash for gold, but as the economic crisis of the mid-nineteenth century warned Americans, gold itself can fluctuate, can lose its meaning or value. His obsessive linking of money with photography thus occurs in an era when the market itself

[95] "Playing on popular anxieties about inflated paper money since the crash of 1837 (aggravated by another bank failure in 1857), Holmes offered the stereographically enhanced photograph as a new form of security between an image and what it claims to represent" (Tratchenberg 1989, 18). On this subject, see also Harvey Green, "'Pasteboard Masks': The Stereograph in American Culture, 1865–1910," in *Points of View: The Stereograph in America – A Cultural History*, ed., Edward W. Earle (Rochester, NY: Visual Studies Workshop Press, 1979), 109-115.

> betrayed the very idea of a solid substance – and when Americans, more importantly, were expressing deep disillusionment with the capitalist system even while they were caught up in its system of circulation and exchange. (West 1996, 253)

The Marxian perspective, thus, sees the birth of speculative capital in the separation between productive activity as such and the anticipation of future accumulation (Väliaho 2022, 174). Indeed, it is no coincidence that Marx himself uses a metaphor akin to that of optical illusions to describe this passage, arguing that "everything in this [financial] system appears in duplicate and triplicate and is transformed into a mere *phantom of the mind*" (Marx 1863-83, vol. 3, 603, emphasis mine). In effect, this represents a model, that of the erosion of reality by the technologies that allow its technical reproduction, which is closely related to the more general anxiety determined by simulation. The term, which brings us back to Baudrillard, should not be understood semantically only in relation to the technology of proto-virtualisation but, rather, as Crary warns us, in relation to the *techniques* of the observer, understood as the prescriptive forms – optical and political – that the device imposes on its user.

Furthermore, if stereoscopic photography – following Holmes' hyperbolic and ironic rhetoric – destroys the principle of reality, leaving behind empty carcasses, so does capital, which, in Baudrillard's words,

> was the first to practice deterrence, abstraction, disconnection, deterritorialisation, and if it was capital which fostered reality, the reality principle, it was also the first to liquidate it in the extermination of every use value, of every real equivalence, of production and wealth, in the very sensation we have of the unreality of the stakes and the omnipotence of manipulation. (Baudrillard 1988, 180)

If, then, Holmes' irony reveals an early anxiety about techno-capitalist simulation, his text and device provide us with a further theoretical aid that brings us back to the posturological perspective. In an earlier paragraph of the same text, Holmes provides a different metaphorical description of photographic capture that, while still in keeping with the irony of the prose, has many implications for the logics of immersion analysed here. In the regimen of futurological speculation, Holmes imagines the stereographers of the future as fur trappers:

> We have got the fruit of creation now, and need not trouble ourselves with the core. Every conceivable object of Nature and Art will soon scale off its surface for us. Men will hunt all curious, beautiful, grand objects, as they hunt the cattle in South America, for their *skins*, and leave the carcasses as of little worth. (Holmes 1859, 8)

The image as *skin* is a topos of widespread fortune, as Holmes himself demonstrates at the beginning of his text quoting the Lucretian theory of emanations. What seems particularly significant in this passage, however, are the posturological, mediological and, more broadly, political consequences implied by the hunter's metaphor. As argued earlier, Holmes' stereoscope belongs to a class of projective rather than immersive devices. A projective system implies a precise virtualised movement of the body and, consequently, a particular set of postures. The chase for the image is a topos that has turned the photographic lens into an instrument of aggression against reality. One thinks of the case of the photographic rifle developed by Marey in 1882[96] (fig. 22), a perfect

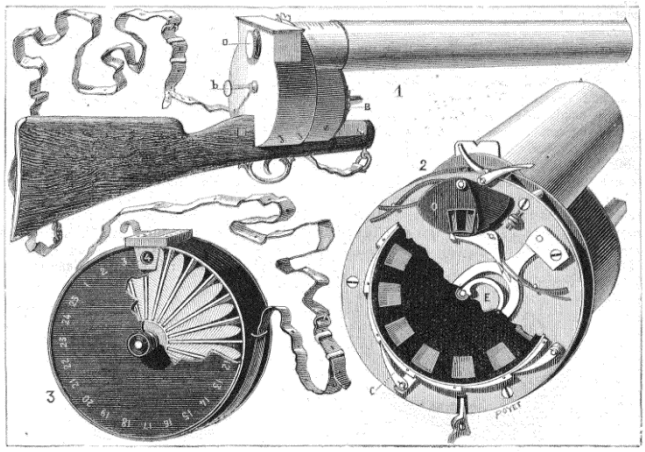


Fig. 2. Mécanisme du fusil photographique.
1 Vue d'ensemble de l'appareil. — 2. Vue de l'obturateur et du disque à fenêtre. — 3. Boîte contenant vingt-cinq plaques sensibles.

Figure 22. Louis Poye, engraving of the mechanism of the "fusil photographique" as published in La Nature, *April 1882.*

crasis between hunting and photography, which materialises a device aimed at capturing the movement of the flight of birds, double "victims" of the aggressiveness of the photographic hunter's eye. Sontag (1977)[97] further specifies the connection between

[96] On chronophotography in Marey, see Marey Étienne-Jules, *Le Mouvement* (Paris: G. Masson, 1894); Marta Braun, *Picturing Time: The Work of Etienne-Jules Marey (1830-1904)* (Chicago: University of Chicago Press, 1994).

[97] Sontag, moreover, indicates the metaphor of photographic immortalisation, which recalls the ballistic quality of modern media forms in Benjamin: "Like a car, a camera is sold as a predator weapon – one that's as automated as possible, ready to spring"; "to photograph people is to violate them, by seeing them as they never see themselves, by having knowledge of them they can never have; it turns people into objects that

photography, killing and technical reproduction, noting how the scopic regimes of hunting were replaced by those of the machine in the context of the safari:

> One situation where people are switching from bullets to film is the photographic safari that is replacing the gun safari in East Africa. The hunters have Hasselblads instead of Winchesters; instead of looking through a telescopic sight to aim a rifle, they look through a viewfinder to frame a picture (Sontag 1977, 11)

Sontag's reference to a contemporaneous account of the proliferation of photographer-hunters[98] invokes the definition of stereography as a technology of the *picturesque*. We will see this connection shortly, but for now, it suffices to stress, as Sontag does, that the shift from the gun to the rifle also decrees a different status for the concept of nature, no longer an ecosystem against which to be defended but, rather, a context to be protected, reproduced and archived.[99] Because of the technical qualities of stereography, it seems to participate fully in this process.

The rhetoric of "image hunting" or "shooting" thus seems to propose a double projective movement: one related to image-making and the other image-viewing. We project ourselves onto the real in order to capture it with photographic devices, but we also project ourselves onto the reproduced image through apparatuses such as the stereoscope.

The postural and hygienic value of the handle, typical of the Holmes-Bates stereoscope, has been emphasised, but in line with the author's prose, it can easily suggest a proximity to devices belonging to the semantic regime of hunting. If, on one hand, the photographic rifle demonstrates the predatory, penetrating and, one might add, masculine rhetoric of the photographic pseudo-phallus, on the other hand, the Holmes stereoscope and the accompanying prose describe another, albeit similar, movement of perception. In fact, it is the rhetoric – not the actual function – of photography as image-hunting that determines the movement from machine to the film of reality. The vector that Holmes' stereoscope

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can be symbolically possessed. Just as the camera is a sublimation of the gun, to photograph someone is a sublimated murder – a soft murder, appropriate to a sad, frightened time" (Sontag 1977, 10-11).

[98] "In end-of-the-century London, Samuel Butler complained that 'there is a photographer in every bush, going about like a roaring lion seeking whom he may devour'" (Sontag 1977, 11).

[99] "Guns have metamorphosed into cameras in this earnest comedy, the ecology safari, because nature has ceased to be what it had always been – what people needed protection from. Now nature – tamed, endangered, mortal – needs to be protected from people. When we are afraid, we shoot. But when we are nostalgic, we take pictures" (Sontag 1977, 11).

prescribes is, therefore, projective. This means that the viewer, pointing the device at the stereoscopic image and aided by a fundamentally upright posture, throws his virtualised body into the “depth of the image.” This system is further inspired by a posturological and material isomorphism with other hunting devices, such as the crossbow, with which the Holmes stereoscope shares not only the structural conformation but also the required posture (figs. 23-26).

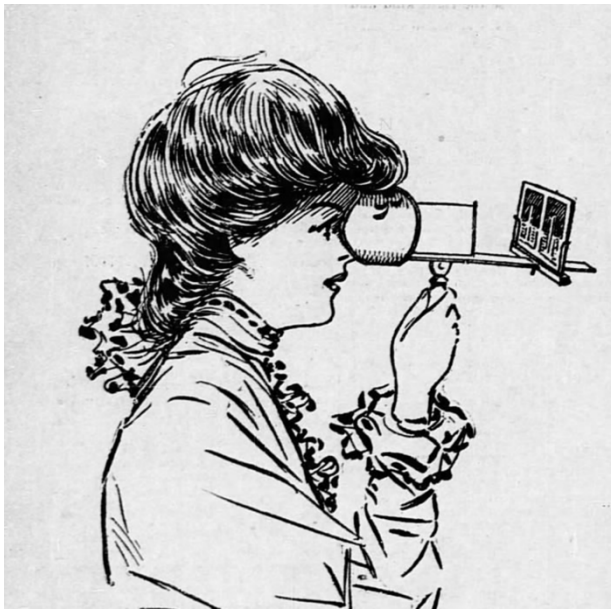

Fig. 23. Underwood Stereoscope National Commercial, detail, in The National Tribune Washington*, April 23, 1908.*

Figure 24. Anonim., Martyrdom of Saint Sebastian*, c. 1475, Wallraf-Richartz-Museum, Cologne, Germany.*

Figure 25. Crossbow with Extensive Scrimshaw Panels, late 19th century.

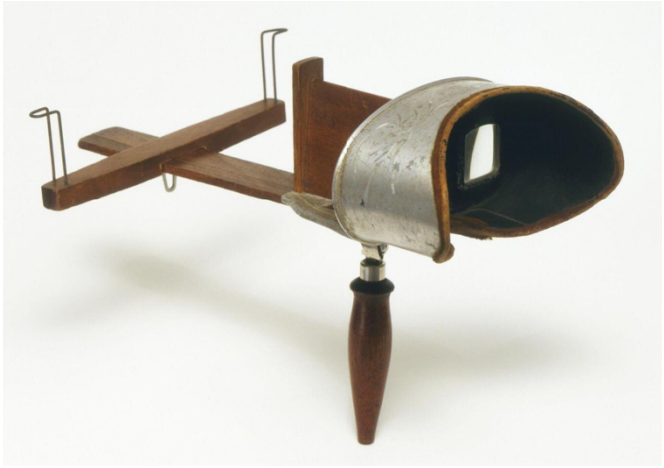

Figure 26. Holmes-Bates Stereoscope, Underwood and Underwood, 1901, New York, Victoria & Albert Museum.

The arrow of the crossbow is a prosthetic extension of the gaze that reaches, more or less effectively, its target. The weapon as an extension of the person, one of the protagonist of Gell's artistic anthropology (1998, 20-21), is in this case a discursive unit that determines the conceptual absorption of a new medium by its audience. Thus, while the Holmes stereoscope engages with the viewer's gaze, in contrast to the immersive absorption of Brewster and other peep media, it projects it onto the three-dimensionalised image.

The other aspect to emphasise at this point – and which will later have an important application in constructing a gendered and colonial view of the erotic material analysed – is the fundamentally predatory nature implied by such an association. From the perspective of this analysis, it is a predatory form that is reinforced not only by the isomorphism of the ergonomics of the devices examined but also by the postures demanded by the technologies. It represents a series of bodily figures, the latter evoking a projective volition towards the technically reproduced, both in terms of image-making – the photographic rifle – and image-viewing – the Holmes stereoscope.

Holmes' article describes, albeit with ironic emphasis, exactly this process: men (in this case, in the double sense of human and male) hunt stereographs just as one hunts *exotic* animals. For an American like Holmes, the reference to South America as the destination of the natural and primitivised Other is not coincidental and reflects the logic of othering[100] typical of the cultural, visual and, we would add here, stereographic colonialism of the time. The relationship with the global South – South America, the African continent and the so-called Middle East – is the preferred sites of this hunt for images, whose skins are then transported, archived and activated by the devices in question. The specificity of the American media ecosystem, in addition to the aforementioned visual colonialism of Brewster's Victorian England, is also imbued with the same projective model, which, in line with proto-simulacral thought, implies the will to control subjectivities (human and non-human), places and cultures through its stereoscopic double.

The tradition of the skin as image – note, for example, the Italian etymological assonance between "pelle" (skin) and "pellicola" (film) – quoted by Holmes himself at the beginning

[100] On the role of the visual on the colonial othering process, see Julia Khrebtan-Hörhager, *Communicating the Other across Cultures* (Ann Arbor: University of Michigan Press, 2023), especially chpt. 2.

Figure 27. Dionysus with nebris*, 2nd century A.D., National Archaeological Museum, Cagliari.*

of his article, is part of a long mythographic and visual tradition. This is the case with the *nebris* (fig. 27), a typical garment of the god Dionysus[101] and his followers, consisting of the skin of a sacrificed animal, which constituted both the image and essence of the god himself in the typical functioning of the religious idol/fetish.[102] Gell (1998, 97-98), specifies that in the case of idols and fetishes, one should consider the iconic (thus linked to a visual prototype) or aniconic nature of the object. The anthropologist, however, recognising the same type of agency in both, describes an equivalent "realistic" effect.[103] With regard to the interests of this analysis, the *nebris* thus appears as a theoretically important genealogical counterpart because it activates a system of relations with the skin of the sacrificed animal as a fetish of the real (in this case, the divine). This is fully congruent with the understanding of the stereograph as a skin of the concrete world, which, in Holmes' ambiguous irony, is also superfluous in favour of its double.

[101] On the nebris, see Thorsten Fögen and Edmund Thomas, *Interactions between Animals and Humans in Graeco-Roman Antiquity* (Berlin: de Gruyter, 2017).
[102] In addition to the extensive literature on fetish in anthropology, we refer to the perspectives advanced by Gell (1998), where fetish is conceived "as an index of cumulative agency."
[103] "An aniconic idol is a 'realistic' representation of a god who either has no form (anywhere), or has an 'arbitrary' form, in the particular 'body' he inhabits for the purposes of being worshipped by his mortal devotees" (Gell 1998, 98). We will return to this point with respect to the living parer of stereographic bodies, particularly in their adherence to the logic of the infusion of life, as expressed in Bredekamp (2018) and Severi (2018).

The skin as a fetish and means of representation remains a recurring topos with relevant expressions in the history of art. Such is the case with Michelangelo's Saint Bartholomew (fig. 28) in the Sistine Chapel, depicted holding the skin of his martyrdom at the Last Judgement. The saint, skinned alive for his evangelical mission, holds his "mortal remains" – the perfect counterbalance to the mould that Holmes speaks of in relation to stereography. The skin of St Bartholomew, which contrasts with the typically Michelangelesque solidity of the saint's divine body, is also, according to a widely accepted interpretation by art historians (Barnes 2004), a self-portrait of the artist. Here, then, we emphasise that even in this case, long before photographic technologies, the skin, emptied of its content, became an inscription surface of an indexical sign[104] of the artist himself, thus opening a representational link between the elsewhere of the biblical narrative and the *hic et nunc* of the pictorial performance.

Figure 28. Michelangelo Buonarroti, Last Judgement*, detail with St. Bartholomew, 1536-1541, Sistine Chapel, Rome.*

The paradigm of the skin-image and the violence of flaying, also akin to the practice of hunting mentioned earlier, returns in a later article by Holmes, again for the *Atlantic*

[104] Particularly fascinating is the reading by Campbell (2002), who describes the process of self-portraiture on "skin" "as authorial disengagement or absence – a not-self or antiportraite" (614).

Monthly. "Sun Paintings Sun Sculpture" (1861) begins with a reference to Greek mythology, as is typical of the author's cultured prose:

> There is one old fable which Lord Bacon, in his "Wisdom of the Ancients," has not interpreted. This is the flaying of Marsyas by Apollo. Everybody remembers the accepted version of it, namely, – that the young shepherd found Minerva's flute, and was rash enough to enter into a musical contest with the God of Music. He was vanquished, of course, – and the story is, that the victor fastened him to a tree and flayed him alive. (Holmes 1861, 13)

For Holmes, Dionysus and Marsyas became an unprecedented pre-photographic myth. The author, who emphasises the association between Apollo and the sun, of which he is the deity and symbol, finds in the barbarity practised on Marsyas a desire to technically reproduce an image:

> But the God of Song was also the God of Light, and a moment's reflection reveals the true significance of this seemingly barbarous story. Apollo was pleased with his young rival, fixed him in position against an iron rest, (the tree of the fable,) and took a photograph, a sunpicture, of him. This thin film or shin of light and shade was absurdly interpreted as being the cutis, or untanned leather integument of the young shepherd. The human discovery of the art of photography enables us to rectify the error and restore that important article of clothing to the youth, as well as to vindicate the character of Apollo. (Holmes 1861, 13)

The passage, as is now clear in Holmes' style, is a rhetorical device associating photographic technique and stereography with an ancient and "cultured" genealogy. What is of interest here are the symbolic implications and discursive themes that this passage associates with the photographic and stereographic device. The equation proposed by Holmes in the 1861 article links the photographic man with the punishing deity. Moreover, the reference to Marsyas is not exclusively rhetorical: the satyr, in antiquity the symbol of an untamed, impertinent and highly sexualised naturalness, is punished for his hubris by the deity of light. Apollo's photographic process is, thus, a further confirmation, in the discursive accompaniment to the stereographic medium, of the

predatory attitude with which the technology was intended to be communicated. Hunting and skinning are processes that attack subjectivities (in this case, non-human or near-human) that are victims of technical reproduction.

Here, then, in accordance with the association between the stereoscope and the crossbow, the projective experience envisaged by the apparatus determines the will to reproduce and control a supposed naturalness. Just as Apollo tames the faun, man technically reproduces the natural, thereby defusing its subversive potential. This view, as Rachel Teukolski (2020) notes, resonates with the long and coeval tradition of the picturesque. For the author, "the stereoscope functioned as a Victorian remediation of Romantic philosophy, a kind of organic machine and prosthesis attached to the spectator's body that enabled an extraordinary, humanistic experience" (Teukolski 2020a). The association with the picturesque is consistent here because of its colonial relationship with reproduced nature. The picturesque, as defined by William Gilpin (1792), describes the relationship of the natural, understood as landscape, with the image (picture). The requirement of the picturesque, which as an aesthetic category originated in landscape and garden architecture, envisages a skilful, partial but *transparent* control of natural and botanical elements. Unlike Italian gardens and other landscape styles typical of modern Europe, the picturesque, which, like the stereoscope, originated in England, involves a manipulation that must "be as various, wild, and free as Nature's self" (Mason 1782, 33).

This short-circuit between the natural and the manipulated is thus consistent with the discursive devices that Holmes and the press of the time applied to stereoscopic technology. The aggression towards the natural, though left "free as itself," determines another perspective regarding the definition of the visual colonialism of the time, another facet of the metaphorical association with the devices of hunting. The link between landscape and the colonial drive is also illustrated by the long tradition of landscape painting, of which stereography is a form of remediation. W. J. T. Mitchell devotes one of his essays – in *Landscape and Power* (1994) – to this very subject, defining landscape painting as "the 'dreamwork' of imperialism." Mitchell's psychoanalytic association helps in understanding the unconscious expression of this visual imperialism. While the link between pictorial expression and the unconscious is not considered entirely valid here, that is, it is not considered completely correct to consider visual forms such as landscape painting or erotic-pornographic material as the mere *dreamwork* of a given

society and cultural perimeter, it is nevertheless essential to consider this link for a correct analysis of the colonial eye of the time.

Fully aligned with a model of abstract vision and Cartesian control, the commercialisation of the stereoscope was in fact innervated by the "deep-seated western desire to erode the gap between the viewing subject and non-local object" (Plunkett 2013, 396) – a process of proto-othering, then, that found in stereoscopic technologies a new ally in this predation. Teukolski, in his proposal of a stereoscopic picturesque, notes that Linda Nochlin, in her essay "The Imaginary Orient" (1989), used the term to refer to the construction of the Other – in this case, the Middle East as a colonial topos – as an assemblage of static representations and stereotypical models produced for the pleasure of the Western eye. The system of the stereoscopic picturesque seems, therefore, to imply, even in Holmes' prose, an important partner in the visual colonialism of the time and in the production of a stereotypical, classifiable, reproducible and archivable extra-Western world. There is, however, an important characteristic of the pictorial subject in question: it is not disembodied, as the Cartesian perspective would have predicted, but strongly incorporated. The virtual traveller described by Holmes (1861, 153-154) is equipped with a sensory apparatus because of the haptic qualities of technology. The incorporation of the perceiving subject, as we shall see with Crary, has much to do with stereoscopic postures and innervations, just as Holmes' predatory colonialist rhetoric seems to strongly emphasise a phenomenology of the Western observer.

2.2.4 Learning from the Stereo-Postures: Absorption, Transport, Enveloping, Projection

In summary, Holmes and his device determined the definition of certain topoi or commonplaces that would play a central role not only in contact with erotic-pornographic material but also in their cyclical reappearance in the course of the progressive definition of the technologies of the virtual. In terms of the rhetoric and material conformation of Holmes' devices, we have thus far identified certain symbolic characteristics that help in specifying the movements, postures and social vectors of immersion in the stereoscopic image. The predatory nature of the process of image reproduction, the association between photographic film and the hunted skin as the inscribing surface of the image constructed a rhetoric that influenced the viewing regimes of the time. The projective

movement suggested by the isomorphic association with the crossbow recalled broader theories of audiovisual immersion and, one might add, presence studies. The application of these perspectives to chronologically distant objects of study, such as stereoscopy, is part of a media archaeological and genealogical project of this dissertation and allows us to construct a retroactive path to the first expressions, rhetorical and material, of these perceptual systems.

The construction of a projective movement, especially in parallel with the enveloping dimension previously discussed in the case of the Brewster devices, seems to have to do with the processes of virtual but embodied presentification of the percipient subject in the image-environment, in addition to the posturological system determined thus far. The two models defined – envelopment and projection – find a useful parallel in Gordon Calleja's (2011) proposal regarding the different degrees of involvement and immersion, or rather incorporation, in the virtual image. The author proposes a conceptual delimitation of the field by distinguishing two immersive movements: absorption and transport. Interestingly, Calleja's perspective maintains a chronological determination of the different declinations and gradients of media immersion in the spirit of this analysis. Starting from Gorfinkel's concept of immersion, Calleja argues as follows:

> When Gorfinkel states that one can become immersed in Tetris' gameplay, she is referring to the more general, *pre-virtual* environment sense of the word as defi ned by the Oxford English Dictionary (2003): "Absorption in some condition, action, interest, etc." In this sense, one can be just as immersed in solving a crossword puzzle as in *Half-Life 2* (Valve Software, 2004). We will call this kind of immersion as absorption. (Calleja 2011, 26, emphasis mine)

Calleja's definition – "immersion as absorption" – is aimed here at specifying an essential difference in the concept between "pre" and "post" virtual. The author feels the need for a further terminological specification, especially in view of the possibilities offered by virtual technologies in terms of tele-presence. Calleja thus warns us of the risks of accepting Gorfinkel's position in toto with regard to the relationship between immersion and mimetic qualities. Indeed, Gorfinkel argues that

> The confusion in this conversation has emerged because representational strategies are conflated with the effect of immersion. Immersion itself is not tied to a replication or mimesis of reality. For example, one can get immersed in Tetris. Therefore, immersion into gameplay seems at least as important as immersion in a game's representational space. (Gorfinkel, quoted in Salen and Zimmerman, 2003, 452)

If Gorfinkel along with Salen and Zimmerman (2003) have the merit of highlighting the unnecessary correlation between immersion and mimetic replication, Calleja argues that this insight tends to blur the important distinction between immersion as a general absorption in terms of attention and a more precise immersion in the virtual context, which implies a much greater form of agency in the image in question.

Calleja's position is interesting here because of the possibility of rediscussing its chronological "limits." There are technical reasons for the determination of a supposedly virtual "before," which cannot be ignored from the perspective of game studies, to which Calleja moves. However, if we extrapolate such movements of immersion to a more general *modus percipiendi* of the reproduced image, we can note discursive conformations that, in a media archaeological key, seemed to be active in nineteenth-century technologies. Absorption and transport are, in fact, interpretive keys to be applied to a broader intersection of mediological and political systems of relations with the image. The sphere of absorption, parallel to what has been called envelopment here, prescribes a style of perception and, thus, an attitude marked by a tendency towards a relationship with the device and the image based on the encounter with the material technology and the affective resonance with the images reproduced there. Conversely, the context of transport, which for Calleja determines the material agency of the user in the virtual architecture according to processes of telepresence, is understood here in the concept of projection, according to the model exemplified by Holmes, which seeks to emphasise the predatory nature of the relationship with the reproduced image and the will to possess, inhabit and archive it.

The enveloping movement of stereoscopy thus leads to a different interpretation of these scopic regimes. Giuliana Bruno (2002), for example, argues that the almost exclusive focus on the forms of voyeuristic gaze of the Lacanian matrix – afferent to the sphere identified here as that of projection – would have led to the exclusion of other types of

gaze movement. Focusing on the analysis of women's travel literature, Bruno identifies dreamlike and, above all, proto-cinematographic qualities in this literary form. Female travelling subjectivities produce

> a language of visual description, moved by an intense female curiosity. Female travel writing was often so descriptively graphic, in fact, that it approached filmic observation. Its language was a form of (pre)cinematic site-seeing. (Bruno 2002, 83)

Later, in the section devoted to the female observer (4.1-2), we will see the implications of this scopic regime and its relation to the flaneurie. However, Bruno's identification of a movement in the (literary) image suggests another form of inhabiting a virtual place. Indeed, stereoscopic envelopment describes a form of tele-presence that does not lead to the will to aggression and the erosion of the real by the technically reproduced. Rather, given the sensory overload dictated by the haptic nature of the device, it proposes a form of image dwelling dedicated to an "emotional mapping" of the real and its technical doubles. Although Bruno's position proposes an archaeological system of the cinematographic, even the movement proposed by the stereographic medium – albeit based not on kinetic illusion but on virtual transport – resonates with the possibility of approaching the technically reproduced environment beyond the predatory and penetrating will that the most popular discursive commonplaces on technology seem to propose, as in the case of Holmes.

It should be noted, however, that this double movement is not intended to become an essentialist parallel to a gender binarism that follows the scopic ratio "projection: male = enveloping: female." Rather, the logic and intention, later examined in relation to the interaction with erotically active material, is to indicate two movements towards the environmental image that define its social and political positioning. It should be specified that this double movement of perception is not statically linked to the two devices analysed so far and their postures. On the contrary, the intention is to define two categories and paths of this movement towards and around the image, which can include its social meaning, an essential element in the analysis of erotic and pornographic material – two gradients that are either active or can be activated depending on the case and the interpretive perspective. These gradients determine the possibility of focusing on the role of the material conformation of the first immersive devices and the postures they require

in determining the political regimes of vision and their relationship with the image, the bodies, landscapes and imaginaries reproduced within it. Projection and envelopment, therefore, are interpretive movements of the perceptual process typical of nineteenth-century stereoscopy: a process, physiological and postural, that is again uncomfortable, and it is precisely this challenge to vestibular and optical structures that determined its pleasure and success.

Chapter 3. The Chiasmus of Obscenity – The Eroticism of Proto-Environment

3.1 Obscenit*ies*

Up to this point, our reflections have focused on broad discursive dynamics and material technologies in their interactions with reproduced images without erotic-pornographic connotations. The focus on picturesque landscapes and the virtualisation of Orientalist travel deliberately excluded human subjects reproduced in images from the theoretical equation. Therefore, we now turn to the dynamics at work when, maintaining the posturological reflections expressed so far, the situated observer in question interfaces with technically reproduced bodies and identities inhabiting a proto-virtual environment such as that of stereography.

What happens when these subjectivities do not refer to the stylistic and social connotations of portraiture – as in the case of Holmes' "solid man of Boston" – but to bodies, mostly female, conceived and modelled in their three-dimensional soma-architecture for the sexual arousal of their observer?

The eroticisation of the stereographic image activates a complex network of perceptual and cultural dynamics. Such a matrix must therefore be historically located in the contents and geographies of the proto-pornographic industry of the nineteenth century. This conceptual core finds its focus precisely in the term *obscenity*. The etymology of the term, from the Latin *obscenitas*, refers to "unpleasantness, filthiness," thus indicating the semantic field of reference and its moral connotation. However, contemporary interpretations of the term and its etymological composition suggest essential overlaps with the scopic and erotic-pornographic regimes: Wiliams (2004)[105] associates the connotation of the obscene as "off stage" with the term on/scenity, which describes, in Foucauldian fashion, all those discourses "on" and "around" sex.

[105] "The term that I have coined to describe this paradoxical state of affairs is on/scenity: the gesture by which a culture brings on to its public arena the very organs, acts, bodies, and pleasures that have heretofore been designated ob/scene and kept literally off-scene. In Latin, the accepted meaning of the term obscene is quite literally 'off-stage,' or that which should be kept 'out of public view' (oed). On/scene is one way of signaling not just that pornographies are proliferating but that once off(ob) scene sexual scenarios have been brought onto the public sphere" (Williams 2004, 3).

Within the same semantic transfer, it is necessary to draw comparisons to theories such as Crary's (1990), which have identified in the stereographic device a fundamental obscene revolution both in the regimes of vision and in their socio-political implications. In this sense, then, the term does not refer to the moral and sexual obscenity of the explicit image – as in Williams – but rather to the scenic rules of the Albertian perspective that are challenged by the binocularity and material conformation of the device in question.
Crary's vision, which continues to exert a powerful influence and critical fortune on the study of nineteenth-century visual culture, finds its theoretical power precisely in the apparent revolution wrought by stereoscopic devices. For Crary, Wheatstone's scientific revolution and the subsequent commercial diffusion of the stereoscope led to the collapse of a philosophical regime that, based on the camera obscura system and a fundamental monocularity of perceptual processes, had traditionally conceived of a direct indexical relationship between the sensible world and human perception, between a supposedly "real" referent and its retinal counterpart. The stereoscope, according to Crary, overturns this determination by multiplying and thus nullifying a presumed visual truth, now distributed between the pairs of eyes that perceive the world and its stereographic reproductions. This form of visual relativism is determined by the progress of optical technologies. The thaumatrope, phenakistoscope and zoetrope, part of that long genealogy of the moving image, insinuate themselves into the social communities in which they spread doubt about the actual correspondence between reality and visual perception. In the same way, the stereoscopic "trick," exploiting binocular physiology, informs the progressive erosion of a presumed truth (visual or otherwise) and, at the same time, the subjective incorporation of perception, "transforming each observer into simultaneously the magician and the deceived" (Crary 1990, 133). Ultimately, the obscenity of the stereoscopic device and the stereographic technique lies fundamentally in the deconstruction of the apparatus – philosophical and material – of the camera obscura, understood as the reification of the classical conception of the disembodied perceiving subject:

> If the camera obscura, as a concept, subsisted as an objective ground of visual truth, a variety of discourses and practices – in philosophy, science, and in procedures of social normalisation – tend to abolish the foundations of that ground in the early nineteenth century. In a sense, what occurs is a new valuation of visual experience:

> it is given an unprecedented mobility and exchangeability, abstracted from any founding site or referent. (Crary 1990, 14)

Crary's perspective, in line with a Foucauldian framework, understands this individualisation of mediated perceptual experience as a symptom of a broader pattern of control and subjugation. Foucault situated these devices, discursive and material, in the definition of modern thought of the nineteenth century, which determined the formation of a new subjectivity and its institutionalised control. The regimes of vision, in Crary's perspective, thus participate in the determination of such subjectivities by constructing the "prehistory" of what Debord called the *society of the spectacle*. The latter is inextricably linked to the processes of vision because of its susceptibility to deception:

> Since the spectacle's job is to cause a world that is no longer directly perceptible to be seen via different specialised mediations, it is inevitable that it should elevate the human sense of sight to the special place once occupied by touch; the most abstract of the senses, and the most easily deceived, sight is naturally the most readily adaptable to present-day society's generalised abstraction. (Debord 1990)

This intertwining of the regimes of seeing and construction of subjectivity inspired the proposition of a transition from a *spectatorial* to an *observerial* state of perception. The etymological root of the term observer, which recalls the sphere of following a set of prescribed rules, well illustrates the processes of modern subjectification. These processes are also necessarily intertwined with the definition, especially in the nineteenth century, of those structures of capitalism that participate in the formation of a controlled subject suitable for labour exploitation. This correlation, as we have seen with Holmes, finds further confirmation in the isomorphism – material and conceptual – between stereography and the banknote, a symptom of a more general conception of optical technologies as instruments of the erosion of the real.

Here, Crary's theoretical position becomes central to a profound understanding of the environmental image. However, we have seen how figures such as Brewster and Holmes attempted to defuse Wheatstone's revolution in favour of the greater public appeal of the technology based on their theoretical positions on optics. The actual uses and commercial diffusions of the stereoscope, beyond the scientific debates and philosophical reflections,

certainly did not retain the theoretical tension and revolutionary reach that these philosophical toys had originally unleashed. Rather, the domesticated – in the double sense of related to the home and attenuated – fruition of the device narrates the extreme continuity of this "new" medium with the camera obscura paradigm. Crary's main criticism, as we shall see, is also focused on the lack of historical and identity positioning of the stereographic observer, who thus seems to dangerously replicate an abstraction of the perceiving subject that tends towards a universalisation of the cogitating ego, against which Butler (1989) warned us, as we saw in the first chapter.

Schiavo (2003) challenges the idea that the stereoscope played an effective role in destabilising the regimes of vision in the nineteenth century and thus in determining the modern subject. Schiavo's perspective draws from the commercial dissemination and marketing rhetoric of the device. Far from defining and announcing the crisis of the Cartesian subject,[106] as we have seen in part with Brewster's device, the technology seems to reinforce and confirm it through the new tools of optical physiology:

> Where Wheatstone's stereoscope had raised questions about the relationships between objects and viewers, and about the truth of appearances and the knowability of the world more generally, the popular stereoscope, incessantly defined within the world of photography and popular amusement after its commercial introduction in 1851, stabilised and solidified those very relationships. The parlor stereoscope and its views enacted a confidence in vision and in the transparency between the object and its representation. They functioned as material evidence – consumable and repeatable signs – of abstract dreams of nineteenth-century imperial vision. (Schiavo 2003, 131)

Wheatstone's invention, which took the process of virtualisation to the extreme by using mirrors that radicalised the absence of a referent in the process of creating the illusion of three-dimensionality, was not effectively followed up by the commercialisation of the device. On the contrary, Brewster's stereoscope, his theories and its commercial

[106] An important genealogical correlation on the issue is provided by Simon Penny, who emphasises, with respect to one of the descendants of stereoscopy – VR – its role as the completion of the Enlightenment project, understood as the reproduction and complete disembodiment of the observer in virtual space, Cartesian par excellence. Cf. Simon Penny, "Virtual Reality as the Completion of the Enlightenment Project," in *Culture on the Brink: Ideologies of Technology*, ed. Gretchen Bender, Timothy Druckrey (Seattle: Bay Press, 1994), 231-248.

descendants confirmed the primacy of the ideal single eye, which is fully in line with that of the photographic lens and therefore of the camera obscura. In fact, it should be remembered that the commercialisation of stereographic strips did not constitute a market separate from that of photography; they were sold alongside photographs according to a precise classification of their value. Thus, photographic strips, printed on paper and using inexpensive techniques, often constituted the cheapest version of a photograph (Darrah 1977; Schiavo 2003; Teukolski 2020), which retained a higher reputational and economic value precisely because of its adherence to framed artistic conformations and upright postures. The lack of recognition of Crary's obscene revolution in the second half of the nineteenth century is confirmed by much of the literature and journalistic commentary of the time. This is the case with Nathaniel Burgess' influential *The Photograph Manual* (1862), a practical and theoretical guide to photographic and stereographic techniques, with a focus on the *carte de visite*. In a section not coincidentally entitled "The Philosophy of the Stereoscope," Burgess states the following:

> The philosophy of the Stereoscope has been explained as the true philosophy of vision; that as we view all objects through the medium of two eyes, the two impressions are made upon the retinae of the two eyes, precisely in the same manner as the Stereoscopic impression is made by the camera obscura. Each eye has a distinct reflection of all objects brought within its view, and there is no doubt of the fact, that there are represented the two pictures, as accurately as seen in the Stereoscopic production; This is called binocular vision, or seeing two objects at once with the two eyes. (Burgess 1862, 197)

Burgess' reflection tells us much about the actual reception of the technology beyond the scientific circles that were interested in Wheatstone's and Brewster's physiological debate. The study of the reception of the device is therefore required to fully understand its weight within the socio-historical perimeter examined. The revolutionary obscenity of the stereoscope postulated by Crary also finds another point of friction in the comparison to Turner's proto-modernist painting. The association of stereography with painting, especially when it is so closely tied to the high canon of artistic institutions, seems in some respects a myopic choice. In fact, from a perspective that respects the correct historical reception of a technology and its material products, the comparison could seem

incongruous because it is directed at a practice, such as painting, whose connection and medial relationship with stereography could seem weak.

On the one hand, Crary's suggestion is perfectly consistent; after destabilising the regimes of Alberti's scene, the art that had determined its principles – painting itself – explores subverted atmospheres:

> [Turner's] painting of the late 1830s and 1840s signals the irrevocable loss of a fixed source of light, the dissolution of a cone of light rays, and the collapse of the distance separating an observer from the site of optical experience. (Crary 1990, 138)

This type of interpretation is both logically consistent and highly suggestive and recalls recent considerations of the influence of the stereoscopic illusion on the regimes of pictorial representation.[107]

Here, however, it seems necessary to take into account a more precise methodological coherence that seeks to locate its broad socio-cultural bearing not in the "high spheres" of an artistic production such as Turner's but in the "popular" distributions of environmental obscenity. A similar position is taken by Gover (2012) and Davis (2004), both of whom focus on gendered forms of situated perception and thus on the determination of the female role in stereoscopic culture. Davis, in particular, highlights a perceived elitist attitude on Crary's part in considering the stereographic audience to be a generalised object of analysis that is never specified in its various forms of perception and never situated in geographical, historical, class and gendered terms. This interpretation, according to Davis' criticism, is confirmed by the author's complete disinterest in the specific contents of stereographic production (its iconographies, subjects and figures) and, above all, by the consideration of the nineteenth-century public as an *amorphous* entity, ready to be manipulated by the new and obscene regimes of vision:

> It is worth noting that it aids Crary's thesis to see the stereoscope as a rather stupid instrument for an insipid crowd of oglers agog with crude sensation. Its over sixty-year history and domination of the photographic field could only mean, then, that

[107] Albeit in a different sense, Weingarden (2011) notes the role of erotic and pornographic photo-stereography in Manet's painting and the works presented in the Paris Salons between 1863 and 1865.

> the people of the nineteenth century were simple-minded and ready to be led down capitalism's path of stamping them into preconceived vision. (Davis 2004, 30)

Davis' perspective thus seeks to position Crary's observer, who, as we have seen with Butler's Merleau-Ponty (1989), is accused of constructing a dangerously generalising abstraction that leads to a universal masculinity: "For Crary, the place of women in stereography is simply that of objects for the pornographer" (Davis 2004, 30). We will revisit the interaction between female subjectivities and stereoscopic pornography in greater detail, but here, it is only fair to highlight the limited space such an influential theory has devoted to the positioning of its observers. Gover (2012) also recognises that Crary's definition depicts an overly monolithic observer that leaves no room for the stereographic audience's various practices of resistance. Returning to the perspective that focuses on the different extra-institutionalised practices of reception in the visual ecosystem, the emphasis is therefore on the different spectatorial resistances to imposed visual regimes.

The obscenity permitted by the stereoscope did indeed represent a revolution in the regimes of vision, in the sense that the illusion of three-dimensionality challenged the philosophical systems that had attempted to explain the workings of perception. In sticking to this concept, however, this work does not intend to fully capture Crary's commitment to the Victorian public. Rather, this analysis focuses on discovering interpretative models, perceptual processes and image-making practices that can determine alternative roles for stereoscopy in the processes of the subjectification and subjugation of the observers of the time. The attention paid by Friedberg (1993; 2006) Williams (1995), Bruno (2002), Davis (2004), Gover (2012), and to the female observer creates the opportunity to open up scopic alternatives not only in terms of the hypothetical role of control that these devices prescribed but also in terms of an alternative to the voyeuristic configuration typical of the interpretation of the erotic-pornographic image. Obscenity, according to its etymological root[108] and semantic declination, also has an important moral and legal[109] connotation.

[108] The uncertain etymon of the Latin term also recalls the semantic ambit of "bad omen" [from the Latin obscenus or obscaenus, of uncertain etymon: propr. "of bad omen," whence the meanings of "laid in appearance; obscene"] (Treccani; https://www.treccani.it/vocabolario/osceno/).

[109] The conceptual difficulty in defining obscene content is underpinned by the extreme social, cultural and geographical variability attributed to the term. A genealogy of the term can find a useful ally in the legal

This work attempts to combine the optical obscenity proposed by Crary with the semantic and moral understandings usually ascribed to the term by its social context, especially in the nineteenth century.[110] Specifically, we now set up a reflection that, taking into account the characteristics of these environmental images just outlined, reports on their interaction with erotically active, pornographic and, for the time, morally obscene images. Such a perspective, if kept in tension with the environmental obscenity of the stereoscopic image, could define new regimes for an erotic *atmospherology*.

In this sense, it seems necessary to reconsider the evolution of the concept of obscenity in relation to the erotic realm. Lynn Hunt (1993), in her volume *The Invention of Pornography: Obscenity and the Origin of Modernity*, constructs a historical perimeter covering the sixteenth to nineteenth centuries. This historical boundary seems entirely consistent with the camera obscura era, following the chronology defined by Crary. However, Hunt's historical perimeter is determined by a different insight into pornography:

> If we take pornography to be the explicit depiction of sexual organs and sexual practices with the aim of arousing sexual feelings, then pornography was almost always an adjunct to something else until the middle or end of the eighteenth century. In early modern Europe, that is, between 1500 and 1800, pornography was most often a vehicle for using the shock of sex to criticise religious and political authorities. (Hunt 1993, 10)

According to Hunt, the moral obscenity of the erotically active image was not explicitly identified as *pornographic* until the beginning of European modernity in the nineteenth century. This contribution attempts to reveal whether this shift in the understanding of

use of the adjective; one of the first cases and trials for obscenity in the Anglo-American sphere can be traced to the prosecution of the printer James Read, who published *The Fifteen Plagues of a Maiden-Head*, an erotic poem about a servant girl desperately trying to lose her virginity. The case against Read, however, resulted in moral and spiritual condemnation and no effective legal action. On the issue of the origin of the term in eighteenth-century England, see Geoffrey R. Stone, "Origins of Obscenity," *University Review of Law and Social Change* 31, no. 4 (2007), 711-32.

[110] Heath (2007) outlines three basic criteria for the definition of obscenity in the nineteenth century: The first refers to the question of the visibility of the sexual, in line with the on-scenity described by Williams (2004). The second point can be referred to the exposure – literary or visual – of "unconventional moral attitudes." A third criterion can finally be ascribed to the "modalities" and registers of language, deemed "vulgar" and thus obscene in their use of colloquial (and mostly sexualised) terms.

the erotic image might have had something to do with the perceptual and technological revolutions that stereographic technologies brought about in that century.

The origin of the pornographic as a category of the aesthetic is certainly difficult to define, but this dissertation nevertheless considers the synchronicity between its emergence and that of immersive optical technologies. In this sense, it is crucial to note how proto-pornographic products retained a deeply political appeal. The elements that began to define a strictly pornographic (and not political) visual product from the second half of the nineteenth century onwards seem to be linked, once again, to the technical and material development of the photo-stereographic devices of the time.

Indeed, it seems that the rhetoric of photographic realism and its stereographic augmentation were able to define a new statute for erotic representation, hitherto permitted only by the mimetic qualities of non-technological tools such as painting and literature. Hunt recognises the French Revolution as a turning point in the establishment of an independent pornographic genre. After the Revolution, a period of high social ferment during which political pornography reached its peak, pornographic products began to define themselves as popular products, purged of wider philosophical implications, as in the case of De Sade (1795), and political implications, such as in the case of the extensive literary and visual production that combined the obscene with a critique of many institutions over the centuries.

Williams (2019), following Hunt and Crary, acknowledges how the changing regimes of vision in the nineteenth century contributed to this progressive independence of the pornographic genre. According to the author, it is the different perceptual and physiological interactions with these new machines of the visible that brought about this shift in the erotic image. The forms and devices of the so-called "pre-cinema" and, with them, stereoscopy[111] resulted in a new relationship between body, machine, perception and image, setting up a highly multi-sensorial stimulation that can be ascribed to the sphere of body genres (Williams 1991). However, Williams (2019) attributes this "lust effect" to the ability of these philosophical toys to evoke "both motion and e-motion" (104). This interpretive key thus links the eroticism of such media to their ability to suggest a movement of the image. Therefore, in line with the thesis that Williams

[111] In this context, however, we would like to specify, as we shall see, that stereoscopic technology is not exclusively ascribable to a genealogy of filmmaking.

expressed in the earlier *Hard-Core* (1989), technically reproduced eroticism seems to be implicated in the processes of the movimentation of images.

If, on the one hand, this system describes a genealogical line with a great critical fortune, which certainly does not want to be refuted, it suggests, on the other hand, other possible keys of interpretation. In this case, they have more to do with the aesthetic, political and social consequences of the three-dimensionalisation of the static image through stereoscopy and the way in which it establishes an unprecedented relationship with the pornographic body. Rather than the ability to suggest the illusion of movement, the emphasis here is on the typically stereoscopic ability to construct three-dimensional erotic spaces and atmospheres. This aspect, which returns cyclically in the pornographic technologies of the virtual, owes its effectiveness and commercial popularity to what could be called, following Colligan's (2008) definition, "the stereographic effect." In examining the reasons for the loss of interest in the medium in the late nineteenth and early twentieth centuries, Colligan recognises that stereography semiotically constructs a counterpart to what Barthes (1986) calls the "reality effect." Barthes' analysis, centred on nineteenth-century French realist literature, notes that the excessive and seemingly "useless" abundance of detail and description promotes a peculiar form of "realism." Semiotically, it becomes such that when the signifier apparently collides with the referent, determining a new role for the "absent signified," it is incorporated into its sign and devoted to *connotation* rather than *denotation*. According to Colligan, stereography brought this literary effect to a new regime of the visible:

> The stereograph effect offers a different form of realism, as it relies on the construction of three-dimensional space rather than the accumulation of useless details. Semiotically speaking, the sign acquires fathoms and depths. [...] It encompasses all of its parts (signified, signifier, referent), referring within itself rather than exercising a hierarchy of inclusions and expulsions. It therefore suggests its material properties at the same time as it brushes up against sundry cultural forces that continually reshape it. (Colligan 2008, 78)

The author's position and the application of Barthes' reality effect to the stereographic image and its semiostructure allows two considerations. On the one hand, they confirm the environmental obscenity defined by Crary. On the other hand, they further specify the

fascination and popular success of the device in its interactions with erotic-pornographic material. According again to Colligan, "the stereograph thus created and satisfied a desire for a form of realism that was dimensional and perceptual rather than mimetic and symbolic" (78) based on a strategy that recalls a form of realism, as Calleja (2011) stated, that is not simply based on mimetic representation but rather on the constitution of an atmospheric and environmental reality. Colligan, as we have seen with Teukolski, recalls Baudrillard's simulacral perspective. The latter uses the regime of the pornographic to identify a type of image that confuses representation and reality in a semiotic crash typical of erotic obscenity. Baudrillard associates this chiasmus with a personal anecdote during an exhibition of hyperrealist sculpture at the Beaubourg Centre in Paris. In the exhibition, whose references Baudrillard does not specify,[112] a series of mannequins are placed in sexually allusive positions. The perceptual dynamic of the exhibition, which recalls the characteristics of stereography[113] in its scheme of hyperrealism and three-dimensionality of sculpture, determines the destruction of any apparent layer of illusion:

> All that remains here is the extraordinary technique by which the artist erases all the signals of divination. Not even a trace of illusion remains underneath the veracity of the hair. Precisely because there is nothing to see, people approach, lean over and flair out this hallucinating hyper-resemblance, haunting in its friendliness. They lean over to see an astounding thing: *an image where there is nothing to see*. (Baudrillard 1988, 31)

Baudrillard's stance on pornography, further discussed in his later work *Seduction* (1990), invokes a series of discursive commonplaces that help us to specify the chiasm of obscenity in question. Baudrillard's terminological insistence on posture – leaning over – also seems to promote a characteristic feature of three-dimensional pornography. As anticipated, the philosopher is not referring specifically to stereography but rather to sculptures, which are presumably installed in such a way as to require a inclined posture. It is significant, however, that this aspect is particularly emphasised in Baudrillard's

[112] The exhibition and the work in question cannot be traced from the information available with respect to the archive of exhibitions at the Pompidou Centre in the decade prior to Baudrillard's writing.
[113] We will focus later on the association between stereography and sculpture, central to the interpretation of the plastic image that the device allowed.

phenomenological ekphrasis, alluding, albeit with specific differences, to the contortions that the uncomfortable media under consideration here demand of their observers.

Colligan quotes Baudrillard to emphasise the longstanding influence of stereographic obscenity on pornographic image theory. Indeed, Baudrillard recognises in pornography the perfect development of the semantics of the simulacrum. Specifically, obscenity, the staging of what is normally kept behind the scenes, promotes for the philosopher a "truth effect" (Baudrillard 1990, 35) – the counterpart to the reality effect mentioned by Barthes – which ultimately confirms the dismantling of the concept of truth itself.[114] The association between proto-virtualisation and the erosion of the real, as we have already seen in the case of the discursive link between stereographs and banknotes, is certainly particularly fruitful from a philosophical and aesthetic point of view. However, this approach, while very inviting and suggestive, runs the risk of obscuring the real weight and diffusion of these technologies and the erotic material associated with them within the correct social and historical perimeter. In attempting to close the chiasm of obscenities described so far (i.e. the scenic and the moral), it does indeed seem possible to define stereographic technology as a relevant and traditionally under-researched part of the constitution of the pornographic genre. Indeed, going back to Hunt and his reflections on the transition from political obscenity to pornography as an "independent" genre, the transition's complete synchronicity with the establishment of stereographic diffusion puts us in a position to draw some connections. If, as Baudrillard confirms, at the root of the pornographic, as it can be understood in its contemporary sense, is the will to bridge the gap between reality and representation, the stereoscope, before the moving image, seems to make such an illusion – at least rhetorically – possible.

Thus, in light of what has been discussed so far, it is possible to trace the progressive construction of the regime of the pornographic back to the various obscene interactions that stereography allowed in the second half of the nineteenth century. The independence of the pornographic genre, we would like to propose here, cannot be attributed solely to the photographic technique, nor even to the definition of the cinematic regime and thus to the technologies that made the illusion of movement possible. The material, conceptual and perceptual power of stereography seems to define itself as an indispensable building

[114] "But in fact pornography does not mask anything (yes, that is indeed the case). It is not an ideology, i.e., it does not hide some truth; it is a simulacrum, i.e., it is a truth effect that hides the truth's non-existence" (Baudrillard 1990, 35).

block in the construction of a "modern pornography," to use Hunt's term. This role is determined on several planes: at the level of the specificity of the proto-virtual environment and at the level of the eroticised contact with the machine. As already outlined in the first chapter, the stereographic transition of pornography inaugurated a specific type of obscenity determined by the interaction and material friction with devices that participated in allowed a multisensory erotic experience based on technological prostheses and epitheses. In fact, by imagining a genealogical line based on the device of the frame, photography and the subsequent cinematic developments of the technically reproduced image maintain a perceptual and postural regime that does not profoundly challenge either perceptual and moral postures. The discomfort of these media allows an unprecedented possibility of erotic enjoyment of an *image*, if it can still be called so.

The system of stereoscopic eroticism thus seems to add a building block to the independence of the pornographic genre while establishing itself as the expression of a long genesis linked to the *desiderium* of the technical reproduction of a sexual act. The pornographic, in its intention to blur the boundaries between reproduction and erotic action, finds an important conceptual focus in this originally environmentalised form. If, as we have seen from the data on the diffusion of the device and its techniques, stereography was one of the main medium through which the viewer enjoyed the technically reproduced image at the time, we need only consider its equivalent diffusion in the pornographic sphere. This not only backdates the "prehistory" (Williams 1989) of pornography but also redefines its characteristics. Specifically, the earliest forms of pornography were not framed images; they did not follow the ontology of the artistic image. From their very origins, they promoted a virtualisation of the technically reproduced sexual. By proposing to immerse oneself in the image and transcend its boundaries, stereopornography, for the first time, promoted an interaction with desiring machines and bodies that went beyond the representational and mimetic model, demanding from the viewer an involvement, a posture or a physiological and cultural engagement beyond the safe zone of distanced and framed perception.

The eroticism of such a state, in addition to the aforementioned physical contact with the machine, also seems to have been determined by an increased "tease structure" of such images. Miriam Ross (2019) uses this term to define the agency typical of the stereoscopic pornographic image, which appears to make a sexually active body accessible to touch

and manipulation. However, this possibility of "touching with the eyes" is necessarily denied, and it is in this machinic seduction that much of the perceptual and erotic pleasure of the stereoscopic conformation of early pornography lies. Ross links this structure of three-dimensional pictorial provocation to an overabundance of detail that characterises the stereographic image: "stereoscopy's hyper-haptic visuality keeps the viewer close, the additional detail that is provided in the stereoscopic image offers mastery via an indicator of greater visual access to the pornographic body" (553). While the seductiveness of the stereoscopic image is undeniable, it is difficult to relate its effectiveness to the degree of realism and abundance of detail apparently afforded by the stereoscope. The type of perception that this technology allowed was, just as with contemporary Virtual Reality (VR), a sort of "overall" view. To create and maintain the illusion of three-dimensionality, the optical focus must not be on specific details or move excessively within the environmental image.[115] It should be noted that this observation was determined by a type of experience – that of the writer – who is not accustomed to the everyday use of the stereoscopic effect, as an observer of the time might have been. However, it is necessary to point out that, unlike a two-dimensional photograph, which is determined by its ontological limits (more or less explicit), a stereographic image implies the impossibility of "high definition" in favour of the pleasure derived from the three-dimensional illusion. We therefore emphasise that the optical experience of stereography, precisely because of its quality of visual instability, does not participate in the realisation of that *optical unconscious* that Benjamin (1931) discovers in photographic technologies. This aspect, seemingly secondary to the definition of the characteristics of early pornography, delineates a further divergence from the interpretive key that associates the birth of the pornographic almost exclusively with the technologies of cinema. According to the classical approach proposed by Williams (1989), cinema has the capacity to

[115] Ninio (2000) accurately describes the movements and processes involved in stereoscopic vision. They are in fact highly unstable and require strong physiological control by the observer: "The brain calculates the relative depths of a small number of reference points on each image and constructs a three-dimensional representation in which these reference points are positioned in depth in accordance with the result of the calculations. At first, the rest of what is perceived in three dimensions is most probably inferred from the usual monocular indicators, but little by little the relief that is calculated using stereoscopy gradually adds detail to – and corrects if needed – the relief obtained by other methods. If the viewer lacks skill, three dimensions will form in specific areas only and will dissolve as the eye moves, while the more skillful viewer will create a complete three-dimensional interpretation in which the acquired elements gradually come together in a harmonious way"; Jacques Ninio, "Three-Dimensional Perception," in *Paris in 3D: From Stereoscopy to Virtual Reality 1850–2000*, ed. Françoise Reynaud, Catherine Tambrun, and Kim Timby (London: Booth-Clibborn Editions, 2000), 17–21.

construct analytical quasi-medical images. The analytic quality of chronophotographic and cinematographic techniques, in line with the medical and proto-imaging devices of the time, would have determined, in a Foucauldian way, the graft of a gaze capable of deriving erotic pleasure from the fragmented and surgical exposure of larger-than-life bodies.

Instead, the stereographic device proposed a blurred vision whose construction lost the analytical logic of the cinematic image. It was built on a delicate balance of illusion, always ready to fall apart by revealing its own trickery. The instability of the three-dimensional illusion is clearly part of the teasing structure described above; not only do the three-dimensionalised erotic bodies demand to be touched and manipulated, but it is the illusion of stereoscopy itself, with its unpredictability, that seduces its user into a constant challenge and perceptual discomfort, which is at the heart of its media success.

The kind of pornographic image that a stereoscope can produce is therefore not linked to Londe's surgical eye,[116] Muybridge's chronophotography[117] or early erotic medical films, as in the case of Camillo Negro.[118] It rather seems to introduce an atmospherological erotic genealogy. The constant confusion of perspective planes and the vibration dictated by the precariousness of the illusion are precisely what determine the erotic appeal of these somatic images. However, unlike the long and widely studied archaeological topic of proto-movement illusions, these technologies produce a form of realism that, as we have seen with Colligan, is *dimensional* – that is, determined by the possibility of coexistence and embodiment in a virtual space.

To fully understand the characteristics, models and discursive commonplaces of environmental eroticism, we now turn our focus to the main features of the pornographic image designed, constructed and produced for stereography.

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[116] On the issue see: Georges Didi-Huberman. *Invention of Hysteria*. 1982. Reprint, National Geographic Books, 2004; Giancarlo Grossi. *Le Regole Della Convulsione. Archeologia Del Corpo Cinematografico*. Milan: Meltemi, 2017

[117] Cf., besides the classic Williams (1989), Phillip Prodger and Tom Gunning, *Time Stands Still: Muybridge and the Instantaneous Photography Movement* (Oxon: Oxford University Press, 2003); Dimitrios Latsis, "Landscape in Motion: Muybridge and the Origins of Chronophotography," *Film History* 27, no. 3 (2015): 1, https://doi.org/10.2979/filmhistory.27.3.1.

[118] Cf. Adriano Chiò, Claudia Gianetto, and Stella Dagna, "Professor Camillo Negro's Neuropathological Films," *Journal of the History of the Neurosciences* 25, no. 1 (December 18, 2015): 39-50, https://doi.org/10.1080/0964704x.2015.1070034; Antonio Farassino , "Il Gabinetto Del Dottor Negro (Analisi Di Un Film Psichiatrico Del 1908)," *Aut Aut*, no. 197 (1983); Antonio Farassino , "Frammenti Neuropatologici," *Immagine: Note Di Storia Del Cinema* 3, no. 6 (1983): 1-4.

3.2 Archiving the Erotic Atmosphere: The Geography and Censorship of Stereopornography

Tracing the distribution of stereopornographic strips is a complex task. The rapid deterioration of the paper strips (whose material support was often of poor quality), the need to archive such productions "in secret" and the work of censorship have made it particularly challenging to trace a precise commercial history of the dissemination of such images. There are, however, several elements that allow us to reconstruct a geography of the proto-pornographic market in the second half of the nineteenth century.

It is no coincidence that the chronology we are interested in focuses on the decades after 1850. These dates correspond to the commercial diffusion of the proper photographic technologies (i.e. those that allowed the economic and mass production of images and stereographs). The diffusion of calotype and collodion technologies did not take place in Europe before these decades. This chronological specification is relevant precisely because the object of our analysis is a "poor" type of image. It is, as Steyerl (2009) notes with regard to the weak ontology of contemporary digital images, often determined by qualitative characteristics quite different from the preciousness of the erotic daguerreotype. Before the spread of the aforementioned techniques, pornographic stereoscopy was, as Solomon-Godeau (1986) argues, "a luxury item" (95). The daguerreotype, by its very nature as a unique and non-reproducible object, maintained an auratic ontology that outlined a specific relationship with the pornographic image reproduced on this medium. The pornographic daguerreotype was often associated with a precise system of ornamentation that embellished its support and connoted its social status as an object of luxury. The daguerreotype, the first form of photographic and erotic-stereoscopic dissemination, is therefore a product that held a strong social connotation; it was considered a precious object, carefully protected, on which the postures required by the traditional artistic artefact were applied. This type of erotic product reached a peak in production between the great Parisian Universal Exhibitions (in 1855 and 1867), when the city was visited by wealthy foreign entrepreneurs (Solomon-Godeau 1986, 96). However, the subject of most interest in this work is stereopornographic reproduction on paper. Processes such as calotype and albumen printing not only made it possible to produce more positives from a negative but also significantly reduced the cost of

manufacture, thus giving rise to the photographic and stereoscopic pornographic industry in the second half of the nineteenth century.[119] A mass-production strategy which thus exploited these techniques for its products' wider dissemination. Indeed, it is typical of the pornographic to install itself and parasitise on the most *efficient* medium. In fact, the term "efficient" is used here to describe a form of media that combines both low cost and maximum distribution. In fact, the pornographic industry and its materials have always exploited the medium that best suits these characteristics, making the study of pornography an important methodological ally in fully understanding the flows of media emergence and immersion over the last two centuries.

From the second half of the 1850s, the scale of stereographic production of a pornographic nature increased significantly, and its diffusion began to establish a series of commonplaces related to both the commercial and, more broadly, the cultural and political nature of such production. With the intention of constructing a stereopornographic geography – albeit a partial and Eurocentric one – we note that a number of discursive commonplaces points to the predominance of the genre on French territory.[120] However, this geographical conflation of the proto-pornographic industry with France needs to be further explicated. On the one hand, the more "relaxed" nature of French artistic culture probably gave the various photographic studios of the time the opportunity to propose a type of material that was more allusive and liminal to the artistic nude (Needham 1972). At the same time, the spread of the commonplace that associated the obscene with the "French" was influenced by the Francophobia that British imperialism had weaponised against Republican France and the Communard experiments of the same years (1871). Indeed, Simone Popple (2005) notes that on British soil, many of the concerns of the Victorian press were linked to the perceived moral threat that the importation of French photography would pose to the Anglo-Saxon population. In 1869, an article in the *Daily News* denounced French obscenity on England's doorstep:

[119] The introduction of the albumen printing technique and the definition of the *carte de visite* format by Disderì, who was inspired by the stereoscopic camera, had implications for the construction of a commercial system for the diffusion of photography and stereoscopy between Europe and the United States.
[120] Particularly noteworthy is the insistent presence in English-speaking territories of the association between the adjective "French" and the subjects who maintained a greater erotic agency in the stereographic strips. This is the case of "French maids" or "French cooks" always ready to seduce honest English citizens.

> It came over in French novels, in French prints, and in French pocket handkerchiefs. The golden youth on the other side of the channel have for years been accustomed to those striking Cartes and groups which have recently been decorating our magazines. (*British Journal of Photography* 1 January 1869 in Popple 2005, 118)

This kind of connotation was confirmed by the pseudonyms adopted by some Victorian-era pornographers. This was the case of George Harrison, known as Paul de Paris, who made his association with French culture a symbol of the erotic connotations of the material he produced.

The definition of such a commonplace is also recorded in the large number of stereographic erotic strips that include the adjective "French" in their titles. Particularly in the Anglo-Saxon and American markets, the erotic connotation associated with French determined the narrative commonplaces typical of para-erotic stereographic productions at the turn of the century. Teukolsky (2020) and Davis (2004) note the recurrence of this association. This is the case, for example, in the series of stereographic strips *Mr. and Mrs. Newlywed's new French cook*, distributed by Underwood and Underwood in 1900, or the series *Mr. and Mrs. Turtledove's new French cook* (1902, Universal View Co), produced by William Herman Rau. The recurrence of the adjective in English and North American territories is thus linked to the lasciviousness of the subjects who embodied this nationality. A number of references help us to reconstruct the geography of the diffusion of erotic and pornographic stereography and to define the spread of certain stereotypes that drew their discursive power from the commercial dissemination of obscene materials. Thus, the French proto-pornographic industry grew from the second half of the 1850s as a result of the diffusion of the above-mentioned technologies, which, as Salomon-Godeau (1989) points out, also involved a loss of quality and craftsmanship. The erotic stereographic strips inaugurated, in full synchrony with the birth of the pornographic language, an ecosystem of "poor images" ante litteram.

To understand the extent of this proliferation, one need only refer to the numerous obscenity trials that took place in Europe and the United States during the same years. In Victorian England, and given the specific nature of the sexual culture of the time, there were several trials that had to do with the illegal production of pornographic stereography. On 18 March 1870, Henry Evans, a well-known London photographer, was sentenced to

two years' hard labour for possessing 13 calling cards and 850 photographs deemed obscene. The prosecution's commentary on the photographs found is certainly significant:

> Thirteen wicked, lewd bawdy and obscene pictures representing the persons of men and women naked and partly naked in obscene and indecent attitudes, postures and positions in contempt of our said lady the Queen. (*British Journal of Photography* 25 March 1870, 141 in Popple 2005, 113)

The focus remains on posture, then, specifically where the contortions of the bodies depicted in the photographs departed from the more morally consonant figures of classical portraiture. Evans' photographs and trial, as Popple (2005) notes, were a turning point for Victorian culture and provide several analytical resources. The particular severity of the 1870 legal proceedings is indicative of a period when the authorities – in this case British, but the same sentiment was felt in other European countries – had no means of regulating the explosion of photographic technology. A case like the one against Evans and his obscene photographs elucidates not only the commonplace of pornography as a "moral poison" but also, more generally, the social panic in relation to "new" media such as photo-stereography. It is therefore no coincidence that the progressive independence of the pornographic genre as a new style of technical reproduction of sex is perfectly synchronised with the consolidation of photographic and stereoscopic technology, resulting in a highly effective crasis of social concerns.

Another case directly targeting obscene stereography is represented by the heartfelt letter written by an anonymous citizen (A. Londoner) that appeared in *Photographic News* in August 1860. A. Londoner was deeply alarmed by the amount of erotic material displayed in the windows of London photographers:

> Stereographs of an indecent character are suffered to be openly exposed in the shop windows, so that a man who takes a walk with his wife and daughters dare not venture to look at the windows of many of our photographic publishers? (*Immoral Photographs*, 168)

The series of letters in question also highlights a commonplace of the time, as we have already seen with Baudelaire. A letter in reply to A. Londoner underlines how photographic moral poison and allusive attitudes were considered to be particularly dangerous for the female audience:

> Sir, – Your correspondent, 'A. Londoner,' has done good service in calling attention to the prostitution of the beautiful art of photography to the obscene subjects which have been occasion of Lord Campbell's legislative enactment. I do not, sir, believe that the public are well aware of the demoralisation introduced even among the higher *class of females* (I speak advisedly) by this application of photography. Stereoscopes of the most obscene and lascivious characters are in more common circulation than is supposed; and can be found lying, perdu, in many aristocratic boudoirs! (*Immoral photographs*, 180, emphasis mine)

Thus, in addition to the Baudelairean denunciation mentioned above, pornographic stereography was associated, albeit with the necessary caution, with a female observer, which will lead us, as we shall see, to consider the gendered and class positioning of such products.

The English panic over "French" obscenity was also structured by specific state organs. The Society for the Suppression of Vice and the National Vigilance Association were among the organisations responsible for safeguarding morality and public decency in Victorian England. Not coincidentally, these organisations were at the height of their activity at about the same time the market for stereopornography was being defined. The main concern, as Lord Campbell's Act of 1857 made clear, was the corruption of "weak spirits," which in England at the time were associated with young and female minds: "The test of obscenity is whether the tendency of the matter charged... is to deprave and corrupt those whose minds are open to such immoral influences" (Regina v. Hicklin 1868, 371).

In the same years, Paris, albeit with a different approach and more libertarian legislation, also experienced the same moral panic over pornographic photo-stereography. Denis Pellerin (2000) analysed a file from the archives of the *Préfecture de Police*. Called BB3, the file survived the Communard fires of 1871 and contains an extensive catalogue of Parisian photo-stereographic obscenities printed between November 1855 and August 1868. The extent of this counter-archive of Parisian pornography was determined by a law instituted 17 May 1819 (Articles 1 to 21), which required producers to submit a copy of all their photo-stereographic productions to the *Ministère de l'Intérieur* or the *Préfecture de Police*. As in the case of the English institutions, the state desired to control photo-stereographic production to reduce the possibility of moral obscenity. The case of the BB3 file and the legislative style of Paris at the time also reveal a key feature of pornographic ontology. As we shall see, the latter owes its increasingly aesthetic character not only to its intrinsic qualities but also to its external shaping by a system of laws, cultures and moral codes that constitute its essence. In the case of the BB3 file, this aspect also inadvertently produced an archive of photo-stereoscopic pornographic images and

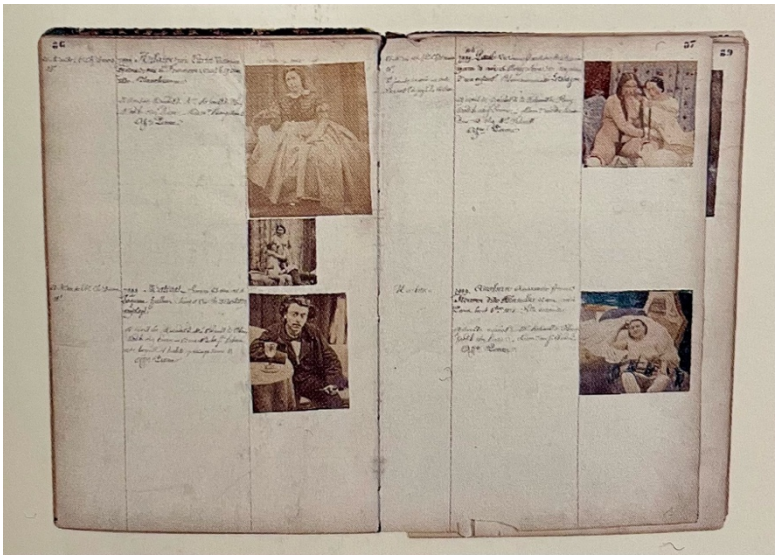

Figure 29. File BB3, a bound file containing information relating to the illegal production of erotic images, 1855-1868. The file contains 303 handwritten pages; Coll. Archives de la Préfecture de Police de Paris, catalogue no. BB/3. The file is open at pages 86 and 87, in Pellerin (2000, 91).

its industry. The layout of the document itself (Fig. 29), in comparing photographic reproductions, descriptions and producers, promotes a kind of semiotics that will persist in contemporary pornography – that is, one that always associates the visual and audiovisual with the textual, in the form of titles and online tags.

The document thus provides insight into the socioeconomics of the French obscene industry:

> These pages show that, as well as the official market for stereoscopic products, there was an alternative industry whose key players were often respectable merchants who had discovered that this activity was an easy way of substantially increasing their income. (Pellerin 2000, 91)

This "underground" industry is an important element in understanding the distribution and flows of pornographic materials at the time and the difficulty, even today, of reconstructing a precise economic scaffold of the phenomenon. In fact, many of the producers of the time had a double production line for photographs, which were often sold at a higher price, and stereographic ones, which, as we have seen, were considered to be of lower value. In between, there was clearly the sub-production of pornographic material, which was distributed illegally in the same places. It should also be noted that the *carte de visite* format was often composed by separating the two images that made up the stereographic strip. This aspect, which has been confirmed by several sources (Teukolski 2020; Davis 2004), allows us to state with a certain degree of certainty that many pornographic photographs or *carte de visite* could have originally been stereographic strips.

Even in the French context, the moral "poison" of obscene photo-stereography was considered particularly dangerous and more potent in its effects for female subjects. *La Gazette des Tribunaux* stressed that the harshest penalties should be applied to those who "speculate in immorality and encourage young women, who are probably already ruined but who surrender all sense of propriety in these immoral studios, to share in the dangers of their illicit trade" (*Revue Photographique* 1860, in Pellerin 2000, 94).

While the production of stereopornographic material in Victorian England and Paris in the second half of the nineteenth century appeared to be on a scale that caused widespread moral panic, the United States experienced a markedly different relationship with obscenity in the same decades. According to Davis, the production of erotic or pornographic material did not reach the same scale as it did in Europe: "While France had a pornographic stereo industry, no scholar has been able to attribute a stereo view of a nude person to American production until the twentieth century" (Davis 2004, 31). The influence of French obscenity on the United States therefore seems to have been minimal. In America, the production of allusive stereographic strips, far removed from explicit European pornography, focused more on courtship and marriage scenes, promoting a

narrative form centred on gender roles and marriage stereotypes. What we are interested in understanding based on the obscene geography outlined here is the role that this repressive attitude played in the construction of a precise ontology of the pornographic image and immersion through stereoscopic technologies. The relationship between the pornographic and its censorship is, in fact, at the basis of the genre's progressive independence. As we have seen with Hunt, if traces of such a language can be found as early as the sixteenth century with the invention of the printing press, it is the nineteenth century and its second half that define the term in the modern sense. In this process, the roles of archiving, censorship and control are crucial. The discursive commonplaces of stereography, especially in Holmes, already describe this conception of technology as an archiving device of reality. Here, too, we want to emphasise the dual nature of the processes at work; a technological product is simultaneously censored and archived, which in turn bases its functioning on a hypothetical capacity to archive (sexual) reality. This conceptual kaleidoscope is nothing more than a transliteration of those discursive (and visual) devices around sex and its reproductions that Foucault describes in the first volume of *History of Sexuality*, not coincidentally focusing on the nineteenth-century origins of this short circuit. This conceptual chiasmus allows us to locate more precisely the role of stereography in the construction of early pornography and its devices. The environmental nature of the stereographic three-dimensional image, before than its (chrono) photographic counterpart, extend the idea that a technical device could be used to construct a careful archive not of two-dimensional, framed representations, but of three-dimensional erotic environments. This aspect will have important consequences for the pornographic gaze and, as we shall see, for the application of the categories of movement possible in these proto-virtual erotic landscapes.

Archiving is thus the other pole of the pornographic's ontological definition. The conceptual thrust dictated by the institutions of control generated a new product characterised by a supposedly high moral agency. The organs and para-institutions of control described above are in fact symptoms and agents of a more complex disciplinary system that, in Foucauldian terms, describe the various expressions of the sexuality *dispositif*, which finds in the archive and its attitudes and postures a valuable ally. Dean, Ruszczycky and Squires, in their anthology *Porn Archives* (2014), specify the importance of the archive-device in defining the pornographic genre: "Pornography as a category

emerges in tandem with the archive, through historically specific procedures of sequestration" (Dean 2014, 1). The origin of the archiving of the obscene, according to Walter Kendrick's masterful work *The Secret Museum* (1987), is often linked to a museological necessity. This conundrum set in motion a complex process guided by the prevailing museological ideology of the time, which dictated the need to protect these artefacts from public view, particularly from sections of the population, such as women, who were perceived as ill-equipped to deal with the inherent eroticism of such iconography. This conservation impulse stemmed from social norms and values that sought to regulate public exposure to potentially provocative images, reflecting wider anxieties about propriety and morality. The conservation efforts undertaken in response to the discovery of Pompeii thus highlight the complex interplay between archaeological stewardship, cultural mores and gender dynamics within the historical context of the eighteenth century.

The archiving and shielding of these products thus became, paradoxically, the very techniques that defined their characteristics. What is *pornographic* is what is obscene and what must therefore be hidden.[121] The institutions involved in such control, in the very act of containing access to such objects, produced a system of discursive devices (e.g. the press, laws and theories) and material devices (e.g. the erotic cabinet at the Museo Borbonico) that only amplified its kaleidoscopic presence. It is interesting to note, particularly with regard to the Pompeian context, a perfect synchronicity between the determination of the pornographic in the second half of the nineteenth century and a corresponding museological and museographic drive in the museum, which housed the archaeological collection in question. In fact, as Dean points out, from 1866 onwards, the cabinet in charge of collecting obscene material was known precisely as the "pornographic collection," thus defining the ontological independence of the concept and its images and artefacts, in full agreement with the spread of photo-stereography.

What seems to be relevant in the comparison of archaeological and photo-stereographic pornography is their attitudes towards the processes of display and visibility:

[121] See the essential contribution of D. H. Lawrence (1933). For Lawrence, who was involved in several obscenity lawsuits because of his novel *Lady Chatterley's Lover*, pornographic obscenity is determined precisely by the discursive and legal organs that conceal a given literary or artistic product from view.

> The crucial difference between ancient and modern approaches to explicit material is that at Pompeii it was not hidden but integrated with other aspects of civic and domestic life. In contrast, the nineteenth century invented pornography by insisting on its segregation from public view. (Dean 2014, 3)

The archive, as Derrida (1995) famously argues, shares its etymological root and conceptual efficacy with the notion of the institution. The perimeter of what is pornographic, what is obscene, is thus always excluded from the *institutional templum*. However, it is precisely the actions of the institution-archive that determine its ontological essence in a game of paradoxes that still characterises the attempts to define pornography today.

3.3 The Visual Commonplaces of Erotic Stereography

Pornography is frequently considered an *economic* genre. This often pejorative term – think of the colloquial "cheap" to denote something of little value – has here a precise connotation. The idea that pornography and its products are a form of economic style is meant to illustrate the fact that it, like other forms of body genres, has the capacity to parasitise the most effective medium. If this attitude of the pornographic has been well analysed in relation to the technological and material development of audiovisual devices, little has been said about the techniques it has adopted in relation to the stereoscopic image. What were then the main strategies for constructing an effective pornographic environmental image? Which techniques did the many pornographers of the time use to construct the best erotic atmosphere, and for which eyes and bodies? Furthermore, what features of nineteenth-century Western culture can we read into these compositional strategies?

We have seen in the first chapters that the stereoscope, in its various material manifestations (Wheatstone, Brewster, Holmes, coin-operated, etc.), already implied an eroticisation of the observer precisely because of the allusive and distorted postures it required. Indeed, the iconography of peep media has largely played with the parodic and sexualising aspects imposed by such devices. As early as the nineteenth century, immersion and perceptual absorption were considered so effective that they implied the

user's complete unawareness of their surroundings. In this sense, the high frequency of parodistic iconography depicting the users of these immersion machines as perpetually robbed or as victims of other forms of deception is illustrative. As these images tell us (Figs. 30-33 in Balzer 1998), such philosophical toys – in the specific case zograscopes[122] and *boîte d'optique* – created an experience with such an immersive gradient that malicious perpetrators were able to remove money and other valuables from the assorted bodies.

[122] On the device, see Erin C. Blake, "Zograscopes, Virtual Reality, and the Mapping of Polite Society in Eighteenth-Century England," in *New Media, 1740–1915,* ed. Lisa Gitelman and Geoffrey P. Pingree (Cambridge: MIT Press, 2010), 1–30.

Figure 30. Charles Williams, 1797, Billy's Raree-Show – or John Bull Enlighten'd, *in Balzer (1998, 68).*

Figure 31. John Doyle, A Show Up!*, 1832, in Balzer (1998, 69). .*

Figure 32. C.J. Grant, Paying for Peeping*, 1835, in Balzer (1998, 70)*

Figure 33. Maggie Salcedo, La Boite D'Optique*, c. 1920, in Balzer (1998, 71).*

This type of iconography, associated with the physiognomic connotations of its protagonists, determined, even before the spread of stereoscopy, a clear moral characteristic of these "new" media. The prerogative was always associated with the context of attractions, hawkers and travelling magicians. A social perimeter was established around the rectitude of "honest" and high-middle-class citizens, often victims of the supposed pitfalls of these philosophical toys. Stereoscopy's bad reputation thus has roots that can be traced back to devices such as the zograscrope, which shared with stereoscopic technology the ability to create an illusion of depth, albeit minimal. The illustrated examples demonstrate a particular type of illusion, manifesting a discernible trajectory characterised by the gradual "brutalisation" of the individual caught up in it. This phenomenon is accentuated by the striking alignment of social class, with the tactile experience, or haptic engagement, being emblematic of the middle and lower socioeconomic strata. Meanwhile, the visual detachment of the upper middle class serves as a poignant marker of distinction. This link between class dynamics and sensory perception underscores broader socio-cultural inequalities, where the stratification of social hierarchies extended beyond economic indicators to encompass perceptual and experiential domains. Such technologies and "new" media, on the one hand, inaugurated a dangerous capacity for immersion, leading to an effect of involuntary eroticism, often parodic and humorous.[123] On the other hand, with the emergence of the erotic-stereographic market, techniques and compositional strategies began to be defined to make the most of the device and build the best offer for the audience of the time.

During the period under study, the support for stereographic strips was mainly albumen printing, a technique that, as mentioned above, allowed printing on paper from a glass plate negative and thus the production of several positives from the same negative. The layout of the stereographic strips was highly variable (in size and ornamental solution) but basically consisted of the two individual photographs side by side. The space between the two images was occupied either by ornamental elements, especially in the case of

[123] The concept of perceived danger serves to reaffirm the interconnectedness of immersion, visual and literary techniques and moral implications. This is particularly evident when juxtaposed with the discourse on onanism, as explored in Chapter 1.2. Such comparisons reveal that the representation of danger in immersive narratives is not a superficial construct but rather a nuanced reflection of societal attitudes and ethical frameworks. Furthermore, the examination of visual and literary devices in this context highlights their role not only as narrative tools but also as channels through which moral connotations are conveyed and negotiated. The analysis of perceived danger in immersive experiences thus offers valuable insights into the complex interplay between aesthetic representation, ethical considerations and cultural discourses.

valuable daguerreotypes, or by inscriptions of various kinds, which also gave the stereograph a narrative connotation.[124]

The subject matter of pornographic stereographs consisted mainly of the further development of the artistic nude. From an aesthetic point of view, the blurred boundary between art, eroticism and pornography is certainly a complex conceptual knot. It is determined by a series of variables (socio-geographical, political, cultural, legal and historical) that must always be precisely located to understand its theoretical agency.[125] It is highly mutable, but for the period under consideration, it is from the products considered legally and culturally obscene that we extract some of the characteristics that define its categorical boundaries. We have seen how the actions of the various censorship bodies unwittingly produced a precise catalogue of obscenity. The process of classification, typical of the ontological vagueness of the pornographic, was at once obvious and elusive. The various sanctions, as well as the judgments of persecutors in the second half of the nineteenth century, leave ample room for interpretation. If we go back to the aforementioned Lord Campbell's Act of 1857, we will find that it was not intrinsic characteristics that defined the material in question but rather an alleged moral agency "to deprave and corrupt those whose minds are open to such immoral influences." This characteristic of early pornography is a commonplace that will recur in contemporary conceptions of pornography, always delimited by a particularly elusive ontological framework.[126]

The definition of the corrupt morality of such material is thus clearly a reference to nudity. Pornography's complex and ambiguous relationship with nudity is dictated by the artistic environment in which iconography has always conceived the naked body as a trope. However, a central aspect of pornography as an independent genre is the representation of nudity without a system of postures, styles and iconographic connotations to justify its presence. In this sense, one could referes to the classic artistic-social diatribe that contemporary European painting was experiencing, as in the case of the widespread debate provoked by works such as *Le Déjeuner sur l'herbe* (1863) and *Olympia* (1863).

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[124] See Davis (2004), who focuses on the implicit narrativity of American stereography.

[125] See Hans Maes and Jerrold Levinson, *Art and Pornography: Philosophical Essays* (Oxford: Oxford University Press, 2012).

[126] Exemplary in this regard is the famous sentence uttered by Supreme Court Justice Potter Stewart in 1964: "I don't know what [pornography] is, but I know it when I see it" in Pietro Adamo, *Hard Core: Istruzioni per l'uso* (Milan: Mimesis, 2021), 23.

The construction of Manet's painting was notoriously scandalous, not only in its technical and perspectival architecture but also in the choice of a subject which, lacking associations with a historical, mythological or geographical "beyond," lost its moral and representational justification. This aspect is also underlined by the typical interpellation of the bather to her observer. The moral shock of Manet's painting – blunted by various commentaries of the time[127] – stemmed from precisely the same social threat perceived by pornographic stereography. In the case of the latter, it was exacerbated by the degree of representational fidelity that the photograph allowed in comparison to the mimetic translation of the painting. The introduction of a seemingly indexical adherence of stereography in those very decades led to the short-circuiting of the representational process of pornography. Through its explicit content and its technical reproduction, pornography proposes the production of a *part of reality*. However, this part is all the more effective when it is staged, composed and performed. This equation is at the heart of the aesthetic and, more broadly, the philosophical relevance of the pornographic genre to the present day. However, it was in these decades that the pornographic gained such social agency, thanks to the seemingly hyper-mimetic contributions of stereography, as to provoke strong institutional reactions. The oxymoron between representation and authenticity, between reproduced and "real," was further undermined by the technical requirements of stereographic image production at the time. Erotic and pornographic stereography therefore involved a careful framing that gave its subjects a static air and awkward postures to the contemporary eye.

We will now examine some of the characteristics and compositional techniques that defined the language of stereoscopic pornography and that established a series of particularly long-lived image-making commonplaces. These "places," which introduce an architectural interpretive key to the object of analysis, refer to the spatial composition of the erotic atmosphere, the props used and the various techniques of interpellation suggested by the reproduced subjects. In fact, stereoscopic pornography produced a double fetishistic graft composed of the erotic nature of the content on the one hand and the emphasis placed on the soma-architectural construction of the composition on the

[127] See Alan Krell, "Manet's *Déjeuner sur l'herbe* in the Salon des Refusés: A Re-Appraisal," *The Art Bulletin* 65, no. 2 (June 1983): 316-20, https://doi.org/10.1080/00043079.1983.10788075.

other. One might add the eroticism inherent in both the physical contact with the machine and the perceptual effort required by the stereoscopic illusion.

Pornographic stereography defined an architecture of desire characterised by the complex interrelationship between bodies, perspective planes and reflective surfaces. If we look at famous collections of erotic-pornographic stereographs, such as those gathered and selected by Serge Nazarieff (1987),[128] we can observe a series of commonplaces that characterise the regimes of three-dimensional representation of the sexual body at the time.

We decided to begin the analysis of such compositional techniques with this stereograph from 1860 (fig. 34). Attributed with some doubt to Jacques Moulin, it is a stereographic strip printed on paper depicting a sexual act between two members of the clergy, a priest and a nun. What compositional, aesthetic and cultural information can be gleaned from this work?

Figure 34. Stereoscopic image on paper, possibly by Moulin (around 1860). Coloured albumen paper. Imitation, in pornographic mode of T. R. Williams' genre scenes (Coll. private, Paris). In Nazarief (1987, 106).

[128] Nazarieff collected stereographs from various private collectors (Georges Aboucaya, Jackie Chery, Jean-Pierre Bourgeron, Giorgio Ginestra, Alain Kahn-Sriber, Jean-Pierre Lagarrigue, Gérard Lévy, Raymond Mary, Brian May, Gérard de Reinach-Cessacc, Stephan Richter, Jonathan Steel and Roger Thérond) and institutions (The Bibliothèque Nationale de Paris, the Agfa-Gevaert Museum of Leverkusen, the Museum of Photography of Chalon-sur-Saône and the Victoria and Albert Museum of London).

First is the skilful architectural construction of the scene. To achieve the most effective three-dimensional effect, stereographs (pornographic and otherwise) emphasised the planar succession of perspective planes. In this case, the architecture of the loggia, built with pointed arches and supported by two polystyle columns, poses several compositional issues. As anticipated, the element contributes to the effect of three-dimensionality which, once the illusion has been activated by the device, would accentuate the architectural construction of the scene. At the same time, it acts as a kind of para-frame for the environmental image. This stereograph operates on several levels, from the iconographic to the technical-compositional. The choice of an arched loggia is a clear reference, albeit in a parodic-pornographic key, to the typical frames of medieval and Renaissance polyptychs. The frame unifies and accentuates the illusion of perspective. For example, in the altarpiece of San Zeno (Fig. 35) (1456-1459) by Mantegna, as well as in the later polyptych of San Martino (1485-1505) by Butinone and Zenale, the frame functions as a

Figure 35. Andrea Mantegna, San Zeno Altarpiece*, 1456-1459, Basilica of San Zeno, Verona.*

strongly connotative device. In these cases, the frame is not only the ornamental extension of the ontological perimeter of the pictorial representation but also becomes the support and confirmation of the perspective illusion.[129]

[129] Compare the now classic analysis of the frame device in Simmel. The comparison is clearly oppositional; the vaguely reactionary nature of Simmel's perspective comes into friction with systems that, like those described, determine a porous and liminal space of representation. Cf. Georg Simmel, 1902, "The Picture Frame: An Aesthetic Study," *Theory, Culture and Society* 11, no. 1 (1994): 11–17, https://doi.org/10.1177/026327694011001003.

In the case of Mantegna and Butinone and Zenale, the frame emphasises the unity of the environmental construction of the image, becoming the external membrane of the architectural representation. As the "skin" of the representation, it protrudes beyond the perimeter of the image while closing it off and legitimising its spatial construction. In the case of the stereograph in question, the role of the architectural frame appears to be quite similar; it *reassures* its viewer and increases their physiological pleasure dictated by the augmented perspective illusion. We chose to begin this iconographic analysis with this particular product precisely because of its hybrid nature. Indeed, it is a typical example of the transition between erotic parody and pornography as an independent genre. As we observed with Hunt, one of the characteristics of modern, pre-photographic pornography was precisely that in its representational process, it functioned as a parodic declination of classical iconographies of an institutional nature (political or religious). The clearly obscene value of this product lies in the resemblance of the site of the sexually profane to the sacred. This relation, which is actually quite typical of the humour and parody of the time, could therefore be understood, paradoxically, as a kind of attenuated obscenity. Although the association between pornography and the clergy may seem particularly licentious to the contemporary eye, the cultural gaze of the time concealed a representational framework that mitigated its disturbing charge. As the pornographic paintings of famous artists of the same period show, the theme, location and representation of a sexual scene in a historical, mythical or parodistic "elsewhere" would have established a distance that would have defused its actual obscenity. In fact, clerical pornographic iconography was not unique in nineteenth-century visual culture. As can be seen, for example, in the painting *The Sin* (1880) by Heinrich Lossow (Fig. 36), the sexualisation of church representatives as a form of criticism of the institution was certainly not new. The iconography, often associated with the mythical Banquet of

Figure 36. Heinrich Lossow, The Sin*, 1880*

Chestnuts,[130] thus portrayed sexual action in a narrative frame far removed from the photo-stereographic *hic et nunc.* The 1860s stereograph examined here thus represents an important stage in the configuration of the modern pornographic. This process led from the erotic, cloaked in a narrative or mythographic elsewhere, to the intrusion of a supposed photo-stereographic truth of technically reproduced sex. Here, then, this pseudo-loggia or cimasa becomes a filter that frames the space of fictional representation, further codified by costumes and historical-parodistic references. The attenuated obscenity of stereographs such as the one under consideration is also reinforced by another reference. Nazarieff (1989, 160), in his description of the stereographic strip, proposes an interpretive key for reading the image – and others in the same series – as pornographic declinations of the classical views and still lifes of Thomas Richard Williams, a well-known British photographer of the time, famous for the first stereographic daguerreotypes of the Crystal Palace at the Great Exhibition in London in 1851.[131]

[130] The Banquet of Chestnuts, also known as the Ballet of Chestnuts, Festival of Chestnuts or Joust of Whores, was allegedly hosted by former Cardinal Cesare Borgia, son of Pope Alexander VI, at the Papal Palace in Rome on 31 October 1501. Legend describes the event as exuding an unmistakably orgiastic atmosphere. See Jennifer Mara DeSilva, *The Borgia Family* (Abingdon: Routledge, 2019).

[131] See Brian May and Elena Vidal, *Williams, Thomas Richard (1824–1871), Photographer* (Oxford University Press, 2006).

The setting of this kind of "elsewhere" obscenity thus seems to belong to the broad tradition of political pornography. What happens when, as in Manet's work, erotic nudity and pornographic action are presented on stage without being located in an elsewhere by means of filters, frames or settings?

The main themes of stereographic obscenity can easily be attributed to two types of images: the female nude (in numerous variables) and the more strictly sexual action. The presence of male nudity is almost always incidental; in most cases, it is used as a functional element in sexual scenes of varying types. However, the presence of hardcore sexual scenes is limited in its frequency, probably due to the technical difficulties related to the timing of the impression of the photo-stereographic image on its support. This aspect is very relevant in understanding the techniques of a genre. The pornographic, as we have said, often tries to produce medially effective and cheap objects. In both cases, the stereographic pornographers used a series of compositional strategies that set up a number of commonplaces of early environmental pornography.

Once again, one of the main stylistic features found in these images is the spatial and architectural construction of the stereographic environment. A recurring device in stereopornography is the mirror. As we can see from this group of images (Figs. 37-40), mirrored surfaces played a very precise role in stereographic pornography. On the one hand, they multiplied the planes of perspective without the need for complex architecture and scenery, thus economically increasing the pleasure derived from the three-dimensional illusion. On the other hand, the mirror and its reflections multiplied erotic bodies. By carefully arranging the reflective surfaces, the pornographer was able to integrate several perspectives of the same sexual act or body in a single shot. This process, as we shall see, is typical of the fragmentation of bodies in pornography to the present day. It is interesting to note that in the stereographs in question, the mirror becomes a further inscribing surface of the image, supporting the process of virtualisation already proposed by photo-stereography and the pornographic genre. The reflections in these environmental images allow a viewer to haptically grasp the different perspectives of the erotic body. Di Marino (2013) notes the overtly *cubist* nature of audiovisual pornography in relation to the contemporary hardcore. We will return to the idea of the pornographic as a genre of bodily deconstruction later, but we note here how the environmentalisation of the stereographic image allowed for the imprinting of this commonplace through

scenographic trickery. The mirror is a kind of stereoporn feature that introduces us to the modes and representational regimes that the observer's stereoscopic gaze activates in relation to their objects of vision. The mirror in photography has been studied extensively (Poe 1839; Holmes 1859; Baudelaire 1859; Tayane 1865; Bazin 1945), but here it is analysed as part of the techniques of the pornographic that emphasise the media identity with which they interface. With regard to surface reflectivity, it should also be noted that stereographic strip supports played an essential role. The metallic and glittering nature of the daguerreotype, for example, certainly encouraged the inclusion of luminous objects such as mirrors.

Figure 37 Stereoscopic Daguerreotype, Auguste Belloc, c. 1854, in Nazarieff (1987, 20).

Figure 38. Stereoscopic daguerreotype, F. Jacques Moulin, c. 1854, in Nazarieff (1987, 48).

Figure 39. Stereoscopic daguerreotype, Louis-Camille d'Olivier, c. 1855, in Nazarieff (1987, 51).

Figure 40. Stereoscopic daguerreotype, Au nom de A. Richebourg, c. 1854, in Nazarieff (1987, 52)

Moreover, the techniques used by pornographers to make the most of this philosophical toy included precise instructions for the subjectivities inhabiting these environmental images. In fact, the proposed body figures and the constant references to processes of interpellation underpin the parasocial construction that is activated in the stereopornographic image and that, as we shall see, seems to be one of the main theoretical features associated with the definition of this first form of immersive pornography.

3.4 Immersed in the Genital: Medical and Erotic Gaze in the Stereographic Beaver Shot

In the recurring iconographies of stereoscopic eroticism, representations of the whole body rather than its fragments seem to prevail. As we have seen, the mirror promotes a somatic deconstruction but, in most cases, does not translate into the analytical and paramedical gaze that characterises erotic chronophotography and early pornographic cinema. It should be noted that close-ups of female genitalia also recur in stereographic pornography. The so-called beaver shot[132] is central to several pornographic representations of the period and will be fundamental to the definition of early pornographic film (Williams 1989). As we can see from this other group of pornographic strips (figs. 41-43), the presence of genitals without identity is also found in the

[132] Williams (1989) describes the evolution of the beaver shot and beaver film in the cinematic sphere: "But before hard-core stag-film elements were incorporated into feature-length exploitation films in the early 1970s, a second stage in the formation of the new genre was reached, exemplified by the so-called beaver film. A subgenre of the illegal stag, these very short loops showing women stripping to display their naked pubis were shown in peep-show arcades and sold through private mail order. [...] The next step towards hard core was to show "split beaver" films – variations of the above adding the spreading of legs or labia to facilitate a better view – followed by the 'action beaver,' with 'action' restricted to the woman herself or another woman fondling the genital area and sometimes simulating cunnilingus" (Williams 1989, 96–97).

stereographic field. The three-dimensional beaver shot thus offers a series of reflections on the technical and aesthetic compositions of these twisted, faceless bodies.

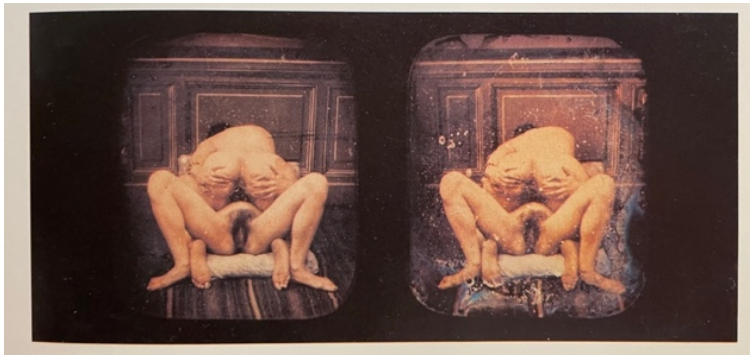

Figure 41. Stereoscopic daguerreotype, F. Jacques Moulin (?), 1851, in Nazarieff (1987, 47).

Figure 42. Stereoscopic Image on paper, F. Jacques Moulin (?), c. 1854, in Nazarieff (1987, 96).

Figure 43. Stereoscopic image on paper, Anonyme, 1860-1865, in Nazarieff (1987, 110).

Solomon-Godeau (1989) links the agency of this iconography to the classical reifying processes of a supposedly male gaze. In a critical feminist key, the author recognises in this photographic stance the predatory nature of the mechanical male eye:

> Photography can be credited with the invention of the beaver shot, an image so constructed that its sole purpose is the exposure of the female genitalia. Within this genre neither a surrogate for the male viewer nor a simulation of the woman's pleasure – indeed very little of the woman at all – is necessary for the image to do its work. In fact, one of the suggestive tropes of this kind of representation is the

> disappearance of the woman's face, covered by her thrown-back petticoats or shrouded in veils. (Solomon-Godeu 1989, 97)

This perspective is therefore easily applied to the stereographs analysed here, in which the faces of the models are obscured by various techniques and postures, with the intention being to draw attention to the exposed genitalia. This practice of making the identity invisible and dismantling the female body is largely consistent with a patriarchal outlook but should be further specified. Indeed, without wishing to diminish or refute analytical perspectives such as Solomon-Godeu's, it should be remembered that the anonymity of the performers was also a form of social protection. Pellerin (2000), in his aforementioned essay on the BB3 file, reports on the numerous convictions of pornographic models at the time:

> Their names [of the pornographic models] appear alongside those of colourists (mainly women), travelling salesmen, people arrested for peddling obscene images in public and, naturally enough, about 100 female models and twenty male models. Although the women reoffended fairly frequently, this was not true of the men, who only modelled occasionally. It should also be noted that the latter were punished more harshly by the law. While the average sentence for women was 51 days in prison (min. 8, max. 365) with a fine of 41 francs (min. 16, max. 100),7 the average sentence for men was 168 days (min. 30, max. 365) and a fine of 110 francs (min. 16, max. 500). (Pellerin 2000, 91)

It is interesting to note the legislative disparity in pecuniary and imprisonment penalties between male and female subjects. In this regard, the typical conception that female subjects are more susceptible to "moral poisons," such as those of pornography and sex work, seemed to prevail. Therefore, the punishments reserved for them followed an attenuation in accordance with this cultural assumption.

However, if we place the perspective of analysis in the female subjects represented, the beaver shot constituted a form of sex work that maintained social, moral and legal protections precisely because of the anonymity that these representations afforded. It is imperative to contextualise this anonymity within the broader paradigm of intersectionality, which includes considerations of race, gender and social status. In

colonial contexts, non-white nudity, when juxtaposed against the backdrop of entrenched colonial culture, often carried connotations of primitiveness and inferiority, perpetuating notions of savagery and subhumanity. This association highlights the complex relationship between optical technologies, scientific-anthropological agendas and colonial eroticism, where visual representations intersected with colonial power dynamics to reinforce hegemonic narratives of racial and sexual superiority. Examining the beaver shot within this framework thus highlights the multifaceted nature of colonial discourse and its implications for gender, race and sexuality.[133]

The stereographic beaver shot, although rare in the collections analysed here and in the period under consideration, raises further theoretical questions. What does it mean, aesthetically and culturally, to immerse oneself in a genital?

In this regard, Baudrillard (1990) examines an erotic immersion device, such as the *Japanese vaginal cyclorama*,[134] to question this form of pornographic obscenity:

> Prostitutes, their thighs open, sitting on the edge of a platform, Japanese workers in their shirt-sleeves (it is a popular spectacle), permitted to shove their noses up to their eyeballs within the woman's vagina [*sic*] in order to see, to see better – but what? They clamber over each other in order to gain access, and all the while the prostitutes speak to them gently, or rebuke them sharply for the sake of form. (Baudrillard 1990, 31)

The theatrical setting of this erotic structure promotes an absolute type of obscenity, which, Baudrillard argues, has less to do with a predatory mania than with being caught up in the genital image:

> The rest of the spectacle, the flagellations, the reciprocal masturbation and traditional strip-tease, pales before this moment of absolute obscenity, this moment

[133] See Philippa Levine, "Naked Truths: Bodies, Knowledge, and the Erotics of Colonial Power," *Journal of British Studies* 52, no. 1 (January 2013): 5-25, https://doi.org/10.1017/jbr.2012.6; Philippa Levine, "States of Undress: Nakedness and the Colonial Imagination," *Victorian Studies* 50, no. 2 (January 2008): 189–219; Darby Lewes, "Nudes from Nowhere: Pornography, Empire, and Utopia," *Utopian Studies* 4, no. 2 (1993): 66–73, https://www.jstor.org/stable/20719961.

[134] Baudrillard does not specify the reference to this machinery of vaginal exposure. Despite the lack of further confirmation of its actual existence, it remains interesting to note the connection between a technology of optical and environmental illusion such as the cyclorama and the pornographic exposure of the female genital, also "environmentalised" in a form of erotic immersion.

> of visual voracity that goes far beyond sexual possession. A sublime pornography: if they could do it, these guys would be swallowed up whole within the prostitute. An exaltation with death? Perhaps, but at the same time they are comparing and commenting on the respective vaginas in mortal seriousness, without ever smiling or breaking out in laughter, and without ever trying to touch – except when playing by the rules. No lewdness, but an extremely serious, infantile act borne of an undivided fascination with the mirror of the female organ, like Narcissus' fascination with his own image. (Baudrillard 1990, 31)

Therefore, the environment of the stereographic beaver shot has little of the obscene or pornographic in the usual sense. It goes beyond the regimes of simple sexual arousal because it excludes the subjectification of the reproduced identity from the equation. It is, from the perspective of feminist phenomenology, a slave without desire, as Butler (1989) would argue.[135] However, the reification of this organ without a body, according to Baudrillard, goes far beyond male possession and exemplifies a desire to be enveloped and become one with the desired organ. The experience described by Baudrillard also focuses on another characteristic of the beaver shot: its male observers comment on and analyse the dislocated organs in front of them with "mortal seriousness" – with an attitude that is, one might say, medical. The relationship between the beaver shot and the regimes of the medical gaze is indeed central to theories on the origins of cinematographic porn, but it also finds application in three-dimensional photography. Baudrillard's desire for genital immersion, imbued with a Freudian death drive, reaches the obscene, the invisible par excellence, with the entrails of the human body confirming the theoretical proximity of the pornographic to the horrific:

> Beyond the conventional idealism of the strip-tease (perhaps there might even be some seduction here), pornography at its most sublime reverses itself into a purified obscenity, an obscenity that is purer, deeper, more visceral. But why stop with nudity, or the genitalia? If the obscene is a matter of representation and not of sex, it must explore the very interior of the body and the viscera. Who knows what profound pleasure is to be found in the visual dismemberment of mucous

[135] See the analysis of situated phenomenology in the first chapter (1.5).

> membranes and smooth muscles? Our pornography still retains a restricted definition. (Baudrillard 1990, 31–32)

The theoretical value of this passage lies in its highlighting a conceptual gap: that between the practice of striptease, in its performative and paratheatrical declination, and a form of "purified obscenity." What appears to be a process of purification, according to Baudrillard, seems to be precisely the de-subjectification of the pornographic body. The beaver shot and the vaginal cyclorama are in fact forms of obscenity that involve a more or less literal dissection of the visible body. Baudrillard stresses the gastroscopic qualities of the pornographic obscenity of the beaver shot, which holds in tension the dual nature of the objectifying gaze par excellence and a deeper, almost voracious desire to be incorporated into the genital image.

Baudrillard's perspective, while offering some essential insights, nevertheless betrays an overtly masculine perspective that tends to totalise, through hyperbolic forms, a vision of immersion in the genital that is complex and multi-layered. We will see in the next section that the agency of the solid stereographic image transcends the "deadly seriousness" of the medical scopic regime, suggesting a different kind of contract with the image. Here, however, it seems necessary to point out that the regimes of the pornographic, since its stereoscopic forms in the nineteenth century, have imposed a more nuanced view of the processes of contact with technically reproduced bodies. Indeed, Baudrillard's focus on the vagina and his interpretation of this gastroscopic movement introduce a problematic – and Freudian – abstraction towards a female subject presented in an image for the sole purpose of being penetrated. The decomposition of the body into its parts is indeed typical of the pornographic in the broadest sense, and the de-subjectification that this process implies is certainly not so obvious. If Baudrillard uses the pornographic as an example of the erosion of the principle of reality, this does not automatically define the only possible interpretive perspective, regardless of how much it resonates with what has been said above with regard to Holmes' rhetoric. Rather, the genital shot system participates in a more radical emphasis on the somatechnical nature of desire, of which optical technologies can be seen as prosthetic extensions. As we have grasped in relation to the invention of masturbation (see Chapter 1.2), the photo-stereographic beaver shot also defines a further part of this ambiguity of the seductive agency of the technically

reproduced image. This reflects a type of erotic intercourse that does not necessarily follow the equation of the concrete intersubjective relationship, which, as in the case of the beaver shot, gives rise to a complex stratification of scopic movements, incorporation and genital stimulation not so easily gendered in the female (quasi-)subjectivities.[136]
As anticipated, however, genital immersion is a relatively rare iconography in the period analysed. The low frequency of these images in the sample studied is probably also due to the less ambiguous nature of this representation, which made it easier for the censors to condemn. However, what happens if, in the erotic architecture produced by stereopornography, the pornographer's intention, conscious or not, was to suggest a cohabitation of virtualised space between observer and a subject/object of representation?

3.5 The Image-People of Stereopornography and the Erotic Parasocial Contract

What appears relevant about the specificity of the stereopornographic image, which will return as a commonplace in contemporary VR, is that its three-dimensionality and architectural structure seem to emphasise the *parasocial*[137] and quasi-intersubjective nature (Pinotti and Somaini 2016, 112) of the pornographic *contract*[138] at play. The

[136] Moreover, in the very years in which Baudrillard was writing, certain experiences, such as that of Annie Sprinkle, were attempting to redefine the canon of the pornographic and its political agency beyond the parodistic. Performances that have become cult, such as *Public Cervix Announcement*, describe precisely the will to re-discuss the social and scopic agency of female and penetrated subjectivity, in favour of its complete self-determination, also via pornographic performance. Cf: Linda Williams, "A Provoking Agent: The Pornography and Performance Art of Annie Sprinkle," *Social Text*, no. 37 (1993): 117, https://doi.org/10.2307/466263; Patrick Campbell, *The Body in Performance* (London: Routledge, 2014), in particular the chapter "Censoring the Body: Whores, Goddesses and Annie Sprinkle."
[137] The parasocial relationship describes the illusion of intimacy and affective interaction with technically reproduced subjects. The term, used in psychology and sociology studies, is employed in the description of the relationship between the public and celebrities, as in the case of film or web stars. Parasociality thus describes the illusion of relational closeness that, precisely through media forms, is activated with members of an audience. On the functioning and agency of the term, see Donald Horton and Richard Wohl, "Mass Communication and Para-Social Interaction: Observations on Intimacy at a Distance," *Psychiatry* 19, no. 3 (August 1956), 215-29, https://doi.org/10.1080/00332747.1956.11023049; Siyoung Chung and Hichang Cho, "Fostering Parasocial Relationships with Celebrities on Social Media: Implications for Celebrity Endorsement," *Psychology and Marketing* 34, no. 4 (March 9, 2017), 481–95; Rebecca B. Rubin and Michael P. McHugh, "Development of Parasocial Interaction Relationships," *Journal of Broadcasting and Electronic Media* 31, no. 3 (June 1987), 279-92, https://doi.org/10.1080/08838158709386664; Edward Schiappa, Peter B. Gregg, and Dean E. Hewes, "The Parasocial Contact Hypothesis," *Communication Monographs* 72, no. 1 (March 2005), 92-115, https://doi.org/10.1080/0363775052000342544.
[138] The concept of the *spectatorial contract* is in this case referable to the extensive treatment proposed by Casetti (1997 and 1998); what is interesting from Casetti's observations is the intention to construct, around the movements of perception of the image, a bi-univocal and processual relationship, renewed from time to time in contact with a certain type of mediated experience. There is thus a real communicative pact in

semantics of the contract requires us to specify which parties are involved in this stipulation. In line with Casetti (1998, 136), the contractualist discourse envisages "the biunique relation between the two poles of the enunciation," but where the dynamics of meaning definition are co-determined by the two parties involved. The contractualist dynamic thus introduces the broader theme of the agency and operativity of the image over the world and its observer. This model thus intends to highlight the intention to establish a communicative relationship with photographically reproduced entities. The peculiarity of the stereopornographic contract, as we shall see, has to do with the specific *solidity* of the anthropomorphic entities determined by the optical illusion.

The parasocial scheme, which by definition implies a relationship with a technical subject, seems to be part of the aesthetic and compositional strategies that characterised early stereopornography. The techniques of this virtual cohabitation certainly include the processes of *interpellation.*[139] The gaze of the subject of representation turned directly towards the viewer is clearly not a novelty of photo-stereography. The Italian Renaissance and its portraiture widely depicted figures whose gazes directly recalled *external unity* (Riegl 1902), the "beyond" of the representation and the world of the observer. The pose known as "of interrupted activity" (Severi 2018, 325) represents the emergence of a postural topos that defines an inspiration for the stereopornographic nude. The vast pictorial productions, from Lotto to Pontormo and Giorgione, that have produced figures caught in an activity interrupted, as if called to attention by the space of the observer, are particularly close to the images of stereopornography. The direction of the gaze towards the viewer and the progressive erosion of the iconic film separating the concrete world emphasise the complex ontology of the stereographic image. Through interpellation, the image invites and directs the gaze and emotions of the viewer, as in the case of the Albertian *advocator* (Marin 2001). Or, in another sense, it conveys a violent and authoritarian agency, as Foucault notes with regard to Velázquez's self-portrait.[140]

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place, understood "as that tendential or broad agreement made by the participants in a communication around the relevant aspects of the communication itself" (Casetti 1997, 22).

[139] Casetti (1998) defines the term as "The recognition by the film of someone outside the text to whom the film makes a direct appeal, "hailing" this "you" in the form of an aside; the enunciator, in the form of a narrator, a voice-over, titles, or the like, that directly addresses the spectator. Addressing an offscreen space that can never be made visible, interpellation can be considered a gaze without effect" (138).

[140] Foucault's reflection focuses on the prescriptive role of the interpellating gaze: "From the eyes of the painter to what he is observing there runs a compelling line that we, the onlookers, have no power of evading: it runs through the real picture and emerges from its surface to join the place from which we see the painter observing us; this dotted line reaches out to us ineluctably, and links us to the representation of

Seduction and authority as movements of the interpellating image can only lead us to the necessary inclusion of the meaning of the term in the ideological sense. Althusser's (1970)[141] classic reflection on the capacity of ideology to interpellate – in the sense of proposing and imposing – a given subjectivity on an individual through a system of apparatuses [*appareils*], including optical devices such as those analysed here, is part of the very understanding of the agency of the image. The focus on the explicit (gendered) ideology of the apparatuses considered will be dealt with in the following sections (3.5, 3.6), but it is essential to take this conceptual declination into consideration to fully understand the relevance of these scopic movements.

Returning to the more strictly aesthetic issue, the technique of interpellation persists in its iconographic recurrence. In the same decades, works such as Manet's proposed erotic hailings with a high aesthetic agency. *Olympia* (1863) and *Le Déjeuner sur l'herbe* (1862-1863) defined their cultural power in France precisely in this crisis between interpellation and the pornographic body. It is not difficult to imagine that it was the circulation of photo-stereopornographic material that influenced the codification of this iconography. At the same time, these bodily figures and techniques brought into painting and the "sacred space" of the salon a scandalous association with precisely this licentious material (Needman 1972; Weingarden 2011). This scopic approach – as Solomon-Godeau states

> depart so emphatically from traditional modes of pornography. Inasmuch as it is a real woman so deployed, a real woman who receives and returns the look, pornographic photography detaches itself from an image-world of fantasy and comes to occupy an ambiguous realm between the real and the imagined. (Solomon-Godeau 1989, 98–99)

the picture" (1966, 4-5), and "As soon as they place the spectator in the field of their gaze, the painter's eyes seize hold of him, force him to enter the picture, assign him a place at once privileged and inescapable, levy their luminous and visible tribute from him, and project it upon the inaccessible surface of the canvas within the picture. He sees his invisibility made visible to the painter and transposed into an image forever invisible to himself" (1966, 5–6). Cf. Andrea Pinotti, *Alla Soglia Dell'immagine: Da Narciso Alla Realtà Virtuale* (Torino: Einaudi Editore, 2021), 121-43.

[141] On the Althusserian issue and the educational processes of ideological interpellation see, in addition to the author's texts, Tyson E. Lewis, "A Marxist Education of the Encounter: Althusser, Interpellation, and the Seminar," *Rethinking Marxism* 29, no. 2 (April 3, 2017): 303–17, https://doi.org/10.1080/08935696.2017.1358498; Mladen Dolar, "Beyond Interpellation," *Qui Parle* 6, no. 2 (1993): 75-96.

The ontological crisis that the photo-stereographic pornographic image brings with it is thus accentuated by interpellation techniques. This system, in the semiotic architecture of the three-dimensional image and the immersion that the stereoscope allowed, introduces a further point of definition to early stereopornography. This blurring between "the real and the imagined," already characteristic of the pornographic, finds in the dive into the environmental image an unprecedented perceptual agency. The subjects of this gaze participate in the unframing of the image through the performative act of breaking through the surface of the pictorial object. However, if in the case of a framed and/or two-dimensional image this breakthrough respected the ontological boundaries of the image, the environmentalisation of stereopornography seemed to increase the seductive power of the interpellating gaze. Given that stereoscopic devices, in their wearability, (more or less effectively) excluded the viewer's body from sight, the seductive demand that stereoscopic interpellation promoted defined a process of embodiment in such a way that the experience of these images could be considered a form of parasocial *cohabitation*. Unlike the photo-cinematographic beaver shot, the stereopornographic nude is not grafted onto the analytical and paramedical fetishism of body fragmentation (understood both as a dissection of movement and as a reduction of the subject to the erogenous organ) but rather onto the possibility of entering into a direct, intersubjective and *haptic* relationship with technically reproduced entities. As already mentioned (cf. 1.1), the haptic quality of the stereo-entities, largely participates in the pornographic contract in question, in an erotic path of perception emphasised by both the postural inclination and the interpellative processes at work.

These solid entities, the protagonists of stereopornography, have indeed specific *sculptural* qualities. The relationship between stereography and sculpture is one of the forms of discursive commonplace typical of the promotion of the device. Holmes himself coined the term "sun-sculpture" to describe stereographic technology. What we propose here, then, is that the subjects reproduced by stereopornography can be understood and analysed as particular artefacts – as *object-persons* (Heinich 1996; Severi 2018). The concept of the object-person, and more generally of the image as an autonomous entity, has been the subject of extensive reflection in various fields of investigation. In the

phenomenological context, Dufrenne (1973)[142] proposes to consider the aesthetic object as a quasi-subject, in light of the agency infused by the perceiving subject. In stereopornography, the definition of an intersubjective relationship with images seems to benefit from an anthropological and culturological approach, as we shall see, in light of the technical characteristics of these images and the scopic contract they require.

Severi uses the term object-person to describe those artefacts to which a given culture attributes an agency typical of sentient subjectivities. Following Gell's (1998) anthropology of art, although distancing himself from it,[143] Severi proposes the analysis of various cases in which certain more or less anthropomorphic objects acquire human characteristics, from speech to movement. In the (iconographic) play of a historical and cultural environment, such objects (e.g. the statues of the deceased in sixth-century BC Greece) acquire a semblance of life [*parvenza di vita*] through both a set of interpellative techniques (the first-person epitaph in the case of funerary statuary) and a pattern of ritual attitudes that participate in the creation of an anthropological "universe" in which such delegation of agency is deemed legitimate. Among the techniques described by Severi is that of direct interpellation by the gaze, typical, as anticipated, of Renaissance painting and portraiture. These techniques thus promote a progressive transgression of the indexical perimeter between the represented and the representative, in a process that favours "the emergence of transitional spaces that turn painting into a means of indicating a place where the presence of the viewer is gradually integrated into the representation"

[142]Dufrenne's (1979) analysis focuses on the processes that the subject of phenomenology puts in place in conferring quasi-subjective vitality on the aesthetic object: 'Finally, analysis shows that the aesthetic object is for-itself. Its power of expression confers upon it a quasi subjectivity…by means of adherent reflection, I submit myself to the work instead of submitting it to my jurisdiction, and I allow the work to deposit its meaning within me. I consider the object no longer as a thing which must be known through its appearance-as in critical reflection, where appearance has no value and signifies nothing on its own-but, rather, as a thing which signifies spontaneously and directly, even if I am unable to encompass its meaning: as a *quasi subject*…but the temporality of this object is revealed in our own ongoing duration. For, once again, the aesthetic object is a quasi subject only for the authentic subject, that is, for the perceiving spectator' (329).

[143] In particular, Severi distances himself from the 'symmetry' of Gell's thinking with regard to the definition of indexes and receptors. This distancing of Severi's approach seems particularly interesting here precisely because it mitigates the apparent control over the behaviour attributed to the object-person fetish. Echoing the ritual of the *minkisi* already treated by Gell, Severi highlights the possibility that the animated fetish may escape the control of its agent: 'We must note, however, that even in this case the behaviour of the object is not directly predictable: its intentionality remains, in principle, independent of that of the one seeking revenge. Although it is difficult to imagine that the fetishist's action could contradict his intention to take revenge or obtain justice, he never exercises direct control over the behaviour attributed to the object. What needs to be explained, then, is not the series of precedents that lead to the creation of the object but rather the character of apparent autonomy that it seems to acquire in the ritual context' (Severi 2018, 114, my translation).

(Severi 2018, 353, my translation). The interpellating figures depicted in art serve as a means of creating a unique space in which the artwork and the viewer coexist and acquire equal significance. This allows the painted figures to indirectly take on a lifelike quality similar to the viewer's own experience (Severi 2018, 354).

If the system of erotic cohabitation proposed by painting, as in the case of Manet, nevertheless maintains the material and symbolic limits of art and its frames, stereopornography proposes a new obscene revolution. It abolishes the frame, creating a hermetic space in which virtual cohabitation and interpellation are particularly effective, given their adherence to the field of vision, the ultimate physiological frame. The subjects of these gazes, inviting and seductive, become *quasi-subjects*, or even *object-persons*, because of their sculptural plasticity. The haptic plasticity of the stereopornographic figures thus recalls, on the one hand, the appearance of life in mimetic sculpture and, on the other hand, other theatrical experiences such as the tableaux vivant (cf. 4.1). However, these three-dimensional entities are not "mere" sculptures or posed bodies, given the process of virtualisation that they entail. We have seen with Holmes the possible rhetorical consequences of the stereophotographic medium, such as the possibility of teleportation and embodiment in an image. This series of processes is emphasised by the very nature of the stereoscopic illusion, which presents a virtual space resulting from a physiological process. The virtuality of this architecture and its inhabitants promotes the possibility of conceiving the somatechnical assemblage at the basis of the perceptual and erotic process. In fact, even in the context of stereopornography, this type of scopic movement has a precise functional logic based on the possibility of virtual cohabitation of the environmental image, underlined by the interpellative techniques described. The immersion in the apparatus, in the icon and in the virtual architecture, together with the apparent exclusion of the viewer's body, determines a hermetic erotic experience that finds its pornographic effect precisely in its proximity to the onanistic imagination (cf. 1.2). The specificity of the stereopornographic experience thus seems to lie in the complex interplay at the centre of the observer. The instability of the stereoscopic illusion, the conscious surrender to the optical trick and the seductive gaze of the interpellation can only be understood by conceiving of the observer, as Williams (1995) argues, "as an amalgam of disparate and decentred perceptions" (8).

Furthermore, precisely because of the erotic and gendered nature of the images analysed, it is necessary to point out that the terminological association with the *object*-person is not intended here to describe the processes of reification carried out by a hypothetical male gaze. It is clear, however, that the figures examined correspond in the social economy of the time to quasi-subjects not only because of the plastic qualities of their technically reproduced doubles but also, and above all, because of their identity in the social arena of reference.[144]

The object-person, in this case perhaps more correctly the image-person, introduces the possibility of conceiving the plastic figures of stereopornography as artefacts endowed with a particular erotic agency. What we want to stress here is that the stereographic origin of pornography introduced a particular relationship to the pornographic body, which in some of its characteristics differs profoundly from the one related to chronophotography and early cinematic experimentation. If we consider the subjects of stereopornography to be person-images, it could be argued that at the heart of this early form of environmental pornography is a chiasm of pleasures and desires derived from different conscious illusions. If, as we have seen in the critique of Crary, we consider the viewer of the time to be a subject in full control and awareness of the illusion at play in their consumption of stereographic erotic material, we can see that much of the pleasure (perceptual and sexual) derived from such media forms lies in the deception they produce. Just as Murray (2020) will argue for VR, a distant descendant of stereography, this perceptual performance determines "a medium of representation that the brain will process in its appropriate cultural context, just as it has learned to process speech, writing, photography, or moving images, without losing its grip on what is commonly accepted as reality" (14). If we delve into the historical context of the second half of the nineteenth century, we can understand the viewer of that time as someone who willingly embraced the captivating allure of the stereographic illusion and the seductive atmosphere it created. In line with Benjamin's theory of the ever-changing *historic* nature of perception, it is crucial to

[144] From an intersectional perspective, the subjectivities of stereopornographic models are part of a precise social perimeter, as we shall see, associated with the world "of the street." This context, considering the reputational economy of the nineteenth century, determined the quasi-subjectivity of such individuals, in the light of their gender, race and moral considerations; Susan Buck-Morss, "The Flaneur, the Sandwichman and the Whore: The Politics of Loitering," *New German Critique*, no. 39 (1986): 99-140, https://doi.org/10.2307/488122.

acknowledge that these viewers were aware of the implicit contract involved in perceiving stereopornography. The pleasure derived from such mediated experiences, both perceptual and erotic, was intricately intertwined with the oscillation between surrender to the illusion and awareness of its artifice. The solid objects-people of stereopornography can thus be seen as parasubjectivities because their plasticity and interpellative techniques allowed for an easy infusion of life. Bredekamp (2018) describes the triptych of the semblance of life in his diagram of the iconic act as the synthesis of the category "infusion of a soul" (265), the medium of sculpture and the form of the statue. We have seen how the pornographic bodies of stereography have many correlations with sculptural plasticity,[145] thus allowing us to consider the vitality of stereopornographic subjects as an essential part of the erotic efficacy of the medium. Bredekamp's perspective, radical in its infusion of agency to images,[146] is particularly consistent with the *intentions* and functioning of stereopornography. In his theory of the image act, taken up by linguistic theoretical systems such as those of John Searle (1969),[147] Bredekamp "locates the image not in the place formerly occupied by the spoken word, but in that formerly occupied by the speaker" (Rampley 2018).

This position, taking the perspective proposed in Mitchell's *What Do Pictures Want?* (2005), removes the "as if" from the image–person–agency equation and conceives of their functioning as actual entities capable of producing an effect on the world. The operation of the image and its action thus produces concrete "autonomously active entities" (Bredekamp 2018, 278) ready for a reciprocal relationship with their observer. Bredekamp's perspective, while critically successful, suffers from a certain theoretical vagueness, especially with regard to the concept of the image's agency itself, which has never been clarified with regard to the apparent perceptual resonance that these active entities would imply in their observer. Here, then, we engage in a consideration of Bredekamp's proposal, both in its radicality and limitations, as an essential theoretical

[145] On the sculpture-stereography relationship, see Patrizia Di Bello, "'Multiplying Statues by Machinery': Stereoscopic Photographs of Sculptures at the 1862 International Exhibition," *History of Photography* 37, no. 4 (November 2013), 412–20, https://doi.org/10.1080/03087298.2013.780750.

[146] 'Images do not derive from reality. They are, rather, a form of its condition. Images, through their own potency, empower those enlightened observers who fully recognise this quality. Images are not passive. They are begetters of every sort of experience and action relation to perception. This is the quintessence of the image act' (Bredekamp 2018, 283).

[147] Note the methodological congruity with the performative theories of gender, for example, in Butler, which from linguistic perspectives (Austin 1965) derive the functioning of a device (discursive and material), such as gender and sexual identity.

element for interpreting the forms of the pornographic contract with these environmental images. If the subjects/objects of stereopornography return this gaze,[148] we need to ask ourselves, as David Freedberg (1989) did, what articulations this scopic regime of the inorganic proposes. In this scopic architecture, as we have seen, the regime of artistic representation is certainly an essential counterpart. The appearance of erotic life in the image is even stronger when it comes into friction with the sacred enclosure of art and its products:

> The photograph – or the engraving – that shows blatant sexual engagement is likely to fail: it fails because there is none of the frisson, the tension, or the still stronger arousal that arises from a sense of the image being on the borderline of what is art (or what is tasteful, decorous, fashionable) and what is not art (or tasteful, decorous, fashionable, etc.). It is art, so it should not be arousing; it is publicly acceptable as art, and yet it transgresses- just-the limits of the admissible and the tolerable. This borderline position is what gives so many of these images their sexual potential. Once again the issue is one of demarcation. When the objects are too blatant, the demarcation between art and non-art becomes too clear; and the effects, though they may be interesting and curious, are not likely to be terribly stimulating or provocative. (Freedberg 1989, 355–356)

Although the pornographic regime is considered here to be an independent aesthetic category, Freedberg's reflection highlights a significant historical transition. As demonstrated by the clerical pornographic iconography, pornography participated in the broad system of practices, representations and iconographies that challenged and transgressed the boundaries of art. It is the *unbridled* image that, particularly in the latter half of the nineteenth century and due to the evolution in stereographic technique, seduced through its provocative nature the upper echelons of artistic imagery. As much as Freedberg's position on the ineffectiveness of the pornographic allows us to better account for the shifting boundaries of the artistic, it also seems to contain a dangerously normative perspective. Declassifying the explicit image as something "interesting and curious" risks not only reproducing a clear hierarchy of visual expression but also

[148] See also James Elkins, *The Object Stares Back: On the Nature of Seeing* (New York: Simon and Schuster, 1996).

defusing the highly subversive power of the pornographic, which, it has been said, has always been imbued with a precise political connotation. As this work has attempted to demonstrate, the pornographic, especially the stereoscopic one, introduces a form of agentivity to the image and its entities beyond friction with the "sacred enclosure of art." The operation of the spectatorial contract proposed here is thus intended to describe a movement of desire in the pornographic an-icon. The observer of stereopornography participates in the construction of somatic pleasure through a conscious infusion of agency into the technically reproduced erotic bodies. This pleasure is based on a double illusion: the physiological one, determined by the binocular trick of stereography, and the parasocial one, determined by the *semblance of life* of the solid images reproduced in the proto-virtual environment.

Chapter 4. The Gendered Observer

4.1 Who Is She? Situating the Observer

In addition to the characteristics and compositional techniques of stereopornography's immersive image, it is crucial to examine the gendered positioning that shapes the viewer's experience within their physical and cultural context. While Williams (1995) acknowledges this aspect, her analysis remains limited to a statement of intent rather than a comprehensive examination of the iconography and historical context. This echoes the criticism of scholars (Davis 2004; Gover 2012) who have highlighted Crary's failure to address the specific content of the images and their cultural impact on the observer's perception.[149] By delving into these aspects, we can gain a deeper understanding of the complex interplay between the immersive image, gender and cultural context. Indeed, Williams (1995) notes that "Cary's tone betrays a dismissal of the "low" contents of such images as beneath mention; he is also unwilling to consider the actual uses of, as opposed to the scientific discourses that explained, these devices" (20). Williams thus recognises a double movement and, consequently, a double pleasure in the interaction with such media forms; on the one hand, the tactile and haptic interaction with the image "in the flipping, cranking, and manipulation of cards" produces a process that makes "the body itself a machine producing views" (Williams 1995, 20). On the other hand, the author emphasises the importance of anchoring the analysis to the specific contents and iconographies of (stereo)pornography. In these relationships with and *movements* in the image, what role does gender and its performative characteristics play?

To answer this question, Williams links the idea of virtual travel, typically made possible by stereography, to the construction of the figure of the flâneuse, an emblem of modern female soma-technical subjectivity. Anne Friedberg (1993), also cited by Williams (2019), focuses on this production of movement in the proto-virtual image. In *Window Shopping*, Friedberg (1993) proposes to understand the visual experience of nineteenth-century media forms (including that of the stereoscope) as forms of movement of bodies, such as the female, usually relegated to the dimension of the domestic. Friedberg traces

[149] Crary, in line with Kitller, is explicit in this regard: "The content of the images is far less important than the inexhaustible routine of moving from one card to the next and producing the same effect, repeatedly, mechanically" (Crary 1990, 132).

the overtly masculine construction of the Baudelairean flâneur, who nevertheless shares, with very different consequences, the pleasure derived from a kind of movement in the world that seems to closely resemble that of virtualisation. In *Le Peintre de la vie Moderne* (1863), Baudelaire describes the typical flâneurie of the modern observer:

> To the perfect spectator, the impassioned observer, it is an immense joy to make his domicile amongst numbers, amidst fluctuation and movement, amidst the fugitive and infinite. To be away from home, and yet to feel at home; to behold the world, to be in the midst of the world and yet to remain hidden from the world – these are some of the minor pleasures of such independent, impassioned and impartial spirits, whom words can only clumsily describe the observer is a prince who always rejoices in his incognito. (Baudelaire 1863, 34)

What is interesting for a situated analysis of the observer-subject is the extreme importance that Baudelaire gives to the dual nature of the aesthetic experience of the flâneur: he is paradoxically both atomised in the world and hidden from it, and he is incognito, according to a scopic structure that also recalls that of the voyeur. He is therefore a subject who, with the help of male privilege, has a maximum capacity for movement without suffering the associated social consequences, as an abstract subjectivity in relationship to the urban *macadam*. The ambivalence of Baudelaire's position is, as already anticipated, revealed by his aversion to technical media such as photography and stereography. The moving experience of the flâneur is both celebrated and its technical replacement – the machinic eye of photography – condemned because of its potential to "imprison" the fluidity of the flâneur's masculine movement. Friedberg, as well as Williams, finds in the same characteristics of the flâneur a female counterpart that seems to imply a form of virtual empowerment dictated by the social movement of the female figure. The flâneuse in Friedberg is an urban subjectivity that, thanks to the development of capitalist shopping practices and their architecture (the first shopping centres, passageways, etc.), finds its own space of movement not associated with the male presence. In this sense, if we take stereography as the prototype of virtual travel, it seems to suggest a possibility of movement for female bodies and political subjectivities outside the enclosure of the domestic. In nineteenth-century urban social geography, the association between a female subject and the street had a distinct moral connotation. As

demonstrated by Susan Buck-Morss (1986), when women walked the streets, they became streetwalkers, prostitutes. They were carnal commodities sold alongside other goods in the marketplace:

> Prostitution was indeed the female version of flânerie. Yet sexual difference makes visible the privileged position of males within public space. I mean this: the flaneur was simply the name of a man who loitered; but all women who loitered risked being seen as whores, as the term "street-walker," or "tramp" applied to women makes clear. (Buck-Morss 1986, 119)

This delineation of a precise geography of gender in the urban context of the nineteenth century and of forms of progressive female independence was thus made possible by concrete practices (e.g. shopping) and virtual ones (e.g. the stereographic experience). However, this interpretation leads to a reading that is sometimes disappointing. Williams denounces a monolithic perspective of feminist criticism that does not allow for a nuanced analysis of the gendered observer beyond the Mulveyan interpretive model of the male gaze. While this premise is certainly valid and in line with the emergence of porn studies, Williams' identification of a female observer in relation to the products of nineteenth-century (stereoscopic) pornography is not entirely coherent. The reasons for this partial theoretical effectiveness stem from two issues. On the one hand, the association with the virtual flâneuse is a kind of "weak" empowerment of the female figure, which, from another perspective, could also be codified as another heteropatriarchal technique to control and contain in favour of the reproduction of the female domestic geography. On the other hand, as Teukolsky (2020) points out, Williams' thesis that hardcore photography/stereography (i.e. the depiction of complete sexual acts) would be more appropriate for a woman observer than the eroticism of the female nude, is not entirely convincing. Williams makes this kind of argument with imprudent certainty:

> [I]t may be safe to assume that the erotic images depicting women are predominantly for heterosexual men – though what is to keep a female observer from finding pleasure in them? – there is a gigantic category of what might be called heterosexual hard-core images – whether still, animated by hand, or moving through a projector – which depict the sexual acts of heterosexual couples. These

> images are not only about women nor should they be presumed to be only for men. (Williams 1995, 22-23)

Such a stance on the observer's gender in photo-stereopornography seems to confirm a heterosexual stereotype that suggests that a hypothetical female observer would be exclusively fascinated by the interaction between different genders. This criticism is also supported, again according to Williams, by an apparent greater representational equality between men and women in hardcore depictions, as opposed to "academic" nudity. The latter, according to Williams, would instead be a product exclusively "about women but for men." The distinction seems to derive again from an issue of movement and posture: "The important difference lies in the fact that the erotic pose is passive while the hard-core sexual acts are, by definition, active" (Williams 1995, 23). We have seen above that the passivity of the stereopornographic nude is exclusively illusory and is rather the locus of a broad system of image agency (as in the case of the interpellation techniques). Another aspect that refutes Williams' hypothesis is the actual circulation of such material, as in the case of the complex geography of censorship that, since the origins of photography, has sought to contain the moral threat of these images. In this context, and in terms of probability, it is therefore more likely that a nude stereograph, always on the borderline between pornography and art, was easily accessible to a broad female audience than hardcore images (Pellerin 2000).

The elusive figure of the female observer, like the pornographic material itself, is brought to light by the moral and institutional systems that attempted to control and seemingly protect them from the moral poison of erotic technical images. As we have already seen, several legal formulations ascribed a "weakness" of mind to the female observer, making her more likely to be the object of moral corruption by the supposedly high agency of these obscene images. Several news and court cases confirm this social attitude. In "A Woman's Plea" (*Times*, 20 May 1885 in Teukolsky 2020), the author declares that "no picture [at an exhibition] should find place before which a woman may not stand hanging on the arm of father, brother, or lover without a burning sense of shame." The subjectivity of the female observer is thus confirmed as the perfect potential victim of the moral poison of obscene representation, as well as of the technologies that give it an apparent indexical coherence with reality, as opposed to the perceived more acceptable realm of painted eroticism. It should also be remembered that Victorian England, the cradle of the

so-called “first wave of feminism,” was embroiled in a rather ambiguous socio-political and institutional condition. We have already mentioned organisations such as the Society for the Suppression of Vice and the National Vigilance Association, which were designed to police moral rectitude in England at that time. It is interesting to note that feminist-organised groups, such as Josephine Butler’s Ladies’ National Association, Laura Chant’s Social Purity Alliance and Ellice Hopkins’ White Cross League (Bristow 1977; Bland 2001; Teukolsky 2020), collaborated with the aforementioned institutions in policing the moral rectitude and social attitudes of English women. While these groups were essential to advancing the legal and social agendas of female empowerment (such as raising the age of consent and protecting sex workers from indiscriminate police action), they also reproduced representations and patterns of femininity that were largely anchored in a heteropatriarchal structure. Ultimately, “women vigilantly policed the erotic gazes of other women, and in doing so defined the terms of eroticism and taboo” (Teukolsky 2020, 9).

Among the main targets of such institutional groups were the performances of tableaux vivants, a scenic device that, in this analysis, shares several viewing regimes with the stereoscopic experience. We have seen how the sculptural value of the plasticity of the erotic bodies in stereography could imply the possibility of bringing these image- people to life. The experience and popular enthusiasm for the theatrical practices of the tableaux vivant are an important element in the composition of an ecosystem of images and media that characterised the nineteenth century. The extensive literature on the *pose plastique* (Walkowitz 2003; Faulk 2004; Grespi 2021) allows us to configure a space, that of the stage (more or less material), that functioned as a moral interstice. Just like the symbolic frames of the historical or mythical elsewhere of stereopornography, it gave institutional justification to the nudity and lasciviousness of the poses. As with the liminal spaces between artistic and stereopornographic nudity, the tableaux vivant produced a borderline zone where exposure and control collapsed, which also propelled the genre’s widespread popular success. The fundamental moral and ontological ambiguity of these living images is confirmed by the institutional commentary of the time, as in the case of an inspector of the London County Council who, in 1893, visited the Palace Theatre of Varieties, one of the main venues for the codification of the tableaux vivant in London. Faced with the peculiarity of the show, the inspector offered the following description:

> [S]killful and artistic living representations of well-known paintings and sculptures. Some people, however, would simply object to such public and complete display of the female form, by living women... It is a matter of difficulty to fix the exact point where propriety ends and impropriety begin. The borderline which divides the legitimate from the objectionable is not well defined. I have endeavoured to report the facts as impartially as I can, and it is not for me, but for the Committee, to approve or condemn. (TMHC, *Presented Papers*, Palace Theatre of Varieties, 1888–1904, 28 August 1897)

The ambiguous obscenity of this theatrical form was at the centre of many controversies and disciplinary sanctions, as in the case proposed by Lady Henry Somerset, leader of the Women's Christian Temperance Union, another women's organisation that collaborated with state regulators and, as noted above, helped to determine the proper postures and spectatorial content for the respectable woman in Victorian England (Faulk 2004).
In constructing the female observer, the tableaux vivant helps us to determine the regimes of vision and social agency of this figure. In terms of the political orientations of this female gaze, Faulk suggests that in relation to the pose plastique, it seems rather myopic to consider the process of reification of female subjectivities through a hypothetical proto-male gaze:

> Spectacle did not ensure the passive gaze or the full objectification of women workers. For the Victorians, spectacular entertainment did not simply produce the passive regime of looking that Debord anatomises [but rather] suggests that the dominant culture had but tenuous control over the origins and practice of tableaux vivants, as well as over the new subject of leisure that music-hall entertainment appears to have produced. (Faulk 2004, n.p.)

The presence of a large female audience at the tableaux vivants is confirmed by various documents and public debates from the same years. Following the above-mentioned denunciation by Lady Henry Somerset, Annie Holdsworth published a short story in the

Woman's Signal, "Footlights: The Story of a Living Picture" (1894),[150] to denounce the exploitative conditions tableaux vivant models were subject to and the moral danger of such shows to performers and audiences. Many of the debates that followed concerned the presence of women in the audience, once again "weak" subjects to be protected. This is evidenced by George Bernard Shaw's comment that, while he praised the artistic qualities of the pose plastique, he felt that a male chaperone at the shows was necessary: "every father of a family who cannot afford to send his daughters round the picture galleries in the Haymarket and Bond Street, to take them all (with their brothers) to the Palace Theatre" (Shaw 1894, 444).

The task of reconstructing a precise type of female spectatorship for the tableaux vivant and one of its technical counterparts, such as erotic stereography, seems rather complex. However, there are several considerations that can help us to determine her identity. First, as we have seen, the moral panic driven by the ambiguous obscenity of the genre confirms that female subjectivities occupied a liminal role, both as objects (potentially reified) of male vision and as observers of the spectacle. We have seen the role of stereoscopy and media ecosystems in constructing a form of tele-colonialism, but it is necessary to point out that even in the context of stereoscopic spectatorship, these categories are linked to precise and differentiated audiences. The audiences studied in this context are not only defined by gender but also by class. Several authors (Miller 1989; Armstrong 1995; Langland 1995) have analysed the interplay between female subjectivity and class identity in the construction of disciplined bourgeois subjectivity in Victorian England and the fin de siècle United States. For the sake of situated completeness, the layered performances of the female spectator must be located within those social architectures – the home and the theatre – that are the domains of middle- and high-class women. This essential determination also helps us to understand the ambiguous roles of female agency during the time within the specific perimeter of the domestic and its extensions. As

[150] The story tells the tale of Cecil Rhys, a 'new woman journalist' and an enthusiast of tableaux vivants who, at a performance, finds herself standing in for one of the performers who is unable to get to the theatre that evening. The performance is then interrupted by Rhys' fiancé who, seeing her naked on stage, is scandalised by his future wife's behaviour. The experience will ruin their relationship, forever marked by humiliation. Holdsworth's narrative confirms the ambiguity of female spectatorship of the tableaux vivants of the time. Annie Holdsworth, "Footlights: The Story of a Living Picture," *Woman's Signal*, December 20, 1894, 39–42. See Brenda Assael, "Art or Indecency? Tableaux Vivants on the London Stage and the Failure of Late Victorian Moral Reform," *The Journal of British Studies* 45, no. 4 (October 2006), 744–58. https://doi.org/10.1086/505956.

Langland (1995, 9-10) points out, domesticity involves more than the mere relegation of women to caring roles. Middle-class women, whose classification as such often depended on their possession of at least one domestic servant, assisted as active agents in the articulation of class identity through their engagement with various disciplinary discourses, including etiquette, social conventions and the outsourcing of domestic labour to marginalised and racialised women. This understanding helps us to further situate the role of devices (e.g. the stereoscope) and spectatorial practices (e.g. those of the tableaux vivant audience) within a precise reputational economy, where the reproduction of class hierarchies also informed the ambiguous relationship between the object and subject of female spectatorship. In the case of the female spectator, the homosocial relationship with the hyper-visible models of stereographic eroticism was always permeated by a precise scopic movement and class identity at the same time: those who could participate in the (stereographic or theatrical) optical economy were often part of social groups that exercised their moral agency over hyper-visible subjectivities – here, we have called them object-persons – presented to scopic desire.[151]

Therefore, in the context of middle-class social groups, an intermediate identity emerges, such as that of the invisible *spectatrice* (Gardner 2000). Gardner coined the term – a reference to Janet Wolff's essay *The Invisible Flâneuse* (1985) – to describe a form of spectatorship that characterised female audiences in Europe and the United States in the second half of the nineteenth century. The invisibility of the female spectator occurs through three levels: the first is defined by the processes of academic invisibilisation often reserved for the determination of a gendered audience, as we have seen in Crary. Second, the phantasmatic nature of this subjectivity is also identified by the careful processes of exclusion imposed by the various para-state organisations. There is also a third and perhaps more subtle tool used to create invisibility: the relationship between the flâneur and the invisible spectatrice. To exist and perform the act of observation, they constructed a social and aesthetic camouflage that allowed them to participate in performances and

[151] Think in this sense of the time's classic association of actress with prostitute, a topos with high disciplinary fortunes until the mid-twentieth century. On this issue, see Tracy C. Davis, "Actresses and Prostitutes in Victorian London," *Theatre Research International* 13, no. 3 (1988): 221-34, https://doi.org/10.1017/s0307883300005794: "The notion persisted throughout the nineteenth century because Victorians recognized that acting and whoring were the occupations of self-sufficient women who plied their trades in public places, and because Victorians believed that actresses' male colleagues and patrons inevitably complicated transient lifestyles, economic insecurity, and night hours with sexual activity."

media forms reserved for male audiences. George Augustus Sala gives us a portrait of this female spectator, offering a precise and poetic description of her:

> [U]nobtrusive, gentle, womanly, she is just the person to slip through a crowd unobserved, like one of those grey moths in the evening which come and go on their way, unseen by men and undevoured by birds. (Sala 1859, 148; quoted in Gardner 2000, 38)

This ambiguous form of invisibility, created using a series of techniques such as clothing choices, determined a subjectivity that contracted its legitimacy in the world by coming to terms with a supposed stereotypical femininity. This stereotype is also always codified in terms of class: a *gentle* woman, by virtue of her social affiliation, is worthy of being elevated to the role of observer, albeit through a precise negotiation of her gender performance. Thus, when women began to participate in urban geography in large numbers, they imitated "the discreet and secretive style of the business or professional man. There was often a furtive masculinity in women's street dress... since out of doors women went veiled, bonneted and cloaked in the dark colours that did not show the mud or soot, and also suggested respectability" (Wilson 1985, 36).

The strategic invisibility of the female spectator is also confirmed by the construction of spaces – material and spectatorial – dedicated to women in the social geography of nineteenth-century urbanity. For Teukolsky (2020), the resurgence of the concept of the invisible female spectator is associated with a largely positive form of female agency that determined the possibility, albeit unconventional, of participation in the media and performance life of the time. However, as Gardner notes in the text cited by Teukolsky, the invisible spectator is also a sign of a social oxymoron. The creation of women-only urban spaces – as in the case of theatre matinees dedicated to female audiences or the spaces of shopping malls – is simultaneously a symptom of a structure that aimed to domesticate and circumscribe the possible *political* agency of the middle-class female figure.[152] The iconography of the academic female nude – presented in its performative form with the tableaux vivant and in its technical remediation with erotic stereography –

[152] "Paradoxically it is the very development of a more respectable, woman-friendly theatrical space that confirms the 'private sphere' as the realm of the female within the public arena, just as the department stores replicated a domestic space for women" (Gardner 2000, 38).

thus presented a particular ambiguity, always framed within the broader regime of the spectatorial agency of middle-class women.[153] Given the wide dissemination of such representations and the female specificity of their audiences, it seems necessary to consider the effects of an apparent homoeroticism inherent in these scopic regimes. Williams, as noted, associates the female viewer only with hardcore representations of heterosexual sexual actions, implying an abstract *straight* subjectivity that can only derive erotic pleasure when a male subject is involved. Considering the widespread use of female erotic nudity and the existence of women-only environments in pose plastique theatres, it is more likely that a complex form of eroticism is defined by deriving pleasure from homosocial interactions[154] with empowered female figures, as we will see in the case of Maud Allan.

Such female homoeroticism, paradoxically, functioned within a structure – social and urban – that was overtly heterosexual. These forms of spectatorship, in addition to demonstrating the ineffectiveness of applying some paradigms of feminist analysis (e.g. the Mulveyan male gaze)[155] to different eras and social structures, determine the possibility of conceiving gendered regimes of vision and forms of erotic desire beyond what, for the time, were considered the confines of the heterosexual performative structure. It is precisely in ambiguity and the social and visual interstices that "female homoeroticism came to stand for broader freedoms of body and gaze, as women occupied ambiguous positions as both subjects and objects of erotic desire" (Teukolsky 2020, 12). Within this ecosystem of female spectatorship and eroticism, what status can be given to stereopornography in terms of its function, its interpellative techniques and its historical

[153] See Karen Halttunen, *Confidence Men and Painted Women: Study of Middle-Class Culture in America, 1830-70* (New Haven: Yale University Press, 1986) and Katherine Grier, *Culture and Comfort: Parlor Making and Middle-Class Identity* (Washington: Smithsonian Institution, 2013).

[154] The concept of homosociality, in sociology, refers to relationships between people of the same sex that do not include sexual or romantic interactions. The focus on homosociality is mainly related to the male sphere and social power determinations. In this regard, see Eve Kosofsky Sedgwick, *Between Men: English Literature and Male Homosocial Desire* (New York: Columbia University Press, 1985); Nils Hammarén and Thomas Johansson, "Homosociality: In between Power and Intimacy," *SAGE Open* 4, no. 1 (January 7, 2014), https://doi.org/10.1177/2158244013518057. The homosocial relationship is also typical of the earliest spectatorial forms of cinematic pornography as in the case of the stag film. On this subject, see Thomas Waugh, "Homosociality in the Classical American Stag Film: Off-Screen, On-Screen," *Sexualities* 4, no. 3 (August 2001), 275-91, https://doi.org/10.1177/136346001004003001.

[155] It is necessary to clarify the specific scope of Mulvey's analysis of the male gaze, focusing on Hollywood cinema of the 1930s. However, the success of the term has implied its wide application, often leading to an extreme polarisation of the notion. See Edward Snow, "Theorizing the Male Gaze: Some Problems," *Representations* 25, no. 25 (January 1989): 30-41, https://doi.org/10.2307/2928465.

audiences? Reconstructing a precise history of hypothetical female observers of stereopornography is a complex goal, often made inaccessible by the archival uncertainty that accompanies stereographic strips. It is, however, possible to state with some degree of certainty that erotic-pornographic stereographs, in their extensive production, could have come into contact with a female audience. This type of audience was certainly specific and, as expected, followed a precise class connotation even in the regime of spectatorship. The actual use of erotic-pornographic material in the domestic sphere remains difficult to determine, given the fundamental lack of documentation and personal testimony. Here, however, given the clear familiarity of the upper-middle-class female audience[156] with the apparatus, it can be assumed with a fair degree of certainty that stereopornography, in the economy of optical illusions, had a place in the media frenzy of the female observers of the time. The oft-quoted moral concern is, moreover, a symptom of this possibility, whether real or perceived. The Baudelairean denunciation quoted in the first chapter focused precisely on the postural and moral obscenity implied by the viewing of erotic materials in interaction with female subjectivities. Davis (2004, 279) reports the presence of four female collectors of erotic strips, three of whom have been confirmed by signatures on the backs of the stereographs. These figures, though statistically inconsequential, help us to consider a spectatorial regime that might imply a form of female agency well beyond that of representational reification. In particular, the narrative and erotic – rather than truly pornographic – nature of American stereographic visual culture seemed to have created a greater likelihood of interaction with female audiences. In the United States, as anticipated, the number of stereographs that can be considered pornographic – in the sense of *hardcore* and thus depicting sexual activity – is very low. This characteristic of American stereoeroticism had a profound effect on the dissemination of liminal material, which was therefore more likely to have reached a wide and not exclusively male audience. The languages of this form of para-homoeroticism were part of the construction of the invisible spectator mentioned in relation to the tableaux vivant. It is also important to remember that, particularly on US soil, "the narrative context for many of the nineteenth-century erotic views orients toward female

[156] As anticipated, the educational and tele-touristic role of stereography had a clear marketing connotation aimed at the female audience as the main actors in the domestic class performance of which the stereoscope was a part (Davis 2004; 2015).

interests, with the values of home multiply coded, and the placement of these views as articles for home use provides a governing structure" (Davis 2004, 279).

The eroticisation of the female codes defining the domestic and clothing could have informed a form of erotic spectatorship, enabling the rethinking of the common idea of pornography as something only related to "naked" obscenity. We have seen how the plasticity of the stereopornographic body could induce a form of person-image, in line with the remediation model of the tableaux vivant. Likewise, the same representational forms and their plastic and immersive charges could have induced another pornographic contract. It is therefore not interaction with an image that presents a plastic and haptically accessible body-object but rather the presentation of empowered figures of female agency, which in turn could have induced a form of eroticism in its female observer. This path of desire could also have found unexpected erotic regimes in the stereographic strips that, between the United States and England, examined the parodic construction of gender stereotypes through the figure of the New Woman. To understand the spread of this social figure, it may be useful to refer to Sidney Grundy's 1894 satirical play *The New Woman*. The first act of the play is particularly informative regarding female sexual identity at the time and provides useful insights into the construction of the female observer. In the opening pages of the script, we read a brief exchange between two prototypical characters, Enid Bethune and Victoria Vivash, two women and two stereotypes that confirm the ambiguous polarisation of female social spaces at the turn of the century:

> ENID: Why should a man be allowed to commit sins –
> VICTORIA: And woman not to be given an opportunity?
> ENID: Then you want to commit sins?
> VICTORIA: I want to be allowed to do as men do.
> ENID: Then you ought to be ashamed of yourself; there!
> VICTORIA: I only say, I ought to be allowed.
> ENID: And I say that a man, reeking with infamy, ought not to be allowed to marry a pure girl?
> VICTORIA: Certainly not! She ought to reek with infamy as well!
> ENID: Victoria'![157] (Grundy 1894, Act I, Scene 1, 16)

[157] Sidney Grundy, *The New Woman* (1894) in *The New Woman: And Other Emancipated Woman Plays*, ed. Jean Chothia (Oxford: Oxford University Press, 1998), Act I, Scene 1, 16.

On the one hand, we have Enid, a perfect portrait of social purity feminism[158] exemplified by women's societies and organisations such as those mentioned earlier. In line with this, Enid promotes a form of chaste morality for both men and women. Victoria, on the other hand, calls for equality in the possibility of "committing sin," the only meaning of which, typically used in the parodic and humorous context of the time, was a reference to sexual acts. The broad imagery of the New Woman, of which Sidney Grundy's play is just one example, opens up new avenues for understanding the female spectatorship of the time. We must therefore imagine this figure as an ever-dual social and cultural iconography, constructed simultaneously by those who promoted her qualities, like Sidney Grundy and Sarah Grand, and those who condemned her existence, like the cartoonists of *Punch* magazine[159] and the various social purity associations. This double connotation can also be found in stereographic representations of her features. The focus here on such representations is motivated by the fact that most of the themes addressed – the management of the home, the courtship system of the time, etc. – had a clear market reference to the female public.

This analysis is not intended to perpetuate the stereotyping of the domestic as a feminine characteristic but rather to look for traces of an empowered and conscious eroticism in these stereotypical environments, beyond the classic representation of the pornographic body or sexual action. Eroticism, in this stereographic context, was a force capable of disorienting a normative structure, such as the marital relationship. Through clear allusions to a free and conscious sexual performance on the part of the women portrayed, some forms of stereography proposed virtual environments – in the double sense of three-dimensional architectures and spaces of potential – in which the Foucauldian device of sexuality could be exploited in favour of a parodistic action functional to the deconstruction and re-semanticisation of gender roles. The New Woman, the protagonist

[158] The concept of feminism is highly ambiguous when applied to the second half of the nineteenth century. Many of the women's associations of the time, as expected, promoted a particularly problematic and disciplinary form of social agency. However, it is possible to trace in these years the prodromes of the complex struggle – more political than social – of suffragist feminism. On this topic, see Philippa Levine, *Victorian Feminism, 1850-1900* (Gainesville: University Press of Florida, 2018).

[159] On 21 December 1895, the British satirical magazine *Punch* titled one of its articles 'THE END OF THE NEW WOMAN – The crash has come at last.' See Sally Ledger, *The New Woman: Fiction and Feminism at the Fin de Siècle* (Manchester – New York: Manchester University Press, 1997), 94.

of literary and theatrical products from England and the United States in the 1890s,[160] thus also produced a stereographic iconography with high erotic potential. This, it must be said, is certainly difficult to dissect because it holds several social and visual structures in tension. On the one hand, the representation of politically and sexually independent women limited their agency by placing them within a clear parodistic framework. On the other hand, if we consider the unintended consequences of these representations, they produced an effect of female empowerment and eroticism that could have been harnessed by the female observer.

Between England and the United States, several stereographic strips produced this kind of socio-visual chiasmus. Several titles containing the words "New Woman" or famous strip series such as "Is Marriage a Failure" demonstrate a clear crisis in the performative and stereotypical determination of gender and the various institutions, such as marriage, that affirmed its legitimacy. Davis (2011) points to another feature, both technical and social, of such stereographic representations. The instability of the illusion of three-dimensionality highlights a crisis in the supposed naturalness of gender relations. We have seen how the theoretical potential of stereography since Wheatstone's experiments can imply the possibility of constructing an unstable subject in relation to the sensible world, producing a form of technical proto-phenomenology of high philosophical value. Similarly, according to Davis, representations of gender and sexual identity introduce, precisely through the stereographic illusion, the doubled performative value of this gendered expression:

[160] The period of maximum development of the New Woman figure can be traced, in England and the United States, to the decade of the 1890s, as confirmed by several commentaries of the time. Ledger explains how those years saw a complex intersection of 'gender' scandals related to homosexuality, with Oscar Wilde, and the redefinition of female roles, with the New Woman: '*The Yellow Book*, a journal that for about a year between 1894 and 1895 provided a cultural forum for genuine dialogue between New Women, Aesthetes, Decadents and other avant-garde writers of the fin de siècle, fell victim, in April 1893, to the downfall of Oscar Wilde. Although Wilde had never contributed to *The Yellow Book*, it was to some extent deemed guilty by association, and operated a much more cautious editorial policy after his imprisonment. The cultural archetype of the New Woman, and the large body of literature that brought her to life, was similarly caught up in the scandal surrounding Oscar Wilde. On 21 December 1825 *Punch* triumphantly announced "THE END OF THE NEW WOMAN – The crash has come at last." Victorian feminism, for this most misogynist of Victorian journals, was on the run. An enormous number of New Woman novels and short stories had been published and widely read in the 1890s, concomitant with both the rise of mass-market fiction and with the resurgence of interest in the Woman Question at the fin de siècle'; Sally Ledger, *The New Woman: Fiction and Feminism at the Fin de Siècle* (Manchester – New York: Manchester University Press, 1997), 94.

> The gender divide that she [the New Woman] so emphatically emphasised in her comedic inversion of the nature of the sexes became, thus, a matter of individual leisure and construction, appearing with less certainty than natural law and more closely related to fiction. (Davis 2011, 24)

It is no coincidence, then, that such products were most prevalent in the last decade of the nineteenth century, when "the ideology of dividing and reconstructing genders in the institutions of courtship and marriage seemed to reach a late-century crisis, signing with a nervous laugh the malleable artifice of the divide" (Davis 2011, 24). Just as the stereographic illusion introduces the possibility of renegotiating the fixed Cartesian relationship between perception and the world, so its effects extend to the subjects who *occupy* that world, implying through its stereographic representations a deconstruction of supposedly "natural" gender performances.

The fact that these products were intended for female consumers is confirmed by the various poses and social performances staged. The attention paid to domestic activities – sewing, cleaning and laundering – confirms a precise architecture of gender and class identity, which allowed its *queering* through the reference to a non-stereotypical eroticism. Domestic performances were among the main iconographic forms threatened and deconstructed by the figure of the New Woman. This symbolic character is particularly relevant for understanding the moral threat posed by the autonomy – social, political and sexual – of the female figure. At the same time, this figure intersected with major issues regarding the delegation and distribution of domestic work to racialised and subaltern subjectivities. The iconography of the New Woman was immediately exploited by the stereographic industry and became a central figure, especially in the United States. As we can see from this group of American stereographs produced between 1872 and 1901 (figs. 44-47 in Davis 2011), (new) women engaged in oratorical activities (as in fig. 44) or reading a newspaper (fig. 47) – usually an accessory to masculine aesthetics – while the man was busy washing clothes and doing laundry. This type of representative gender model was, it should be remembered, part of an ironic and parodic expression and thus far from defining an iconographic form of the empowered female subjectivities. In these cases, the stereographic environment is always associated with a form of implicit eroticism, found both in the postural dimension and in the gaze adopted by the protagonists. The presence of trousers, narrow and short skirts that showed the ankles

determined not only the acquisition of masculine dress and mobility[161] by female subjectivities but also their intrinsic erotic charge. This system of representation thus exhibited, as anticipated, a fundamental oxymoronic duplicity. On the one hand, these stereographs were aimed at the heterosexual couple and family to provide entertainment (erotic and otherwise) but also to warn women, and above all men, of the "moral dangers" of female independence. However, the educational purpose – typical of scientific stereography – led to an unexpected and unintended consequence. If gender roles are variable and subject to an educational process, they have little of the naturalness that nineteenth-century society and physiology ascribed to them. Just as stereographic representation determined a different approach to the world, so it accentuated the cultural instability of gender coordinates through the rediscussion of their main axes. As Davis (2011) argues, "the viewer was continually reminded every time he or she lowered the stereoscope of the artifice it took to split the world into two parts only to reassemble it again into a lifelike environmental replication" (35). Thus, these strips, in their simulative double function – physiological and social – unmasked, ante litteram, the performativity of gender roles and "brought home the awareness that gender was a divide continually

Figure 44 F.G. Weller, Woman's Rights - The Reharsal*, 1872, Davis Collection, in Davis (2011, 25)*

[161] In the discourse on mobility, the recurring motif of the bicycle emerges as particularly salient. Emblematic of the potential to navigate urban landscapes, the bicycle assumes multiple meanings within cultural narratives. Beyond its utilitarian function, the bicycle is imbued with symbolic resonance, serving as a metaphor for freedom and efficiency. In certain contexts, the bicycle also assumes a parodic role, playfully alluding to its inherent erotic connotations. This playful juxtaposition is underlined by the physical posture required for cycling, which in certain interpretations can evoke suggestive images related to genital stimulation. Cf.: Ellen Gruber Garvey, "Reframing the Bicycle: Advertising-Supported Magazines and Scorching Women," *American Quarterly* 47, no. 1 (March 1995): 66, https://doi.org/10.2307/2713325. Patricia Marks, *Bicycles, Bangs, and Bloomers* (Lexington: University Press of Kentucky, 2014).

replicated in its simulations, and, through the stereoscope, viewers were reminded of this private, subjective, constructed nature" (35).

Figure 45. Benjamin Kilburn/James M. Davis, Don't Tell Me You Won't Wash!, *1897, Davis Collection, in Davis (2011, 30).*

Figure 46. Underwood and Underwood, New Woman – Wash Day*, 1901, Davis Collection in Davis (2011, 33).*

Figure 47. R. Y. Young/American Stereoscopic Co., Woman's Rights*, 1901, Davis Collection, in Davis (2011, 29).*

The subversive femininity of the New Woman caused widespread moral and social panic. A few years later, at the beginning of the twentieth century, Maud Allan's dances, which replaced the pose plastique at the Palace Theatre in London, caused a scandal for similar reasons related to the autonomy of the female spectator. The famous dance of *Salome*,[162] a reinterpretation of Oscar Wilde's controversial play, was condemned not only for the

[162] See Udo Kultermann, "The 'Dance of the Seven Veils.' Salome and Erotic Culture around 1900," *Artibus et Historiae* 27, no. 53 (2006): 187–215, https://doi.org/10.2307/20067116; Amy Koritz, "Dancing the Orient for England: Maud Allan's 'the Vision of Salome,'" *Theatre Journal* 46, no. 1 (March 1994): 63, https://doi.org/10.2307/3208955; Judith Walkowitz, "The 'Vision of Salome': Cosmopolitanism and Erotic Dancing in Central London, 1908-1918," *The American Historical Review* 108, no. 2 (April 2003), 337–76, https://doi.org/10.1086/ahr/108.2.337.

clear onanistic references in the performer's movements but also for the presence of a large female audience, as confirmed by Walkowitz.[163] The presence of a female audience supposedly exercising a homoerotic gaze was considered so obscene that on 16 February 1918, Pemberton Billing's private newspaper, not coincidentally called *The Vigilante*, published an article titled "The Cult of the Clitoris" denouncing its immorality.[164] The very notion of a cult of the clitoris promoted accusations of lesbian innuendo against the dancer, further contributing to the climate of moral panic about the issue. Allan sued the newspaper for defamation, but the accusation and the moral shame of the matter effectively ended her career. The legal proceedings surrounding Allan are a valuable source for understanding the agency of subversive gender performances in the social and legal geography of early twentieth-century England.[165] At the same time, this kind of trial and public record helps us to confirm the high level of female participation in a performance that was apparently produced for a reifying male gaze. Allan's *Salome* performance, where she was topless and covered only with jewellery reminiscent of oriental(ist) culture,[166] could be interpreted, just like the acts of violence depicted in the stereograph of the New Woman (fig. 45), as the artistic representation of an untamed

[163] Walkowitz (2003) reports a number of important characteristics of the audience of Allen's shows: 'A wide range of women were drawn to her performance. These included well-off ladies who had already made Central London their trade route for daytime shopping and who had begun to combine an evening visit to the Palace Theatre with dinner or supper at the Savoy Hotel. To accommodate demand, the Palace also ran matinee shows devoted exclusively to Allan's dancing, where "smoking" would not be permitted' (360). It is interesting to note in this context the double engendering of female spectatorship, always associated with the more morally consonant morning performances as part of the mobility associated with activities such as shopping.

[164] The article makes a complex series of accusations against Allan and her performance, going far beyond mere moral obscenity. In fact, the text was a response to J. T. Grein's announcement in 1918 that he had recruited Allan for the lead role in a private production of Wilde's *Salome* in London at the Court Theatre. The article in *The Vigilante* was thus a denunciation of Allan as a member of an elite group of 'sexual perverts' who were vulnerable to social and political blackmail by the Germans in the final years of the First World War. The denunciation of Allan thus intersects sexual and moral obscenity with the broader anti-British sentiment at the height of its nationalist expression. Cfr. Walkowitz (2003, 372). It should also be remembered that the general social panic about homosexuality – and the link with the figure of Salome – was clearly also referred to the work and trials of Oscar Wilde in 1895. See J. Bristow, "The Blackmailer and the Sodomite: Oscar Wilde on Trial," *Feminist Theory* 17, no. 1 (December 21, 2015): 41–62, https://doi.org/10.1177/1464700115620860; David Schulz, "Redressing Oscar: Performance and the Trials of Oscar Wilde," *TDR (1988-)* 40, no. 2 (1996): 37, https://doi.org/10.2307/1146528. On the influence of Wilde's trials on Allan, see Philip Hoare, *Oscar Wilde's Last Stand: Decadence, Conspiracy, and the Most Outrageous Trial of the Century* (New York: Arcade Publishing, 2017).

[165] See Laura Doan, *Fashioning Sapphism* (New York: Columbia University Press, 2001).

[166] In line with what was said earlier about the 'autonomy' of the pornographic genre, it should be pointed out that here too that Allan's *Salome* recalled a historical and geographical elsewhere. The visual transport system collided with the actual presence of the body on stage, generating one of those liminal territories between the erotic and the pornographic that ensured the commercial success of the performance.

woman who ends her ecstatic dance in an equally erotic encounter with the decapitated head of John the Baptist (Fig. 48).

Figure 48. Maud Allan as Salome in The Vision of Salome, *published by J. Beagles and Co bromide postcard print, 1908.*

The fact that such a performance was a major success among the women of the time provoked a moral panic about the possible spread of lesbian desire, exemplified by the cult of the clitoris. Such an accusation, clearly unlikely in its adherence to the real sexual orientation of the show's audience, nonetheless prompts the need for reflection on the kind of homoerotic pleasure that such representations, like the stereographic ones, determined. Our identikit of the female observer is thus powerfully associated with a type of sexual desire that is not limited to the pleasure derived from the hardcore exposure of a pornographic body or sexual action. Since these latter representations were unlikely to be accessible to a broad middle-class female audience, the female erotic observer extracted from the intersection of empowerment and erotic agency the satisfaction of a pornographic scopic regime:

> The scene of a woman's homoerotic gaze came to connote a new liberation for women, even in contexts that were apparently normative and heterosexual. The "cult of the clitoris" encompassed exactly this possibility, not merely alluding to a taboo sex act but also reacting against the politics of female gazing, female self-sufficiency, and the radical possibilities inherent in women enjoying themselves alone in the bedroom. (Teukolsky 2020, 17)

The iconography of a subversive femininity, beyond the classical regime of possession and reification, also recurs in more conventionally hardcore stereographic productions. This aspect, on the one hand, is part of a type of parodistic fetishisation that finds its main subject of vision in the privileged male eye. On the other, it determines, exactly as with the stereographs of the New Woman, the possibility of conceiving an *unforeseen female observer*.[167]

There are several iconographic occurrences that show us this kind of intersection of gendered regimes of vision. This is the case with this French stereograph made between 1855 and 1865 (fig. 49). The strip, an albumen print, shows a female subject using a sex toy. Again, as mentioned above, the interpellative techniques are clear, and an interpretation inviting the penetration of the male gaze is certainly undeniable. However, with regard to what has been said about the construction of the unforeseen female observer, it is important to point out that this kind of eroticism, supported by a form of looking at the camera on the border between seduction and challenge, could imply the kind of homoeroticism that Allan's *Salome* and the stereographic New Woman produced. This stereograph is obscene in multiple ways; in addition to the exposure of the genitals, there is a clear reference to a taboo of nineteenth-century gender culture: female sexual independence. This form of autonomy – that the cult of the clitoris, so much denounced at the beginning of the twentieth century – which already in 1850s France, was a source

[167] In this case, the term 'unforeseen' is intended to keep several philosophical and semantic connotations in tension. On the one hand, the unexpected recalls the famous definition of the unforeseen subject proposed by Carla Lonzi (1970) to identify the revolutionary role of female subjectivities excluded from the cogitating ego of philosophical critique. On the other hand, the unexpected is also an adjective that denotes a product, stereopornography, that reaches an observer for whom it was not intended.

of scandal and therefore a perfect pornographic subject.

Figure 49. Stereoscopic image on paper to be viewed as transparencies. Belloc (?), 1855-1865, in Nazarieff (1987, 105)

Autoeroticism and the scopic regimes deriving from it are also the protagonists of a complex stereographic iconography in another French strip from the 1860s. Figure 50 shows a bourgeois couple (defined by the typical male top hat) engaged in a sexual scene. However, the sexual act of standard penetration is observed by a third female figure. In this case, according to the connotations that the pornographer wanted to give to the subject, the third subject could be a maid, a typical erotic subjectivity of stereopornography and a clear example of the bourgeois class culture. In this strip, the architectural and theatrical construction of the scene suggests a voyeuristic act on the part of the figure on the right. She appears to be spying on the sex act through a keyhole, following a classic stylistic pattern of voyeuristic representation. However, the appearance of a *voyeuse* forces a broader reflection on the regimes of scopic power in the stereography of the time[168].

If, on the one hand, such an action takes the form of an exacerbation of morally obscene behaviour and is therefore appropriate to the realm of the pornographic, on the other hand,

[168] For the sake of a complete analysis, it should also be noted that the figure characterised by male clothing could, on closer inspection, be a female subjectivity en travesti. This aspect, quite typical of the erotic-pornographic parodies of the time, gives us an idea of pornography, in which – due to the marked obscenity that characterised it – there could be room for complex and multi-layered experiments with gender and sexual orientation, albeit always within a broader framework of moral ambiguity that at the same time judged the content.

it seems to introduce into the equation of the perceptual contract an unexpected embodiment of the gaze. It could entail a game of scopic mise en abyme, where the observer is doubled, caught in the act of her vision.

Figure 50. Stereoscopic image on paper, Moulin (?), c. 1860, coloured albumen paper, in Nazarieff (1987, 106).

The unforeseen observer thus seems to recall the possibility of disorienting the binary nature of the gendered spectator. Mulvey, in her *Afterthought* (1999), which followed the famous – and problematic – essay that inaugurated the idea of the male gaze, proposes a more nuanced way of inhabiting gender in the scopic regime. For Mulvey, the cinematic spectator has the possibility of *wearing* a male or female perceiving subject,[169] thus liberating the blatantly essentialist assumption that the classical regimes of the male gaze carried with them.[170] The unforeseen female observer, like that of the "second" Mulvey, is a subject who plays with the gaze and its embodiment, deriving from dwelling in the image an erotic pleasure beyond the patterns of stereotypical heterosexuality.

[169] The question of the wearability of a virtual body and a symbolic gaze in their interference and friction with performative theories of gender in Butler and its queer declinations (Ahmed 2006) will be discussed in the following chapters.

[170] 'The woman spectator in the cinema can make use of an age-old cultural tradition adapting her to this convention, which eases a transition out of her own sex into another' (Mulvey 1999, 125).

4.2 The Postures of the Unforeseen Observer

> Posture shapes and shaped our sense of culture
> just as our culture shapes our sense of the body.[171]

To complete the analysis of this unforeseen female observer, without making any claims as to the analysis' exhaustiveness, we can return again to postures. The second half of the nineteenth century witnessed a pervasive preoccupation with the moral and physical stances adopted by women across Europe and the United States. This phenomenon, viewed through the lens of Foucauldian conceptual frameworks, requires us to consider postures and their prescriptions, such as those found in etiquette manuals, as means of attempting to control and domesticate bodies and identity performances. As stated by Foster-Dixon:

> [T]he performing body is viewed as an aesthetic construct of the etiquette writer, who is at once concerned with denying the pleasures of the natural state or the grotesque body while she replaces it with a fragmented, yet ideologically hegemonic body. (Foster-Dixon 2009, 79)

The proliferation of etiquette writings dedicated to posture and deportment is reflective of much literature that dictated the best postures for respectable female subjects.
In an 1891 supplement to *The Girl's Own Paper*, an anonymous writer – An Artist – describes the best inclinations and postures for the female body. The author stresses the importance of good posture because, more than other status symbols, it is a signifier of class affiliation:

> There one with the faculty for observation may see and learn to distinguish each class by other indications than the clothes, particularly by the carriage – I do not mean the wheeled vehicle, but deportment, and even to make some shrewd guesses at character. It does not tie long: the brain acts with a rapidity far beyond the most instantaneous mechanism. The figure is observed, style and bearing noted, with other

[171] Sander L. Gilman, *Stand up Straight! A History of Posture* (London: Reaktion Books, 2018), 352

> peculiarities, and in less than no time the label is filled in and pinned to the human parcel mentally. (*The Girl's Own Paper* 1891, 508)

An Artist's considerations are paradigmatic for several reasons. First, the communicative value of posture is described as a form of moral and social prenoetic knowledge. It is determined "at a glance," in line with reflections on body figures, as we shall see with Delsarte. By including illustrations of bad deportment (figs. 50–51), An Artist describes the main characteristics of incorrect postures with a focus on female subjectivities:

> So when one sees a woman slouching along with shoulders drooping forward and arms moving at all angles, or wobbling with ungainly swayings owing to over-tight lacing, or too small boots, or high heels, one can scarcely repress a shudder, for, knowing the capabilities of the beautiful human form, one is stung to distraction by this libellous caricature. (*The Girl's Own Paper* 1891, 508)

Figs. 49-50. Illustrations from The Girl's Own Paper *1891, 508-509.*

The female body is thus codified by a careful somatic architecture that constrains its movements in a rigid vertical pattern and bourgeois class identity. Once again, moral and physical postures are combined in a body ekphrasis that suggests an obligatory rectitude:

> A beautiful face will not redeem a bad form, and many spoil a good form by bad deportment. Of these persons the most irritating to look upon are, first, the woman

> who appears always in a violent hurry, and, hugging her umbrella or sunshade to her, strides along with body bent forward to an angle of thirty-five degrees [...]. (*The Girl's Own Paper 1891*, 508)

The obsessive focus on inclination, even described in its precise degrees ("35 degrees"), imposes a vertical rigidity on the female figure that constructed the morally correct subject at turn-of-the-century Victorian England. A *correct* and unabashedly bourgeois subject determines their posture in opposition to any form of dishevelled deportment, displaying a clear symbol of an abject social, intellectual and moral status.

Even on American soil, etiquette manuals such as *The Ladies Book of Etiquette* (1860) focused on the definition of disciplined, attenuated and silent bodily figures in the social and urban arena. Florence Hartley, the volume's author, reaffirms the extreme importance of the performance of postures, gestures and interpersonal relations for female subjectivities based on the desire to draw little attention to oneself in the pursuit of maximum politeness.[172] Hartley's volume was also strongly influenced by the "Americanised" techniques of François Delsarte (1811-1871), one of the most influential theorists and teachers of singing, acting and performance active in Paris from the 1840s. The importance of Delsarte's thoughts and techniques in our analysis of the unforeseen observer is twofold: on the one hand, his techniques and theories are imbued with a desire to liberate bodies, gestures and feelings from the rigidity of traditional theatre, opera and ballet. On the other hand, this "liberation" is embedded in a project permeated by a complex theoretical system strongly influenced by Catholic roots. Delsarte converted to Catholicism at the end of the 1830s and joined the Parisian church of Abbé Chatel, which promoted Saint-Simonist socialist principles (Fischer 2018, 128), intersecting Christian faith and scientific utopia. The Catholic-Christian roots of Delsarte's thoughts and practices, as we shall see, became an important reputational device that made his teachings and exercises more acceptable while purifying any possible form of eroticism from bodily and spectatorial performances. The thought behind Delsarte's practice was based on a triadic system that intersected mind, body and spirit – in full recollection of

[172] Hartley's (1860) attention in this regard is devoted both to dress, 'Let good taste dictate the limits where fashion may rule, and let the colours harmonise well, and be of such tints as will not attract attention' (29), and to gestures and posture, 'While you maintain a cheerful deportment, avoid loud talking and laughing, and even more carefully avoid any action or gesture that may attract attention and makes you conspicuous' (56).

the Christian Trinitarian nature – and was applied to performance practices that were also based on triads related to the expressive potential of the individual parts of the body and their interactions in movement. What is interesting for our analysis is Delsarte's role in the construction of a *séméiotique*[173] of the body that can further clarify the posturological metaphor of verticality and obliquity. The root of Delsarte's thought is in fact linked to a real "paradox of reason." Reason is a discursive quality (Delsarte 1859, 124) of the human being, an expression of the "pure" perceptive matrix that is *intelligence*:

> Between reason and intelligence, although there be inclusion and co-essentiality in these terms, there is a great difference in the mode of cognition; for... intelligence is shown by simple perception, and reason by the discursive process. Thus, while intelligence acts simply, as in knowing an intelligible truth by the light of its own intuition, reason goes toward its end progressively from one thing known to another not yet known. (Delsarte 1892, 513, quoted in Fischer 2018, 133)

The dyad of reason and intelligence, with clear reference to Aquinas, is particularly important not only for a full understanding of Delsartian methods but also for a more precise determination of the agency granted to postures in the social, moral and gnoseological context. Performance – both acting and singing – is not mere expression; it produces forms of truth as a method of investigating the world. This perspective is confirmed by Delsarte's own careful sessions of observation of behaviour and bodily morphology in the Paris of the time. The prenoetic nature of intelligence can only be expressed through the body, given its non-discursive nature. Delsarte's technique, at once scientific and mystical, produced precise practices for oratorical and acting exercises. Influential in all areas of performance practice, the Delsartian body is a unit broken down into its parts, surgically analysed and improved with the will to produce an aesthetic expression, understood as a "manifestation of feelings [*sentiments*]" (Delsarte 1892, 120). This expression is primarily shaped by the rejection of all forms of performative rigidity

[173] Delsarte's 'semiotics' refers precisely to the system of translation and infiltration of meaning into gestures. It is interesting to note that Charles Sanders Pierce's second wife Juliette took courses from MacKaye, a student of Delsarte. This connection, as Fischer (2014) explains, was in fact essential for the philosopher in the construction of a semiotic method based on "an account of cognition as mediated through feeling and sensation" (Fischer 2014, 372).

and straight lines; it is a serpentine[174] discipline that finds its point of arrival in the *sinuous figure*. The focus on posed tortuosity and contortion, as well as the reference to classical statuary,[175] imposes an important point of contact with the posturological obliquity of the unforeseen observer and the more general media posturology proposed here. At first glance, such attention to the figures of the body would seem to introduce a liberation of female performative agency, fully in line with the developments in modern dance techniques. The synchronicity between the expansion of Delsarte's practice, particularly in the United States, the suffragette movement and the emergence of the New Woman would seem to constitute an effective triangulation in the redefinition of femininity at the turn of the century. However, the interpretation of female empowerment at the time cannot be easily described without addressing the profound ambiguities of such social, iconographic and performative movements.

Just as in the case of the New Woman, Delsartian femininity was not without ambiguity, especially with regard to the role of eroticism and sexuality in its conformation. If, on the one hand, these techniques of the body contributed to the increased mobility of female corporeality, on the other hand, they reiterated a typical topos of Victorian femininity. The crisis between eroticism, purity and submissiveness, well-illustrated by the plastic pose and reference to ancient statuary (Lake 2005), implicitly defined a new act of the Foucauldian *dispositif* of sexuality. The exclusion of eroticism from Delsarte's theories and practices, but its forceful re-emergence in the actual performances he promoted, highlighted the perfect and precarious chiasmus between licit and illicit that characterised female subjectivities on and off stage in late-nineteenth-century culture.

When, as in Allan's case, the erotic connotations became explicit and were corroborated by other forms of sexual "obliquity" – the accusation of lesbianism or the cruising environment of the Palace Theatre[176] – even the apparent liberation and mobility of

[174] For the serpentine pose, also typical of much Italian cinema in the 1910s, see Grespi (2019, especially 307-15).

[175] American Delsartism contributed to the spread of the pose plastique in the United States. Stebbins in particular, a direct student of Delsarte, based much of her pedagogical and editorial practice on the performative mimesis of classical statuary. The issue, as always in the semiotic approach of American Delsartism, has to do with the transfer from body to sense and from sense to morality. To 'imitate' a Greek statue thus also meant to exercise the social value of the classical Greek stereotype.

[176] Walkowitz highlights the complex intersection of homosexual culture and the influence of Wilde, Allan and the ambiguous environment of the Palace Theatre: 'Cruising men may have been drawn to Allan's performance because of its association with Wilde's Salome but also because the variety theaters were well known to be spaces where "sodomites" circulated in the back with the 'ladies of the night' and contributed to the frisson and ambiguity of this sexually charged environment' (Walkowitz 2003, 364).

Delsartian practice could only give way to moral and legal condemnation, as in the case of the cult of the clitoris. Beyond stages and soirees, Delsartism, especially the American version, had a clear influence on the discipline of women's social bodies. Genevieve Stebbins[177] and Emily Montague Bishop,[178] Delsarte's indirect pupils,[179] applied their master's methods to everyday performance, synthesising these techniques with the discursiveness and wilfulness typical of etiquette writing. Bishop, in *Americanized Delsarte Culture* (1892), which would later acquire the emblematic title *Self-Expression and Health: Americanized Delsarte Culture* in the 1895 edition, describes the main techniques for a correct, graceful and *healthy* everyday life. Based on Delsarte's triadic system, Bishop recognises the profound influence of spirit, mind and body, focusing in particular, with a secularised afflatus, on the last dyad. Compared to the more rigid and "popular" postures we saw in *The Girl's Own Paper*, Bishop's positions are based more on the spontaneity of gesture and the "naturalness" of pose. The constant focus on the relaxing qualities of good posture, attitude and gesture is again both liberating and disciplining. For Bishop, as for Delsarte, everyday postures have implications for the mental connotations of the subject who performs them. A 1902 article in *Werner's Magazine*, describing her methods, argues the following:

> Mrs. Bishop's lessons include some definitions of mental state, of the action of the mind on the body, a clear sufficiently comprehensive outline of the physical structure, and best of all, reasons why certain attitudes, by influencing organs of the body, had their effect upon the mind, that arrogance, hauteur, indifference and mental coldness must be a result of permitting the body to express such qualities. ("Mrs. Bishop's Methods," *Werner's Magazine* 1902, 715)

The article, in addition to confirming the metaphorical path of posture described in the first chapter, leads us to consider more precisely the disciplinary connotation that

[177]Some of her most important publications include *Delsarte System of Expression* (1885–1902), *Dynamic Breathing and Harmonic Gymnastics* (1895), *The Genevieve Stebbins System of Physical Training* (1898) and *Society Gymnastics and Voice Culture* (1888), among many articles in *Werner's Magazine*.
[178] Key publications are *Americanized Delsarte Culture* (1892), *Interpretative Forms of Literature* (1903), *Daily Ways to Health* (1910) and *Seventy Years Young: or, The Unhabitual Way* (1916).
[179] The legacy of Delsarte's thoughts in the United States can be attributed to figures such as Steele Mackaye, who studied directly under Delsarte, and 'second-generation' students such as Genevieve Stebbins, Henrietta Hovey, Emily Bishop and Anna Morgan, who trained with the master's successors in America (Cfr. Ruyter 1996).

American Delsartian practices envisaged, especially towards female subjectivities. The Delsartian body, in Bishop and Stebbins, is a corporeality devoted to psychophysical *health*. The focus on health and relaxation fully participates in the definition of medicalised forms of the female figure built around the hysterical body, in its double meaning of static[180] and convulsive[181] subjectivity. It is no coincidence that in her later *Seventy Years Young; or, The Unhabitual Way* (1907), Bishop describes the three ways of keeping oneself physically and psychologically young:

> Those who would live long and be young, then, should avoid: (1) Under-activity – easy indolence of mind, dulled sensibilities and inert physical expression. (2) Over-activity – intellectual, emotional and physical stress continued to the point of exhaustion. (3) perverted activity – In any of the well-known ways. (Bishop 1907, 24)

What seems particularly relevant to us, in understanding the erotic posturology of the unforeseen observer, is the careful and repeated exclusion of "perverted activity," which, in a perfect Foucauldian chiasmus, is discursively named but not described, alluding to a shared knowledge. The techniques of the self, stipulated by American Delsartism thus include actual modes of social participation and female mobility; to remain young, Bishop (1916) argues, it is necessary to remain active, work and be social (15) until "late in life," making it consequently possible to marry until the age of 29 (14), an age well beyond the Victorian standard. At the same time, however, this form of empowerment and liberation is always determined by the exclusion of sexual and erotic independence. The Delsartian

[180] The practice of the pose plastique – as we have seen, the "flesh and blood" equivalent of the stereographic performance – defines a form of resistance against the extreme mobility of the modern, flâneuristic body (Grespi 294). This immobility resonates with the physical paralysis of the hysterical body as well as that of the statuesque performance of the tableaux vivants, producing two sides of a complex phenomenon that intertwines gender bias, medicalisation and aesthetic stereotypes of femininity. In the context of the pose plastique, the practices of Delsarte, especially the American practices of Stebbins, played an essential role, imbued with a clear philosophy of the mind-body, where the performative embodiment of the Greek statue implied a technique of the self aimed at achieving the social and moral ideals that this iconography represented: "Artistic statue-posing is not a mere external imitation of a Greek marble. It is something infinitely greater. It is a creative work of intellectual love. It is a spiritual aspiration toward a superior and definite type of beauty, in which lives and moves a human soul" (Stebbins 1894, 257).

[181] The relationship between the kinetics of the body in the hysterical attack and (proto-)image-moving devices is well exemplified, in addition to the classic conception by Didi-Huberman (1982), by Grossi (2017). A particularly comprehensive example of this is Camillo Negro's *La Neuropatologia* (1908), especially in the films devoted to the hysterical attack and its treatment (cf. Farassino 1983).

system did not directly address the *spectator* dimension.[182] However, it is interesting to note that in full accordance with the social purity feminist movement mentioned above, the influence of Delsartism on posture determined, especially in the United States, a very clear disciplinary form with regard to the erotic obscenity of female subjectivities. The point we wish to emphasise here is the ambiguity that the fin de siècle and early-twentieth-century culture brought with it with regard to female participation in the social, postural and mediological ecosystem of the time.

It should be remembered that this period began to deconstruct the rigidity of women's clothing in favour of more comfortable solutions suited to movement.[183] It was precisely the threat to posture posed by less restrictive clothing and less rigid postures that prompted a proliferation of pamphlets and articles attempting to control their dissemination.

This aspect is central to the codification of the unforeseen female observer and her empowered eroticism. What is relevant to the construction of this subjectivity is that, in addition to a broader system of political and social goals, she claimed the right to participate in the media and postural ecosystem of her time. This ecosystem included uncomfortable media that required physical contortions and promote moral obscenity, as mentioned in the first chapter. The bad reputation that the stereoscope enjoyed at the turn of the century, and which contributed to its media debacle with respect to cinema, may also have had something to do with the postural demands that such an uncomfortable medium imposed. We have seen how in some cases – as with the Holmes stereoscope – the medium fitted into the posture etiquette of the time precisely because its material conformation, such as the presence of a handle, suggested and encouraged a straight, elegant posture associated with upper-class spectator forms like theatre or opera.

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[182] A particularly interesting exception in this respect is MacKay, a direct student of Delsarte, but also an architect and stage designer. Mackay designed the *Spectatorium* for the 1893 Chicago World's Fair, a technological and proto-immersive theatre capable of seating up to 10,000 people. What is interesting here is the intersection between the posturological-performative focus of the stage and the possibility of designing the architecture of the spectacle. The Spectatorium was never completed due to the economic crisis of 1893.

[183] See in this regard Paul Poiret's 'war on corset.' On the issue of clothing as an expressive surface and body discipline, compare Helene E. Roberts, "The Exquisite Slave: The Role of Clothes in the Making of the Victorian Woman," *Signs* 2, no. 3 (1977): 554-69, https://www.jstor.org/stable/3173265; Norah Waugh and Judith Dolan, *Corsets and Crinolines* (1954; repr., Abingdon, Oxon; New York: Routledge, 2018); Valerie Steele, *Fashion and Eroticism* (Oxford University Press, 1985); Peter Wollen, "Fashion/Orientalism/the Body," *New Formations* (1987): 3-55; Palmer White, *Poiret* (London: Clarkson Potter, 1973).

There are devices, such as the Brewster stereoscope and the various versions of coin-operated stereoscopes, that described a very different social and postural geography. Associated with places of dubious reputation, yet as emblematic of the modern city as the passageways, such devices promoted a promiscuity not only with the image but also with the material medium. The erotic assemblages produced by the fusion of body and optical medium were likely part of the perceived threat of these new media at the time. Here, then, Baudelaire's denunciation of those "greedy eyes bent over" the stereoscopes becomes emblematic of a problem that is at once moral, optical, posturological and medial.

Posture, especially in an era that saw the birth of the modern brain sciences, "came to be understood as our unconscious psychological map of our bodies – omnipresent, yet always elusive" (Gilman 2018, 352). The ecosystem that posture activates thus becomes an important interpretive lens for encoding the unforeseen observer of stereopornography. Not only did she enact unprecedented contracts with the image – such as the forms of homoeroticism and visual empowerment analysed earlier – but she also claimed the right to occupy a series of positions in the world (moral and physical) that had previously been denied. What we want to stress here is that the erotic charge of stereopornography, especially for socially controlled subjectivities such as women, lay in the possibility of conquering an unprecedented space in the constellation of optical devices of the time. As studies such as Elizabeth Cashdan's (1998) showed us, posture still retains its very powerful performative quality in the cultural construction of gender. Therefore, questioning the various ways in which the body – female and otherwise – has been posturally disciplined in its consumption of images and media helps us to understand the techniques of such discipline and the institutions that exercise its power. At the same time, the search for forms of resistance and anarchic postural performances – such as that of *Salome* – introduces and confirms the instability of the social and bodily patterns of a given era and culture. The tension that an uncomfortable medium like the stereoscope and its physical demands impose on its observers can thus be read as an essential conceptual node. It allows us, on the one hand, to highlight the involuntary and unforeseen eroticism of various immersive devices but also, and above all, to conceive of their role in the construction of our notions of gender, its repressive devices and its expressive possibilities and techniques. What we have tried to show in these last parts is that optical

technology, its forms of interaction and immersion, fully participated in the definition of an ambiguous posturology. Ambiguity – which shares with inclination a Latin etymology referring to a serpentine movement[184] – is in this sense determined by a delicate balance between discipline and liberation, between illusion, scandal and morality. The choreography of the posture, determined by the material conformation of immersion devices and the perceptual performance of the dive into the image, cannot but induce a form of fluidised obliquity of female body figures, disciplined par excellence. This disorientation, as we have seen in the case of Delsartian techniques, is only permitted at the cost of removing all explicitly erotic connotations from the perceptual, physical and artistic performance. The sinuous inclination of Allan's posture, her onanistic kineticism and the moral condemnation that results from it are nothing less than a perfect symbol of the "price to be paid" for the full expression of female sexual independence.

In this section, we attempted to address a series of issues concerning different types of material (e.g. the stereoscope and the theatrical stage) and discursive (e.g. etiquette, deportment and gender performance) devices. This binomial, in itself inseparable from a perspective that conceives of the subject as a somatechnical amalgam, determined the intermingling of scopic regimes, gender and postures. The system that best intersects these three modes of expression and their ambiguous co-participation in the definition of disciplinary systems appears to be that of (scopic and sexual) female independence. We have seen (cf. Chapter 1.2) how the imaginative isolation of the onanist was considered a moral threat not only because of the sexual obscenity of their gestures but also, and above all, because of the determination of a completely *independent* space of images and desires, encapsulated in its phantasmatic architecture. We have seen and will see that the isolation of immersion is a rhetorical device rather than an actual technical possibility. However, by conceiving a media form as equally composed of its material parts and the discourses that feature it, we can understand pornographic stereoscopy as a materialised form of that erotic imagination for which the onanist was blamed. A threat that, in the specific case of our unforeseen female observer, can only be linked to the notion of her independence and full participation in the media (and pornographic) citizenship of her time.

[184] The Latin etymology of the term, *ambi-* ('both') and *agere* ('to drive'), retains the figuration of a winding, tortuous movement between two nuclei of meaning. It is a kind of etymology that the term shares with the archaic *ambage*, which is also closely related to the idea of a meandering (verbal) path.

Chapter 5. The Virtual Descendants: Virtual Reality Porn

> The search for descent is not the erecting of foundations:
> on the contrary, it disturbs what was previously thought immobile;
> it fragments what was thought unified;
> it shows the heterogeneity of what was imagined consistent with itself.[185]

> [I]mportant and even invaluable
> political effects can be produced by historical analyses... The problem is to
> let knowledge of the past work on the experience of the present.[186]

The legacy of the stereoscope, the unforeseen observer and the uncomfortable media has set up a long wave of postures – physical, moral and perceptual – with a complex and subterranean influence. Today, the stereoscope is often considered a "forgotten" medium, part of that large group of technological forms "defeated" by the continuous stream of emerging machines of the visible and institutional systems that determined their success. Following a methodological matrix of an archaeo/genealogical nature, one cannot but return to interrogate the present, not with the simple intention to demonstrate the *originarity* of the stereopornographic systems described but rather to highlight – in line with the conception of a *history of the present* (Foucault 1979, 130) – the profound influence of those systems that continue to *shape* the contemporary.

The attention paid so far to the connotations of stereoscopic immersive devices started, in the structure of this research, from the interest in VR technologies, understood as those audio-visual experiences concerning a specific device, the *head-mounted-display.* This technology is here considered as descendant – in a genealogical sense – of those *optical toys* that have been the protagonists of our analysis up to this point. We have seen how the stereoscopic genealogy of immersive porn has based its functioning and appeal on a double graft: the properly posturological one – the inclination as a symbolic form of

[185] Michel Foucault, "Nietzsche, genealogy, history," in *The Foucault Reader,* ed. P. Rabinow (New York: Pantheon, 1984), 82.
[186] Michel Foucault, "The Birth of Biopolitics," in *Lectures at the College de France 1978–1979* (New York: Palgrave 2008), 130.

"eccentric" eroticism and as a propaedeutic figure to the innervation with the machinic – and the quasi-intersubjectivity or parasociality with the solid entities reproduced in the image-environment. These two characteristics participate in the construction of the contemporary pornographic immersive experience and re-emerge, together with the stereoscopic device, in the most stringent present.

The recent history of these devices – which can be traced back from the 1950s[187] – could again be read as the flows of the friction of these media with postural comfort. Experimental apparatus such as those of Morton Heilig (Heilig 1955; Carlson 2007) and Charles Comeau and James Bryan at Philco Corporation (Rid 2016), as well as Sutherland's now cult technology (Sutherland 1968; Adams and Merklinghaus 2014), in fact share an extreme ergonomic complexity, as well as actual discomfort in use. Together with the subsequent developments promoted by Lanier in the late 1980s (Sturman and Zeltzer 1994; Burdea and Coiffet 2003), VR began to multiply in its technical epitheses, promoting a *virtual ecosystem* whose main purpose was to make the transport or immersion in the technical image more effective, according to the classic chiasm between hypermediation and immediacy (Bolter and Grusin 1999).

Once again, as in the case of the stereoscope, the cumbersome materiality of the devices, in this case multiplied and increasingly adherent to the epidermal surface of its user, set up a perceptual interstice that participated – precisely in its resistance to complete immersion – in the construction of the virtual experience and its para-frames.

Nintendo's experiments in the mid-1990s are entirely consistent with the uncomfortableness inherent in the desirability of the *ultimate display*. The Virtual Boy, released in 1995, was sold with its own pedestal, forcing its users to bend to the posturological demands of the device, thus contributing to the fact that "Any feelings of physical transcendence would be undermined by a sore back and shoulders" (Bown et al. 2017, 250). In the florid climate of the 1990s, the intermingling of different characteristic regarding the technologies of the virtual was emphasised. Indeed, the emergence of the internet and its communicative possibilities certainly contributed to the re-emergence of such wearable devices. We have seen, in the case of stereography, how its commercial success was determined by its interaction with photographic technology, precisely

[187] For a survey of the main evolutionary stages of wearable VR technologies, see Johnathan Bown, Elisa White, and Akshya Boopalan, "Looking for the Ultimate Display," *Boundaries of Self and Reality Online* (2017): 239-59, https://doi.org/10.1016/b978-0-12-804157-4.00012-8.

because of the principle of (apparent) indexicality it brought with it. In this archaeological case, the main fetish (in the erotic and anthropological sense) was defined, it was argued, by the solidity of the technically reproduced image. In their contemporary re-emergence,[188] these uncomfortable media exploited the commonplaces – again technical, material and discursive – pertaining to the communicative and interactive qualities of the Web. The concrete technological accomplishment of tele-presence, mentioned above for the possibility of backdating its conceptual scope, determined not only a different material conformation for devices but also their specific connotations of use. Among these connotations, the erotic-pornographic one can once again help us decode the main commonplaces of its contemporary re-emergence.

5.1 Porn Goes 360

The contemporary conformation of erotic-pornographic material for VR implements a precise system in repurposing the agentive characteristics found in stereography. Posture, quasi-inter-subjectivity with technical entities and seductive cohabitation in the architecture of the virtual environment construct a scheme for the *commercial* operation of VR porn products. A system clearly augmented by the technical possibilities that contemporary stereoscopes allow is the complete environmentalisation of the 360° image,[189] the movements of the represented subjects and the appearance of a *videal body*[190] for the user. These elements are central to the construction of the immersive gradients permitted by contemporary technologies. We will therefore see how this material and directorial conformation co-participates in the definition of a paradigm of the pornographic which, always trying to keep in tension the reasons and characteristics of the unforeseen female observer, determines consequences of a broader ideological and political conception of technically reproduced sex.

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[188] As we have briefly outlined, stereoscopic technologies have never completely disappeared but have always operated beyond the boundaries of the commercial, underlining the importance and 'long wave' of the stereoscope as a cultural form.

[189] The focus here will be on 360° video experiences. This specification is particularly relevant because it determines the friction with the desirability of operability with and in the image. In VR porn products, the environment is thus built on a spherical video surface that encloses – and constrains – its user.

[190] The preferred term here is 'videal body' rather than the classic avatar. The term gives account of the specific experience of embodiment in a body promoted by an audio-visual experience that does not go beyond three degrees of freedom (i.e. the ability to *observe* the virtual/videal world but not its possibility to be explored and inter-operated).

The beginnings of experimentation with the latest forms of VR porn are documented by commercial interest in the technology (starting with companies like Oculus between 2014-16), as we'll see with Ela Darling. Most of the pornographic products conceived for VR to date function on a form of virtual augmentation of the subgenre point of view (POV). Thus, they are limited to 180° or 360° videos rather than actual interactive environments, integrating the strong agency of the first-person shot with the visceral capacities of the body transfer process (Slater et al. 2010). VR technologies have, since their contemporary re-emergence (2014-15) (Evans 2018), defined important consequences for the mainstream pornography industry, primarily from an economic and productive point of view. These technologies have led to the re-emergence of professional porn production houses[191] – in light of the necessity of greater technical expertise and equipment – and, consequently, to the detriment of the "amateur" paradigm that, since the ubiquitous diffusion of devices with a video camera (such as smartphones), has been among the main content trends leveraged by online porn agglomerators.[192]

Furthermore, VR has led to significant consequences for the directing and compositional structure of the pornographic image. The image, no longer confined within its frame, highlights the possibilities of parasocial interaction that can be had with the subjects portrayed in a scene. This attention has been expressed in a renewed focus on performers' facial expressions and multimodal communication (environmentalised sound, eye contact, etc.) rather than on the classical hardcore display of genital action. This paradigm makes the pornographic image part of the (at least theoretically) "empathic" project of VR,[193] giving space to a hypothetical depotentiation of the processes objectifying bodies

[191] It should in fact be specified that since the spread of so-called online porn agglomerators, pornographic production companies have experienced a major crisis, brought about by the advent of amateurism, both as an aesthetic-pornographic category and as a mode of audio-visual production. In the context of VR Porn, there has therefore been a counter-trend that has seen the birth, to name the most populars, of several production houses such as: VR Bangers, VRHush, RealJamVR, VirtualRealPorn and WANKZVR.

[192] On the broad aesthetic debate on amateur pornography see: Niels van Doorn, "Keeping It Real: User-Generated Pornography, Gender Reification, and Visual Pleasure," *Convergence: The International Journal of Research into New Media Technologies* 16, no. 4 (November 2010): 411-30, https://doi.org/10.1177/1354856510375144; Renato Stella, "The Amateur Roots of Gonzo Pornography," *Porn Studies* 3, no. 4 (October 2016): 351-61, https://doi.org/10.1080/23268743.2016.1241157; Susanna Paasonen, "User-Generated Pornography Amateurs and the Ambiguity of Authenticity" in *The Routledge Companion to Media, Sex and Sexuality,* ed. Feona Attwood, Brian Mcnair, and Clarissa Smith (New York: Routledge, 2018).

[193] On the issue of empathy in VR, as will be discussed below, we refer to the extensive literature that has outlined its connotations and main rhetorical criticalities. See Andrea Pinotti "Staying Here, Being There. Bilocation, Empathy, and Self-Empathy in Virtual Reality," *Bollettino Filosofico* 37 (2022): 142-62, https://dx.doi.org/10.6093/1593-7178/9657; Robert Hassan, "Digitality, Virtual Reality and the 'Empathy

and identities of which the framed pornographic image is often accused. The environmental image of VR is thus used to project the user in the body of a performer who is both protagonist and recorder of the sexual action. VR in pornography unframes the image but imposes on its user an epidermal perimeter, a far more limiting and challenging virtual scaffold due to its social and identity luggage. The bodies imposed by most pornographic content in VR are male and heterosexual ones, thus encoding a problematic form of the *virtual male gaze* (Evans 2018). While some theoretical positions are enthusiastic about the supposedly empathic possibilities of virtual pornography (Rubin 2018), in the current state, VR seems to "create a sense of altered and enforced intimacy" (Evans 2018, 4). This dichotomy, the one between empathic potentialities and altered pornographic experiences, is not easy to solve and requires a deeper understanding of how the perceptive process of virtual images works, along with a formulation of more specific critical frameworks.

VR technologies produce a symbiotic relationship with its user and the images they create. This symbiosis is generated through a specific localisation of the environmental image in the complex visual and bodily perceptual process of its user. The intertwining of proprioception, vision and body (at the core of VR functioning) is regulated by at least two concepts that can be described by the notions of "movement-vision" and "viscerality." Following Brian Massumi (2002), the movement-vision "is sight turned proprioceptive, the eyes reabsorbed into the flesh through a black hole in the geometry of empirical space" (59). Massumi's lexicon, which recalls the notion of perceptual invagination as explained by Merleau-Ponty (1945, 152), states, on the one hand, that movement-vision is integrated into proprioceptive systems, the kind of non-externalised perception that does not relate to a subject-object but constitutes prenoetic knowledge, a pre-symbolic and pre-verbal comprehension of the world. On the other hand, the particularity of movement-vision defines a specific proprioceptive moment, that of the perception – both corporeal and visual – of one's own body in movement. The movement-vision extracts qualitative elements from the movement itself and from the necessary and constant relationality that it imposes. As a form of kinetic proprioception, movement-

Machine,'" *Digital Journalism*, January 2, 2019, 1-18, https://doi.org/10.1080/21670811.2018.1517604; Grant Bollmer, "Empathy Machines," *Media International Australia* 165, no. 1 (August 24, 2017): 63-76, https://doi.org/10.1177/1329878x17726794; Lisa Nakamura, "Feeling Good about Feeling Bad: Virtuous Virtual Reality and the Automation of Racial Empathy," *Journal of Visual Culture* 19, no. 1 (April 2020): 47-64, https://doi.org/10.1177/1470412920906259.

vision describes one of the main elements that makes the environmental image of VR particularly effective on the perceptual level of its user. However, VR destabilises the spatial and architectural fixity of the framed image, imposing a constant perspective movement. This movement is further disoriented by the screen nature of VR, in the sense that it occludes the gaze from the proprioception of the body in motion.

The adherence of VR to the body of its user implies a necessary visceral stimulation. The environmental image, especially if associated with pornographic content, can constitute a renewed and enhanced form of the *body genre*, opening up new interpretative necessities in the context of film theory. The ability of the environmental image to locate itself in the perceptive interstices between movement-vision and viscerality makes it particularly effective in generating experiential forms that determine a renewed perspective towards our body. If this image is associated with the peculiar carnal characteristics of pornographic content, it could determine important, though ambiguous, forms of subjectification through the image, aimed at disrupting, deconstructing and reconstructing the perception of our gendered biocultural features. As a *symbiotic medium,* VR has the capacity to both colonise and enhance our body positioning in the environment. From a biological-perceptive and socio-political points of view, the symbiotic medium appears locked in an interdependency with the user. Going beyond the prosthetic perspective of cyber-integration typically found in much posthumanist literature (Haraway 1991), the concept of the symbiotic medium allows more theoretical precision regarding specific technologies but also a greater critical confidence. The definition of the symbiotic medium proposed here describes the type of contemporary medium that, like VR, requires a constant connection to its user's body and a broader network of online data. To clarify the non-anthropocentric perspective of symbiotic media, it is helpful to recall once again the process that Vilém Flusser (2014) describes as epithesis. If the human expands their innervated network in the technical objects they use, the concept of epithesis, the counterpart to prosthesis, describes the opposite dynamic, whereby each medium inscribes in the human a return innervation, a technical "counterattack."[194] The symbiotic meaning proposed here is intended to emphasise the

[194] Cf. Francesco Restuccia, *Il contrattacco delle immagini. Tecnica, media e idolatria a partire da Vilém Flusser* (Milan: Meltemi, 2021).

bi-univocal mechanisms underlying every medial relationship and inscribe them on a broader network of gestures, online data and identities.

In their relationship with the user's body and the online context, symbiotic media can encode a double kind of bond: on the one hand, a *mutualistic* one that describes a form of increase of those technologies of the self, aimed at greater agency regarding the processes of subjectification, and on the other, following the biological metaphor, symbiotic media can constitute a *parasitic* relationship with their user. In this case, the user embodies the host subject, allowing the survival of the parasitic medium. It is, in fact, essential to keep in mind that to function properly, VR requires the constant collection of data of nonverbal behaviours. This process emphasises the parasitic dynamic that a symbiotic medium may constitute and can raise critical issues regarding VR privacy policies and the capitalising parasitism of its users' bodily and affective dimensions. Some have even spoken of a *pornopticon* (Tzillas 2018), the blending of the panoptic surveillance system and the complex body and data systems of online pornography. When applied to the realm of online pornography, the term "pornopticon" suggests a system where individuals engage in sexual activities under the constant gaze of online platforms and data collectors[195]. In this context, VR technology, such as the Oculus devices owned by Meta, could indeed serve as a tool for this form of control. The ownership of the hardware by Meta means that the company potentially has access to vast amounts of data on users' interactions with pornography. Moreover, VR technology, by its very nature, collects intimate data about users, including their movements, attention and physiological responses. VR headsets' direct contact with users' bodies allows for the collection of even more nuanced data, such as posture and eye movements.[196]

As we have seen in this initial description of pornographic VR, much of its erotic appeal and rhetorical communication is based on the embodiment of a *videal* body with specific

[195] On the issue cf: Elena Maris, Timothy Libert, and Jennifer R Henrichsen, "Tracking Sex: The Implications of Widespread Sexual Data Leakage and Tracking on Porn Websites," *New Media & Society* 22, no. 11 (October 4, 2020): 2018-38, https://doi.org/10.1177/1461444820924632; Ilir Rama et al., "The Platformization of Gender and Sexual Identities: An Algorithmic Analysis of Pornhub," *Porn Studies* 10, no. 2 (May 24, 2022): 1–20, https://doi.org/10.1080/23268743.2022.2066566; Rebecca Saunders, "Sex Tech, Sexual Data and Materiality," *Porn Studies* 10, no. 2 (April 3, 2023): 120–34, https://doi.org/10.1080/23268743.2023.2194320.

[196] On the interaction between data mining and VR, see Jeremy Bailenson, "Protecting Nonverbal Data Tracked in Virtual Reality," *JAMA Pediatrics* 172, no. 10 (October 1, 2018): 905, https://doi.org/10.1001/jamapediatrics.2018.1909; Mark Roman Miller et al., "Personal Identifiability of User Tracking Data During Observation of 360-Degree VR Video," *Scientific Reports* 10, no. 1 (October 15, 2020), https://doi.org/10.1038/s41598-020-74486-y.

and stereotypically reinforced gendered characteristics. This aspect implies a necessary understanding of the possible effects and potentialities of such experiences, even beyond the pornographic regime. The behavioural sciences have started to investigate the possible implications of VR images on the presentation and perception of the gendered self. To be more precise in the analysis of VR images' agency, it is necessary to first make a distinction between what we will call here "social VR" and "simulation," or video VR. The first case refers to those virtual environments conceived for social interaction through avatars. The avatarsisation of one's own body and its stereotypical features, especially linked to gender, is, as can be imagined, a pivotal element in understanding the performative possibilities of the environmental image, particularly in the erotic interactions it allows. Social VR (such as VRChat and vTime XR)[197] is therefore among the main terrains where the virtualised body can manifest its expressive potential.

One of the most interesting and frequently registered phenomena in social VR is the *Proteus effect* (Yee and Bailenson 2007). The Proteus effect defines a precise and rapid behavioural change based on the virtual appearance that a user decides to compose to present themselves to a digital social group. The Proteus effect is inevitably very much influenced by gendered stereotypical features and, in the case of social relations in VR, is further enhanced by the bodily involvement that the environmental image allows, especially if combined with full-body tracking technologies. Social VR contexts problematise the influence of environmental images on gender subjectification, confirming, at least in the current state, a precise reproduction of the binary and normative paradigms of concrete reality.[198]

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[197] Social VR platforms, often linked to other software and social media such as meta, are an important field of investigation for the construction of the virtual self – through avatarisation – and social relations in the environmental image, in this case fully inhabitable and interoperable. In this context, it is particularly relevant to note the expressive possibilities of queer experimentation, as well as the binary and harassment issues involved in these symbolic spaces. Cf. Dylan Paré et al., "Queering Virtual Reality: A Prolegomenon," *Advances in STEM Education*, 2019, 307–28, https://doi.org/10.1007/978-3-030-29489-2_17; Lindsay Blackwell et al., "Harassment in Social Virtual Reality," *Proceedings of the ACM on Human-Computer Interaction* 3, no. CSCW (November 7, 2019): 1–25, https://doi.org/10.1145/3359202.

[198] Ambiguities confirmed by participants in an experimental study in social VR 'demonstrated different perspectives of their gendered presentations and the resulting social interaction dynamics. Some suggested taking advantage of the gendered aspect of self-presentation to seek more attentive, positive, and friendly social interactions. Some paid attention to the higher risk of harassment. And some others noted the tension between traditional gender roles and the increasing demand for appropriately presenting transgender or any non-normative gender identity and/or sexual identity' (Freeman and Maloney 2021, 14). These results pose new challenges regarding, first and foremost, the materiality of the virtual social world and the need for greater inclusiveness in terms of the representative possibilities of non-conforming bodies, which to date have been excluded even in the virtual context in favour of a more socially performative gender binarism.

If social VR turns out to be a field of important potentiality regarding the role of the environmental image in relation to the construction of the identity and body, we have chosen here to focus on simulation or video VR fruition typologies. Simulation or video VR describe the virtual experiences characterised by the transfer of the user to a closed environmental image, where the intra-user interaction is reduced to a minimum or absent. The emphasis on simulation or video VR stems mainly from the fact that it engages a perceptive model much closer to the current functioning of pornography in VR. VR porn creates a setting in which the intersubjective relationship is completely excluded, if not for the symbolic one with the subjects portrayed in the image itself. The imposition, in a projective sense, of a predetermined body constitutes an object of research that is particularly suitable for highlighting VR images' characteristics, remaining much more coherent to the commercial experience of mainstream VR pornography and its stereoscopic genealogies.

In a comparative effort, it could be helpful to report some results from behavioural experiments, focused on simulation or video VR's consequences for gender identity and stereotypes. In a reenactment of the body transfer experiment as conceived by Slater (2010), some researchers (Tacikowski et al. 2020) analysed the consequences on the gendered perception of an illusory gender-flip in VR. The study aimed to create a strong sense of *body ownership* in the subjects, that feeling of proprioceptive congruence between one's own biological body and the virtual reproduced corporeality. Body ownership was further problematised by switching, still in a binary system, the gendered features of the virtual body and then asking the subjects to scale how masculine or feminine they felt after the body-sex change illusion to "test whether the perception of own body affects gender-related beliefs about own personality and [...] how much different traits, stereotypically related to males and females, pertain to their own personality" (Tacikowski et al. 2020, n.p.). Among the elements that stand out, the study outlined that:

> [A] perceptual illusion of having the opposite-sex body is associated with a shift towards a more balanced identification with both genders and less gender-stereotypical beliefs about own personality characteristics, as indicated by subjective reports and implicit behavioural measures. (Tacikowski et al. 2020, n.p.)

The experimental situation, certainly problematic from some points of view,[199] confirmed the potential of the environmental image to queer, deconstruct and reassemble those processes that co-participate in the cultural and somatic formation of our gendered self.

What, then, can we learn from these experimental findings about the potential of pornographic environmental images? It is certainly well known that the image, in its framed nature, is an important vehicle for the performative setting of the various bodily and cultural features of our embodied subjects. The constitution of the cultural, visual or cinematographic *imaginary* has always shaped our perceptual expectations and behavioural settings in various social groups. Among such images, the subterranean role of pornography has often parasitised and directed, with particular effectiveness, the representational trends of bodies and identities.

However, what could be striking about VR pornography is the hypothetical realisation of an increasingly coherent form of somatechnical image. If we synthesise the theoretical paradigms discussed so far (the symbiotic functioning of the environmental image and its role on behavioural and proprioceptive modifications), the VR device begins to delineate itself more precisely, in a Foucauldian perspective, as a possible *technology* of the self (Fouacult 1988).

If it is therefore clear that the environmental image has a high degree of potentiality in relation to our perceived body, it remains to clarify, in a more structured way, the performative possibilities that these images allow in relation to our gender. The experiments mentioned above confirm the hypothesis of an experience that, at least in the short term, can encode encouraging social consequences. However, in expanding the field of research to broader theories on gendered performativity, we still need to understand what position the environmental image can occupy, especially in conjunction with experiences that, like pornography, have so much to do with the performative phenomenalisation of our gendered (as well as sexualised) bodies.

The field of performative gender theory can provide not only the most correct theoretical framework but also interesting methodological tools to approach the pornographic environmental image. A first dutiful distinction, necessary for the correct analysis of the

[199] Although the experiment is fully aware of the standardisation of a gender binary model, the setting might still raise concerns in this regard. Indeed, one wonders whether, even in experimental terms, one might reflect on discursive paradigms of broader scope than gender binarism, which could help reproduce and induce normative paradigms in the subjects involved.

interlacing between environmental images and gendered identities, is that between performance and performativity. If the environmental image allows, as we have seen and on different levels, a chance for new *performance strategies* in its user, it is the image itself that holds *performative* power. As stated by Judith Butler (1990; 1993) gender is a performative category and not (only) a cultural performance. Butler's theory postulates that gender is performative insofar as it structures the discourse that allows subjects to express linguistic acts and thus enables them to perform material actions (Butler 1989; 1990).

The distinction between performance and performativity is particularly important in understanding the role that, in light of its specific functioning, the environmental image can play with respect to the (heterosexual) matrix that regulates our gender performances. Butler's "discourse order" clearly refers to a normative system, in the sense that, like any norm, it is constituted over time by the reiteration (linguistic, in Butler's case) of a given act. Therefore, if we link, in its functioning, linguistic reiteration with that of the image, we begin to understand its normative power and agency beyond its direct influences on the body of its user. To comprehend its broader, and lasting, social consequences, the paradigm of image reiteration seems particularly effective in describing the ways in which mainstream pornographies have functioned simultaneously as instruments of the constitution and disruption of gender norms through repetition. The pornographic "genre" is, in its mainstream and commercial expressions, often characterised by a precise and voluntary reiteration of photographic, directorial and performative elements. Although it is necessary to specify that the pornographic universe is in itself boundless and irreducible to a common determiner, current mainstream hardcore productions, of which VR porn turns out to be an augmented remediation, are certainly limited in their para-narrative syntax. This reiterative form imposes the understanding of what kind of norm its reiteration shapes. Therefore, it remains to be grasped whether the pornographic environmental image, in light of the symbiotic dynamics mentioned, can constitute a tool of performative reiteration (in a normative sense) or a possible "disorientation device," as outlined in the first chapter. Is it possible to conceive VR pornography as a visual dispositive able to queer our stereotypically formed grids about gendered identities?

The environmental image generates a virtual space – in its double meaning of technical simulation and architecture of the potential – but its possibilities of disorientation are not

limited to the superimposition of a different body to one's own in an image, if only because the body, in its complex biocultural assemblage, is only minimally defined by those epidermal and visually reproducible features. Instead, what best defines the complex relationship between the virtual body and environmental image is the disorientation that this relationship produces. If the environmental image, as empirically demonstrated, can generate an experience so powerful to constitute moments of body ownership, what can create lasting consequences for its user is instead the experimentation of that "pleasure of deviation," which, in the case of VR, is situated between the antinomic poles of abandoning oneself to the perceptive illusion and the awareness of mediation. This aspect, apparently detached from influences on the gendered constitution of our identity, instead proposes moments in which the fluidity of our body-becoming process acquires particularly evident features, also confirming the co-constitutive and non-consequential interweaving between the biological body and its cultural features.

The first-person shot[200] of the pornographic environmental image owes its effectiveness not only to its ability to put us in someone else's shoes (or in someone else's body and genitals) but rather in that enjoyment of living a symbolic space, that of the subjective, never completely congruent to one's own perceptive conformation. Therefore, this system of deviation does not function as a mere experiential substitution but as a process of externalisation into the image of those imaginative (but still imposed) forms at the basis of a fluidified and "deviant" perception of our gendered self. Remaining in a binary context, "wearing" a virtual female or male body cannot automatically constitute a concrete experience of that body because, as Butler states,[201] gender is not a piece of clothing with which we dress and undress. The uncanny possibility, in a Freudian sense, that pornographic images in VR allows opens up new potentials regarding the triangulation between image, body and gendered features. While this capacity determines

[200] On the symbolic functioning of the first-person shot, see Ruggero Eugeni, "The First Person Shot as Symbolic Form: The Devices of Subjectivity in the Postcinematic Landscape," *Reti, Saperi, Linguaggi* 2, no. 2 (2013), 19-23.

[201] "There is a bad reading, which unfortunately is the most popular one. The bad reading goes something like this: I can get up in the morning, look in my closet, and decide which gender I want to be today. I can take out a piece of clothing and change my gender, stylize it, and then that evening I can change it again and be something radically other, so that what you get is something like the commodification of gender, and the understanding of taking on a gender as a kind of consumerism." Judith Butler, 'The Body You Want: Interview with Liz Kotz,' *Artforum* (Nov. 1992): 82-89, https://www.artforum.com/print/199209/the-body-you-want-an-inteview-with-judith-butler-33505.

an important interpretive key to defining the general relationship between the perceptual and symbolic self in the environmental image, it is, in its conjunction with sexually active content, VR that most effectively unleashes its functioning in relation to bodily and gendered proprioception.

VR pornography constitutes neither an immediate sexual experience with another subject nor the embodying of another corporeality; instead, it signifies the image realisation of how one's own body is constituted by a constantly changing cluster of elements (somatic and technological) that the pornographic virtual image "excites." This process, in line with Hansen (2006), confirms that new digital and virtual media, rather than assisting a form of abstraction and sublimation from the body, base their effectiveness on its integration as a new or surrogate frame for environmental images.

What pornography in VR emphasises, in relation to the renewed status of the image becoming an environment, is the still undefined role of what the image excludes. If a framed image (moving or not) is architecturally sustained by the visual and semiotic scaffolding of its perimeter, the environmental image stimulates in an unprecedented way what is external from it. The screen of VR devices eliminates from view one's own body, and it does not constitute an effective oneiric transfer into an environment in which perceptual and multisensory functions are perfectly simulated and reproduced; VR experiences are never completely immediate. What a theory of VR must take into account, and what VR pornographies teach us, is that the immersion in the image, a successful rhetorical paradigm, often remains a metaphorical expedient. VR users' experiences are, on the one hand, unprotected by the framed perimeter and, on the other (at least for now), not entirely absorbed by the immediate virtual environment.

What we want to stress here, and what can perhaps explain more coherently the long-term effects of phenomena such as those found in the experiments aforementioned, is that the environmental image builds a disorienting perceptual system, in the sense that it inevitably distorts the congruence between the concrete body and the virtual/videal corporeality. It is in this gap that VR can rediscover a pharmakon against the empathic rhetoric and, above all, a more precise understanding of what it means to immerse oneself in the erotic image, in all its frictions with complete transfer in the virtual environment.

5.2 The Postures of the Videal Body

As we have seen, the nineteenth-century stereoscope promoted precise demands on its observers. The material conformation of contemporary VR head-mounted displays recalls the same kind of observation, albeit with different declinations. The VR helmet is a symbiotic medium that adapts to its user in a profound way by determining wearability, albeit often uncomfortable at this moment. The posturological prescription of VR, in contrast to the stereoscope, works with less force because of the apparent freedom of movement and operability in the image that VR allows. In the specific case of VR pornography, the postural demands of the medium are translated into the cinematic architecture of the 360° video. In the image, the user is forced, concretely or proprioceptively, to perform a postural choreography that adapts to the imposed video body. This movement – virtual and concrete – not only defines one of those interstices of immersion that serve as a para-frame for the erotic an-icon but also constructs a precise commonplace of pornography in VR. As anticipated, it requires the inhabitation of a video body with precise characteristics. For technical reasons, the body must be as immobile as possible, both to avoid the motion sickness typically brought on by the device and to allow the greatest possible embodiment of the video body surface. The immobility of this body, however, has specific consequences for the user's experience and, more generally, for the status of the pornographic immersive image. The pornographic POV is certainly not something new; early erotic-pornographic cinema already set up this kind of scopic movement that exploited the same system and the desire for incorporation.[202] VR adds a bodily form – a rigid, immobile and, one might add, cadaverous body – to this movement in the image while imposing a para-frame in which the user is trapped. The connection between VR, autopsy (Modena and Pinotti 2020)[203] and death (Conte 2021) has already been investigated, and virtual porn seems to provide a new and literal expression of this kind of metaphor. Virtual pornography implies, in its directorial structure, a form of "corpsification": the performer, and thus the user of VR

[202] In the pornographic sphere, Williams (1995) points out how the earliest forms of pornographic POV already in the 1950s involved exactly this form of embodiment between the somatic and the machinic.
[203] In Pinotti and Modena, the term 'autopsy' is related to its Greek etymology and refers to the rhetorical problem that describes the need to see a given (possibly humanitarian) scenario with one's own eyes to elicit an empathetic response.

porn, becomes a *cadavre amoureux*[204] in the sense that they are forced to inhabit an immobile body that is sexually manipulated by the other actors on stage. However, the contemporary attempt to recreate an erotic multisensory environment has resulted in the exact opposite, constructing a perceptive individual who is subjugated and trapped in their virtual body, recalling that idea of the body (soma) as a tomb (sema), which is typical of the Platonic tradition. Embodying an immobile and manipulable entity thus seems to impose the need to consider the agency of parasocial or quasi-inter-subjective relations with the other protagonists of the virtual pornographic architecture. The subjectivity of the VR pornographic POV is close to that of a sexual "object." However, the term is not meant to monolithically conclude that VR pornography promotes a form of *objectification* in the strict and social sense. Rather, the intention is to consider the appeal of incorporating the inorganic – in this case, the machinic. Objectification is thus afferent to a modality that prescribes a double movement: that of making oneself an immobile object – a slave, in the jargon of Merleau-Ponty's erotic phenomenology – but also that of making oneself a machine (of the visible). Interesting points to consider in this regard are the techniques used in the making of 360° porn. To make it easier for actors to perform, VRBanger – one of the most important VR porn production houses – used a stereoscopic camera in the shape of a human face (fig. 52) to create an audio-video

[204] See Pietro Conte and Roberto Paolo Malaspina, *Les cadavres amoureux*: *Sex and Death in Multisensory (Utopian) Virtual Systems*, forthcoming. The term, proposed by Pietro Conte, refers to Guillaume Apollinaire's 1916 short story 'Le Roi-Lune (The Moon King),' in which the protagonist discovers a technological device that can dissect a section of spacetime and link it to an episode in the past when historical figures were engaged in sexual acts. The adventurers were thus able to manipulate the emerging bodies at will and satisfy any sexual desires with them, calling them cadavre amoureux.

recording that is more congruent with the perspective of the person wearing the headset.

Figure 52. Stereoscopic face camera used by VRBanger in the production of a VR porn video (2017).

On the one hand, this device recalls the old association between technical and human apparatuses, typical, as we have seen, of the rhetoric and marketing of photography and stereography in as early as the nineteenth century. On the other hand, it gives us a clue to better decode the erotic transplantation of this form of embodiment. As in the case of the *Elephans Photographicus* (cf. 1.2), these somatechnical assemblages tell us about the erotic fascination with the intersection, innervation and symbiosis with technical apparatuses. Sexuality and pornography as technologies of the self are areas of investigation with extensive bibliographies and critical fortunes (Preciado 2008; Paasonen 2009; Sullivan and McKee 2015; Keilty 2016). However, this research is interested in how immersion in a device highlights its conceptual and erotic power. The idea of being not someone but something – a machine of the visible – seems to confirm the extremely nuanced nature of erotic and pornographic desire, always interrelated and constructed through a complex biosomatic assemblage.

This requires us to understand the movements of this somatechnical desire. In this regard, Wang (2021) adopts a Lacanian perspective and describes this model as a kind of "passivity" of vision and, more generally, of multisensory perception. Wang's

perspective – which resonates with our understanding of the disorientation device (Ahmed 2006 b) as a medial form – helps us to look more closely at the processes at work in immersive porn, beyond a myopic interpretation related to sexual objectification. Wang's main thesis, as we have seen in relation to the device's genealogy, again starts from the concept of distance:

> The defining characteristic of pornography in Virtual Reality is its ability to bring the viewing subject closer. By bringing the subject closer to the image, it breaks up rather than continues the mode of eroticism sustained by narcissistic identification in conventional 2D porn. (Wang 2021, 229-230)

Proximity to the device, and therefore to the image-environment, deconstructs the narcissistic processes – or rather their interpretations as such – understood as a projective and identifying movement towards technically reproduced subjectivity. We argue here that Paasonen's (2011) essential contributions to the resonant processes at work in the viewing of online porn have already contributed to the deconstruction of the Freudian identification/projection model. However, VR porn seems to oppose to the deconstruction of the projective interpretive system: the embodiment of a pornographic subject, the wearing of its soma-technological head, seems to induce an easy interpretation of a projective nature. If the efficacy of porn works on identification, what better ally than a device that facilitates this movement? This scopic path of desire, certainly seductive in its logical simplicity, should always be kept in mind when analysing the *rhetorical* and marketing qualities of the VR porn product. However, the more subtle functioning of virtual technology in the erotic sphere entails essential considerations; the *limits* imposed by the technology, still far from an effective multisensory transportation to the virtual environment, forces us to consider the resistances, interstices and para-frameworks of VR immersivity. The *cadavres amoureux*, the videal body, certainly participates in this friction and seems to break rather than emphasise the projective model.

This rupture, according to Wang, is due to the bodily and agential delegation that VR pornography requires to be erotically effective. The passivity of the immersive pornographic experience produces observers who are involved in a double process: they consciously invest their incorporation in an imposed body, the video body, and at the same time, they act on their concrete body – through postural performance and genital

stimulation, which are always included in the pornographic experience in different ways. This oscillation between action and abandonment thus moves away from inter-passivity (Pfaller 2014; Žižek 1998; 1999), understood as the outsourcing of the perceptive process to the object of perception.[205] Rather, the viewer of VR porn is involved in various actions, scopically and bodily, which nevertheless find the core of the erotic pleasure of the experience in the conscious surrender to the optical illusion:

> VR pornographic spectatorship is about one's voluntary surrender not only to the hypnotic seduction of the image but also to the out-of-jointedness of the corporeal that undoes and displaces the subject in the symbolic reproduction of desire. (Wang 2021, 230)

Indeed, Wang's perspective seems to resonate with the *disorientation* inherent in the gendered and sexual experience of immersive virtual incorporation that we discussed earlier. This line of analysis thus allows us to hold interpretative models in tension with respect to the movements of desire inherent in VR pornography. These movements require constant interrogation in terms of their disciplinary and objectifying qualities, but they must also necessarily consider the broader somatechnical implications at work in the incorporation of the inorganic, as in the case of the proprioceptive congruence not only between the concrete and videal body but also between the concrete and the machinic. VR porn is a highly *limited* immersive experience compared to the rhetorical will that promotes its characteristics. The experience of contemporary pornography (immersive and non-immersive), which, as we have said, tends towards the most *economic* form of production, finding in its limitations a point of strong theoretical interest that leads us to understand its specific language. Melendez (2004), in his analysis of mainstream pornographic products, notes how the acme of erotic efficacy is produced precisely "when their aesthetic reaches that critical point of materiality, mimicking bodily pleasure at the cost of exposing the very limitations of the medium" (419). This critical point of

[205] As in the case of the sitcom audience and the fake laughter that replaces personal laughter, the artist who consumes his sandwich as a surrogate, the Xerox machine that reads texts on behalf of the user, the Tibetan prayer mill that performs prayers on behalf of the individual, the VCR that performs television viewing duties and the curator who analyses or contemplates exhibitions in order to alleviate such duties for others, these examples illustrate the phenomenon of technologies and cultural artefacts taking over or augmenting human functions (Pfaller 2002, 26-41; Žižek 1997, 109-112).

materiality, which closely recalls Barthes' concept of the punctum – locating it in the technical specificity of the video-pornographic medium – finds its correlation in the technical limitations of VR porn. If the pornographic is always an experience of friction between represented bodies, concrete bodies and media materiality, the VR helmet, its postural performances and the described motions of abandonment and objectification can only define the chiasm of movements and desires that determine its fascination and effectiveness. What we want to emphasise here, as in the case of the stereoscopic genealogy, are the processes that the observer enacts in opposition to the mediated experience and its imperatives. We have seen how the uncomfortable media are characterised by precise demands – postural and moral – that they make of their user. Yet, it is precisely in view of these requirements that the latter put in place systems that extract pleasure from the discomfort and physiological engagement that these media forms demand. The infusion of life into stereoscopic person-objects, as well as the conscious surrender to the pleasures of the static video body, are strategies of resistance; they are conscious and unforeseen frictions that the viewer imposes on the image and the experience of mediation to extract an erotic pleasure that always combines the sexual and the inorganic, the virtual and the machinic.

5.3 *Virtual Sexology*: The Hygienic Feature of Virtual Reality Porn

> Whenever I try a new technology,
> I have two questions: how can I fuck with it,
> and how can people watch someone fuck with it?[206]

In our genealogical path, we considered a precise figure of stereoscopic pornographic fruition: that of the unforeseen female observer. A character with speculative traits, she helped us to define the characteristics of the discipline and the spectatorial agency of the female figure in the second half of the nineteenth century in relation to the "new" optical media of her time. Again, the methodological origin of the interest in this figure comes from a contemporary problem: the binary insistence of the rhetoric on the female

[206] Ela Darling, TedTalk, 2017, 6.50 https://www.youtube.com/watch?v=l9HpC65Pfz4andab_channel=TEDxTalks]

spectatorship of the pornographic. Specifically, we ask what kind of transfer does it have in the context of VR pornography? What can the rhetorical and directorial conformation of VR porn products tell us about broader systems of engendering sexual experience?

A useful perspective for understanding the intersection of these cases is provided by Ela Darling, one of the early protagonists, performers and entrepreneurs of VR porn. Darling came across VR in 2013 and immediately understood its potential for the pornographic industry (Jennings 2017). In 2014, she founded VRTube.xxx, one of the first platforms for VR pornographic material. The company created prerecorded videos and environmental live cams. This last sector, one of Darling's most successful, would lead to the subsequent agreement with the livestreaming platform Cam4, creating the dedicated platform Cam4VR. The style of Darling's products conveys a clear and acute awareness of the issues at stake. In the videos on VRTube.xxx – a platform that is no longer accessible – Darling did not propose any form of incorporation for the users: "I don't want to incorporate a corporal avatar into our experience until that can be something that the user gets to completely customise on their own" (Alptraum 2016, n.p.). As we have seen, the later VR porn industry will not follow this path. Darling's system should also be analysed for its rhetorical qualities. We have seen how the discursiveness associated with a media form, like its material conformation, helps to determine its identity. In a 2017 TedTalk, Darling recounts her avant-garde experience with VR porn. A number of commonplaces can be extracted from the talk, which are particularly important in fully understanding the rhetorical and metaphorical identity of the medium. First, Darling describes VR according to a classical conception of multisensory transport, conceiving it as a "transportive immersive experience where you can be anywhere in the world, you can try new things, explore experiences [...] from the comfort of your home" (Darling 2017, 6.30–6.34). The extensive and cross-disciplinary literature on this form of interpretation of the medium (Soave et al. 2021; Lombard 2015) and its criticalities (Nakamura 2020) finds in the pornographic a further conceptual specification. Indeed, in the same talk, Darling goes on to describe her technological experiments and the launch of the livestreaming platform. The rhetorical point that seems particularly relevant in this case, and which, as we shall see, will establish an important commonplace of female spectatorship in VR porn, is related to the *therapeutic* qualities of the immersive

experience. In describing the intersubjectivity made possible by immersion in the device, Darling states the following:

> While we were making adult content, the most compelling aspect of it wasn't sexual at all; it was the ability to make someone feel less lonely [...]. It's far more of a *therapeutic medium* then anything sexual. (Darling 2017, 12.43–12.50)

The concept of VR as a therapeutic medium – in a psychological and prosocial sense – has been extensively analysed and is associated with a large body of literature (Emmelkamp and Meyerbröker 2021; Kelson et al. 2021; Wiebe et al. 2022; Freeman et al. 2022). However, the link between pornography, sexuality and therapy requires more careful and specific consideration. On the one hand, this triangulation could be read as part of the Foucauldian *scientia sexualis* (cf. Chapter 2.1), multiplying the kaleidoscopic discourses *on* sex and its technical reproductions. This line of thought, as is well known (Williams 1989), seems to explain the fetishistic graft of early film pornography. However, the system we wish to highlight here is not the simple analytical medicalisation of pornography but rather its defusal in favour of a seemingly prosocial interpretation that inscribes it within broader technologies of the self and individual *wellbeing*. This chiasmus certainly linked to genuine social projects and could be connected to the specific history of political radicalism carried out by post-pornography.[207] The association between VR pornography and "therapy," however, activates further questions that find an important genealogical link in the unforeseen observer and her postures.

Indeed, the contorted bodies of the Delsartian figures produced an apparent liberation and social empowerment only at the expense of the erotic charge that such postures performed. Similarly, contemporary pornographic VR aimed at female audiences is associated with a process of systematic *hygienisation* of the pornographic. The term is used here to refer to the whole apparatus of elements and practices related to sex that add layers of discursiveness aimed at attenuating and socio-morally justifying the

[207] However, the context, methods and means of production are largely different. Although not reducible to a single object of analysis, here, we refer to the precise context of the early post-pornographic movements (Sprinkle 1998; 2006). This reference is justified by the fact that these movements and productions maintained a clear reference to sexual health and education in an era marked by the height of the HIV/AIDS pandemic. The North American post-pornographic context is also focused on a precise re-appropriation of audio-visual means of production.

pornographic desire of female observers. This aspect, in line with the genealogy expressed in the previous chapters, speaks of the same stereotypical core: the female spectator must attenuate the erotic-pornographic charge of her desire to participate in the scopic economy of technically reproduced sex. This process finds an important conceptual and material ally in immersive VR technologies – a union evidenced by the exploitation of the rhetorical characteristics of empathy with which VR is often associated. This pornographic empathy promises, as we have already noted, to defuse the objectifying process of mainstream pornography. Behind such rhetoric, however, a commonplace of female sexuality creeps in: to express itself, it must head towards a conceptual *elsewhere* that justifies its experience.

We have mentioned that the displacement of pre-pornographic visual products – that is to say those which, by cloaking themselves in an iconographic elsewhere (e.g. the oriental, mythical and parodic), attenuate their charge of obscenity. According to the same principle, much of the rhetoric regarding contemporary pornography devoted to female subjectivities is covered in the same discursive fabric. The association with the therapeutic context is a particularly fortunate topos that expresses exactly this movement towards the sanitisation of "dirty" sexual desire. A particularly significant example of this trend can be found in several pornographic products that use the rhetorically empathic qualities of VR to promote such experiences. This is the case with the 360 *Virtual Sexology* film series produced by BaDoinkVR. The title is a perfect introduction to the semantics of the experience. Using the features of VR, this pornographic product constructs a form of erotic sexology, promoting practices, postures and dialogues to educate users with the aim of increasing sexual pleasure among couples. The product, more of a multimedia project than a simple series of videos, is strongly gendered. According to its dedicated website (fig. 53), *Virtual Sexology* is "an exploration of the uniquely feminine aspects of desire and pleasure." Following the motto "What Women Want," the two films that make up the series offer a real "sex education."

The aims of the experience are well described and include a number of features that are summarised in a series of slogans that accompany the videos:

1. Interactive Sex Education: Learn how to become a better lover and improve your sex life in the comfort of your own home

2. For Women, By Women: Designed specifically for women – developed and produced by women

3. Proven Techniques: Utilise proven methods to discover your desires, as well as stimulate your senses

4. Designed by Experts: Developed and written in conjunction with Somatic Psychologist and AASECT Certified Sex Therapist Dr. Holly Richmond, PhD

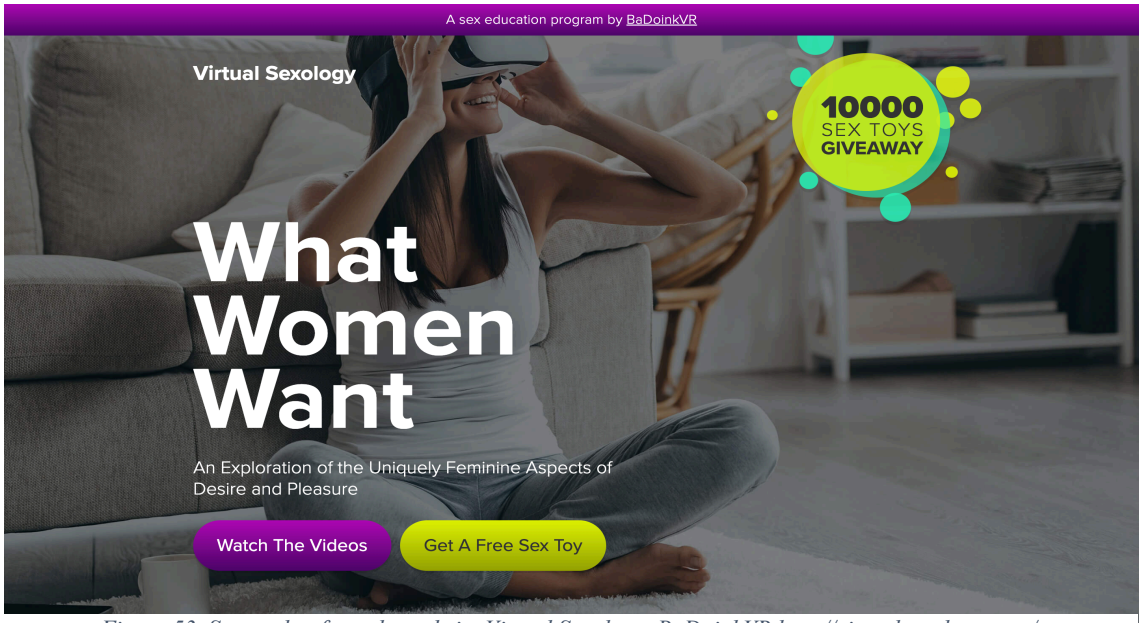

Figure 53. Screenshot from the website Virtual Sexology, BaDoinkVR http://virtualsexology.com/.

A number of rhetorical elements help us to best encode the discourse of sexual sanitisation brought about by pornographic VR. Virtual sexology communicates itself as a form of education (Point 1), simultaneously leveraging the pornographic topos of teaching and an effective desire for edutainment. These products are therefore immediately associated with the female audience, which is confirmed by sex experts who are supposedly involved in the production of the videos. The therapeutic form of the immersive pornographic is thus exploited for its seemingly greater appeal, as it is not explicitly hardcore in its rhetorical intentions. Virtual sexology has been transplanted into the broader culture of contemporary wellbeing, which, through the digital, has established its own precise (and neo-liberal) social agency and collective practices (Baker 2022; Gidaris 2023). The two videos presented as the fulcrum of the project (*Virtual Sexology I* and *Virtual Sexology II*) express different commonplaces that are useful for understanding the characteristics of this immersive porno-therapeutic chiasm. *Virtual Sexology I* (2016) is a 360° video product from a male POV, described as a "sex therapy programme" by BaDoinkVR. The

proposed therapy is a distillation of various relaxation and breathing techniques aimed at male sexual wellbeing and pleasure (e.g. maintaining an erection and prolonged performance). The first part of the video is devoted to simple breathing techniques, guided by the performer/partner in the virtual architecture (gig. 54).

Figure 54. Screenshot from Virtual Sexology I, *2016, BaDoinkVR.*

A voiceover explains the benefits of relaxation exercises in overcoming "performance anxiety" associated with the sex act. The second act of the product proposes the use of a sex toy, a flashlight that is constantly manipulated by the performer and directed at the user's motionless video body. In this case, the use of the sex toy is part of the educational-commercial project of BaDoinkVR, which provided these products free of charge with the launch of the platform. The rest of the 360° video is a classic pornographic progression of a scene and various sex acts (mainly fellatio and various forms of penetration). The educational theme returns several times in the course of the sexual action, in the form of voiceover narration. The narrator describes the advantages of certain positions and techniques (such as *edging*) for the pleasure of all partners involved. The video ends with a classic money shot by the performer-user in a typical visualisation of the male orgasm, reflecting a model of the contemporary hardcore. This system, once again, and in a product that is part of a project dedicated to the "uniquely feminine aspects of desire and pleasure," renders the female orgasm completely invisible, as it is simply erased from the sexual narrative. *Virtual Sexology I* thus seems to use the topoi of education and therapy to produce a mannerist variation on the narrative para-framework of the pornographic.

However, it does not really deviate from a mainstream hardcore product and perpetuates a fundamentally male-oriented identifying rhetoric.

Interestingly, in the second film of the series – *Virtual Sexology II* – the issue of the hygienisation of female spectatorship is expressed particularly effectively. The video, in this case a female POV, begins with the same voiceover narrator describing the film as dedicated to women. This targeting is thus associated with an emotional focus rather than the quality of the physical performance. This kind of focus is repeated throughout the video, which is divided into three main parts. The first features the user, embodied in a female performer, being stimulated by an actor who is particularly and stereotypically attentive to dialogue of an emotional nature that focuses on the affection between the couple. This first part is then followed by a seemingly incoherent second one in which the user interacts with another female character (fig. 55).

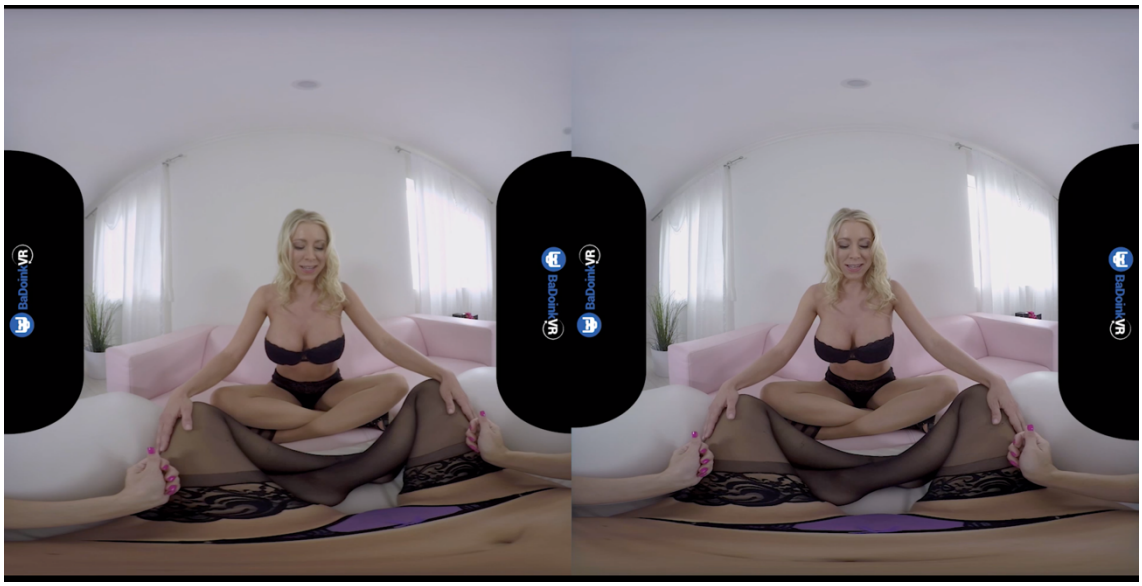

Figure 55. Screenshot from Virtual Sexology II*, 2017, BaDoinkVR.*

This second character, who plays the role of the "best friend," suggests a series of masturbation techniques – which involve various sex toys – accompanied by the voiceover narrator explaining the best positions and movements to increase self-induced pleasure. This interlude certainly looks at mainstream lesbian porn to make it appealing to a heterosexual male user. At the same time, it focuses on techniques and devices – material and symbolic – designed to increase pleasure. This system is then challenged again in the third part of the video, where the user-performer finds again her partner, with whom she performs a series of sexual acts, also according to the mainstream script:

foreplay, penetration and money shot. Here, too, the visibility of the female orgasm is delegated to the user-performer's moaning.

Virtual Sexology thus betrays, even in its second instalment, a blatant desire to remain appealing to the heterosexual male audience, the main target of mainstream pornography. In a study such as this one, which pays attention to the material conformation of devices as well as to the rhetorical-discursive detail that participates in the construction of their identity, we cannot help but draw conclusions from the way in which this product was *communicated*. *Virtual Sexology* is indeed an excellent example of the sanitisation often attributed to female viewership. Several studies have attempted to construct the key characteristics of the contemporary female observer of pornography. Atwood (2005) finds, in line with the issues reported here, a focus on commodities – clothing, sex toys and accessories – rather than on the visual production of pornography. This aspect, once again, reproduces stereotypical forms of femininity (Juffer 1996; Hardy 2001; Nikunen 2007) by reintegrating them into a controlled expression that can be associated with recognisable models. The further association with the world of wellbeing reinforces this paradigm and also imposes a precise commodification of desire. Quantitative studies (Marques 2017) on female pornographic spectatorship also seem to confirm this performance chiasmus: women feel the need to justify their use of pornography, and a form of "ethical spectatorship" is favoured in their choice of titles. Although a discourse centred on the ethics of the methods of production and representation of pornography underlies the political engagement with post-pornographic and sex-positive activism, this supposed need to expand discourses surrounding technically reproduced sex to justify its use seems emblematic. Female spectatorship, in line with the genealogical root explored in this thesis, still is considered not worthy or not "suited" of *simply using pornography*. This element, which, as we have seen, resonates with and creeps into VR technologies, is just another face of the disciplinary system imposed on female sexual autonomy – material and symbolic. Indeed, Marques asks if:

> The concern for the ethical production and empathy/compassion for pornographic actors [is] something that differentiates female and male spectatorship, or are these traits socialised into women as part of the broader construction of women as "naturally" nurturing? (Marques 2017, 793)

Fully aware of the essentialist, as well as binary, danger of considering scopic performances as ontologically different, we do not wish here to put forward a precise and monolithic identikit of female spectatorship. It is nevertheless imperative to consider, given the Foucauldian matrix of this work, the more or less *discursive* forms with which the morally acceptable female spectator has been *constructed.* She, also and especially in VR pornography, is addressed as a subjectivity that *has to* justify its scopic desire. This issue, while certainly emphasising important prosocial qualities – the focus on the ethical production of porn – reiterates the extreme discipline to which the female observer is still subjected. To pick up on the fruitful Latin etymology highlighted with Crary's observation, the female observer is required, once again, to maintain a moral posture – just as in Delsartian techniques – that shares in the erotic at the expense of sexual independence. This is prevalent also in the simple will to enjoy pornographic material *for what it is*, a product of fiction often used to aid the performance of sexual or masturbatory activities. What we wish to emphasise here, however, is not the simple role of the systemic *victim* or the hetero-patriarchal discursive and disciplinary violence perpetrated against the female observer but rather the more subtle *control of desire* to which she is subjected. In these terms, we therefore wish to highlight how the proliferation of sanitised, patinated and empathic forms of "feminine" pornography produce an important friction with that desiring impulse (erotic and otherwise) inherent in every human subjectivity.
Re-starting from desire (Cuter 2017) is thus the strategy that the technologies of the virtual seem to lose when they establish themselves in the pornographic. While one does not want to give space to reactionary positions that include the acceptance and reproduction of stereotypical, violent and blatantly hetero-patriarchal forms, the purging of desire, of the excising of the *pornographic from the pornographic*, only seems to introduce a new *dutyisation* of the feminine and queer subjectivities *forced* to intellectualise products of fiction by reaping only one victim: pleasure.

5.4 Virtual Onania: Immersion and Masturbation

We have seen in the previous section the frictions that layers of discursivity about VR products have had with respect to the pleasure of the pornographic. In that analysis we also focused on the cultural history of masturbation (cf. 1.4) as a posturological and moral

device of modern subjectivity. The definition of the pornographic in its online proliferation has certainly multiplied the forms, spaces and practices of masturbation, which are always related to a complex and multi-layered somatechnical system that crosses different affective dimensions, from arousal to disgust (Paasonen 2011, ch. 6). The literature on the masturbatory reception and perception of pornography in a culturological (Tuck 2003; Strager 2003; McKee et al. 2008; Ullen 2009; Tuck 2009; Garlick 2011) and sexological (Prause 2019) sense shares the need to conceive of the pornographic experience and its viewer as a specific perceptual modality with a high degree of soma-social agency. In *Pornography and its Critical Reception: Toward a Theory of Masturbation* (2009), Magnus Ullen describes the masturbatory act as a methodology for reading the pornographic visual text. Ullen regards any academic discourse on porn that does not take into account the masturbatory reading as distorted by a purifying will, as if to say that those who talk about porn without considering its purpose as sexual entertainment are purifying it in order to make it acceptable to a cultural community. Ullen's reference is to Linda Williams' texts (1989, 2004), which, according to the author, are guilty of generating an analysis divorced from the context of pornographic consumption.

Our specific focus on immersion has already provided a link to the encapsulated processes of the onanistic imagination. But in the case of pornographic VR, what relationships are established between the uncomfortable medium, the environmental imagery and the stimulation of the concrete genital?

The triangulation that takes place in the masturbatory consumption of VR pornography once again imposes itself as an erotic relationship not only with material images and media, but also, and above all, with technological limits and resistance to ultimate immersion. Indeed, we have already seen how porn is also expressed as an audiovisual genre that exposes and exploits the limits of the technologies it uses. In a game of friction that makes the genre unique in its directorial methods and, above all, in its deep understanding of the medium. In the case of VR, this attitude causes a short-circuit with the ergonomic forms of the devices, with the construction of the virtual architectural image and with the communicative rhetoric of the products. Indeed, the focus on the body-transfer process, immediacy and presence that we have seen in the various discourses on immersive pornography produces a clear friction with the actual

masturbatory use of such products. At the heart of the effectiveness of embodiment in the video body is a fundamental, if illusory, strategy of eliminating concrete proprioceptive forms in favour of synchronisation with virtual ones.[208] As we have seen with regard to other experimental situations, the success of such a projective movement is determined by a careful *educational* process of the proprioceptive systems so that they become as congruent as possible with the iconic assemblage of virtual corporeality. The act of masturbation, practised on the concrete genitalia of the observer, however, seems to disrupt this structure, imposing a constant in and out of virtual incorporation. A system, the latter, that recalls the optical instability found in our genealogy of pornographic immersion and that introduces new scopic and posturological chiasms. Pornographic VR is, as expected, an uncomfortable medium, often unsuited to the comfort demanded by onanistic architecture. However, the extensive production of such products suggests that pornographic pleasure strategies have *resolved* and *counteracted* the limitations of the technology. What seems relevant here is that masturbatory gestures in VR promote and emphasise qualities of the pornographic that were certainly already present in their screen form. We have seen how the rhetoric of VR replicates an interpretation of the pornographic of a projective type, which has also implied the attribution to this type of images of an agentic and social value of high potentiality. We have found, however, that such a projection cannot determine the actual and shared functioning of the virtual pornographic viewer, precisely because of the resistances created by the technical limitations and the uncomfortable nature of the experience. The possibility of fusing different oscillations of embodiment and disembodiment, attraction and disgust, again seems to be at the core of the masturbatory possibilities of the pornographic. Virtual onanism cannot be built on the congruence between the video body and the concrete body precisely because the user of mainstream pornography, or more generally the user of pornography in masturbatory action, is a *distracted* observer and at the same time willing to negotiate with the image in a specific way. Quality, definition, coherence, suspension of disbelief are all cinematic and scopic devices with which the masturbator has an elastic relationship and which allow them to extract sexual arousal from products that do not respect certain rules of the contemporary mediascape. This distracted elasticity of the

[208] The case of the rubber-hand illusion (Tsakiris and Haggard 2005; Reimer et al. 2019) and its virtual form (Kocur et al. 2022), is a clear example of this embodiment strategy.

masturbating perceptual performance is certainly repeated in the pornographic an-icon and consists precisely in those forms of contract with the image that compensate for and emphasise the limits of the technological. It is in the interstices between the helmet and the face, between the concrete, videographic body and its genitals, that the erotic atmosphere is defined that allows the masturbatory act to take place.

As Ullen (2009) points out, the onanistic act also constitutes the rhetorical success of pornography. In this analysis, we have always taken into account the discursive sharing of the identity of devices, sexual bodies and postures in action in erotic perception. The author's perspective, however, clarifies the rhetorical role *of* the pornographic visual text itself:

> From a rhetorical perspective, one could thus say that the act of masturbation which accompanies the consumption of pornography provides ample evidence of how successfully porn effects the ultimate goal of every rhetorical exposition: to be persuasive enough to immediately call forth from its audience a certain mode of action. (Ullen 2009, 16)

According to Ullen, the pornographic image thus has the power to determine the bodily response in preparation for masturbation. While the author's reflection seems coherent, especially in its connection to the systems of rhetoric, it is problematic when applied indiscriminately to the pornographic kaleidoscope. Indeed, to ascribe such linearity to a causal system of iconic stimulus and bodily response is to risk incorporating a perspective similar to the behaviourlist empiricism of early film theory. A logic, the latter, that carries with it the inevitable equation that cloaks the pornographic with a precise and direct agency on the social, as the famous motto of anti-pornographic feminism recited: "Pornography is the theory – rape is the practice" (Morgan, 1980, 128). It is clear, then, that pornography is not simply a "machine that makes the body do things" (Gaines 2003), and the masturbatory act is indeed part of the pornographic, but the movements and causal systems that characterise it are always complex and multi-layered. It seems that the most correct regime for understanding the dynamics of the interrelationship between pornography and masturbation is to consider an *ecosystem* of practices, technologies and gestures that participate in the experience of pornography without exhausting its complex reception, which is always situated in the specific subjectivities that enjoy it. A position

that therefore takes into account the inexhaustible ways in which masturbation and pornography are related, which do not necessarily produce a causal system with each other. While this form of theoretical relativism is necessary in order to determine the nuanced limits of the pornographic reception process, it also runs the risk of stopping any further analysis, as if to say that masturbation is such a personalised phenomenon that any form of theoretical generalisation is impossible. Therefore, while allowing for a certain degree of abstraction, it is desirable to attempt to consider the broad workings of the masturbatory process in as situated and specific a form as possible.

One aspect that we would like to emphasise here, to take up the queer trait exemplified by the perceptual obliquity described in the first chapters and underlined by the discussion of gendered performance in virtual bodies, is that of *genital fluidification*. This term is intended to describe a broad phenomenon that is certainly not exclusively related to the context of pornographic VR, but which finds in the latter a particularly effective device. We have seen, both experimentally and culturologically, that virtual pornography produces systems of blatant disorientation with regard to the relationship between bodily expression and stereotypical gender identity. Pornographic masturbation thus seems to define itself as a potentially queer form of perception. In fact, the modern definition of onanism introduces precisely this kind of declination of identity obliqueness. The danger of the secret vice lay, as expected, in its solipsistic and hermetic characteristic. One could say, a issue of control: masturbation is an act completed in the subject who performs it, and its moral subversiveness lies precisely in the absence of a concrete intersubjective relationship and therefore in the absence of a relationship with any agency of disciplinary control. In the phantoms of the onanistic imagination, therefore, any form of oblique – queer – sexuality could have infiltrated, leading to a further moral panic for the modern sexual panopticon. Beyond the genealogical aspects, this way of interpreting masturbation tells us something very specific about the interaction between onanistic action, imagination and possible media supports: any masturbatory action, given the ambiguous and resonant relationship with material media and images, prescribes a fluidised gestuality with regard to the congruence between concrete genital and virtual desire. The formation of a somatic archive (Paasonen 2011, 203) of body figures, practices, scopic and organic movements that resonate with those reproduced in images seems to define a particularly effective interpretation of pornographic agency. The

constant perceptual co-participation, dictated by the need to bridge the distance between representation and the concrete body, forces us to ask what dynamics and interventions masturbatory stimulation initiates. Masturbation while watching a pornographic product determines, on the one hand, a direct exploration of the erogenous and genital zones, thus constructing a proprioceptive contact with concrete parts of the body, accessible by touch and, secondarily, by sight. However, the movement of onanistic desire seems to impose a precise division between concrete tactile stimulation and phantasmatic desire. To consider the congruence of masturbatory gesture, in its rhythms and directions, with that of the pornographic audiovisual product, therefore seems to be a particularly short-sighted perspective of analysis, precisely because it does not take into account the complex systems at work. The activation of the somatic archive, imaginative compensations and different scopic regimes contribute to the efficacy of masturbation, which is not necessarily confirmed by the orgasm of those who perform it. A stratification of movements in action that once again comes into friction with the intentions – rhetorical and ergonomic – of pornographic VR devices, which, as we have seen, seem to propose rather an identificatory and projective reading. As expected, however, just as with 2D masturbation, it is in the incongruities and discrepancies with the video movement that the masturbatory act becomes possible, precisely because of the necessary imaginative distance it requires in order to function properly. The element that seems to emerge with exuberance in this interrelation is precisely the always virtual dimension of the masturbatory and, more generally, pornographic experience. The technical limitations of VR pornography, especially in terms of onanistic performance, determine and emphasise the constant tension between the virtual, the video and the concrete body, and highlight the soma-technological constitution of sexual identity. The intention here is to stress how, in the masturbatory assimilation and reading of the pornographic text, the congruencies between the concrete body and the videal body are distanced to such an extent that a disoriented, eclectic and entirely performative form of pornographic experience is determined. An interpretive key that establishes a double consequence. On the one hand, this movement of onanistic and pornographic desire defuses a supposedly direct social agency, it deconstructs the moral panic about the mimetic equation - in the sense of imitation – between image action and bodily/social action. On the other hand, it fluidifies an exclusively heterosexual system of interpretation of mainstream pornography. Indeed,

the tortuous processes of onanistic desire cannot always be seen as consistent with a simply heterosexual and binary dynamic of intersubjective interaction, where one's own body and soma-technical identity is activated by subjectivities and practices with which one believes to have something in common, such as genitals or gendered desire. The aforementioned spectatorial amalgam and the cubist dimension of pornographic scopic perspectives introduce the possibility of conceiving masturbatory reception as a constant oscillation between embodiment and disembodiment, between arousal and disgust, and thus as a form of constant disorientation. We have seen how, in our analysis with reference to Ahmed (2006 a and b), the term describes precisely those forms of identity obliquity that overcome the rigidity of the heterosexual verticalised schema. This is not to underestimate the normative power of heterosexual *culture* and *thought* (Wittig 1980), but rather to emphasise how it is always deconstructed in itself in contact with pornographic audiovisual devices and products, precisely because of the lack of connection and coherence between the concrete body, imagination and image. Watching a pornographic product labelled as congruent with one's own sexual orientation and preferences involves constant changes of perspective and little control over the exuberance of desire. The latter is activated by a more complex system of interrelations and contact with the inorganic – the device – one's own concrete body – the masturbatory act – and the various resonances in action – with the practices represented in the image and those imagined.

VR thus seems to propose itself in the context of the pornographic ecosystem as an *incoherent* media form. The term is intended to describe this gap between rhetorical communication, directorial approach and the actual effectiveness of the product. As we have tried to demonstrate, any form of coherence between the video image and the concrete body can only fail in its masturbatory efficacy precisely because the latter does not function in a mimetic sense, i.e. it does not follow a similarity between the gesture of genital stimulation and the technically reproduced performance. However, the fact that pornographic VR continues to exist, albeit in its market fluctuations, and that consumers continue to use it in a masturbatory sense, confirms the complexity of the masturbatory act. An action that is deeply layered and fundamentally queer even when related to overtly heterosexual products. Pornographic VR covers the concrete body with a video layer and participates in the kaleidoscopic multiplication of perspectives and desires, as well as in

the fluidification of the concrete genital. If we consider that the masturbatory act is always determined by an oscillation of embodied points of view – in the reproduced subjects, in the concrete body of the masturbator, in the machine of the visible and in other unpredictable dwellings of the image – pornographic VR seems to support precisely this process. The determination of a privileged, though not exclusive, perspective through the choice of video and browsing rituals opens up further possibilities for playful experimentation with one's gender identity and the various features – somatic, technological and scopic – that construct its constantly evolving structure.

Conclusions

We can now return to our initial question: what does it mean to be immersed in a technically reproduced erotic-pornographic image mediated through a wearable device such as the stereoscope and contemporary Virtual Reality?

We have shown how an archaeology of this possible meaning is relevant to understanding the present. In its continuities and ruptures, the hermetic immersive image and the devices that promote it prove to be highly ambiguous. Following a conception of technology and media forms as products and producers – in a performative sense – of a given culture, we cannot help but draw certain conclusions about what these aesthetic experiences tell us about technically reproduced eroticism. First of all, we have proposed the idea that every media form contains its own set of *postures*. They are part of the device itself – here in both the Foucauldian and technological sense – and contribute in the formation of the identity of these machinic entities. An identity that is primarily mediological – that is, the posture explains more precisely how these technologies work – but also, and above all, a social, ideological and reputational one. The media, the uncomfortable ones, have been and are still being relegated to a minor, popular status, one might say, using the elitist meaning of the term. A precise social capital that has to do, by definition, with the physical – but also always moral – postures that these devices demand of their viewers. A system of physical and optical distortion that found common ground with the regimes and categories of the pornographic. This alliance determined the perfect chiasma of obscenity for society in the second half of the nineteenth century and, at the same time, possible forms of friction and resistance that, precisely through postures and media, promoted the expansion of the erotic-pornographic citizenship of an era. We have seen that this social and media movement was not without ambiguity. The constant "prices" that oblique subjectivities – such as Victorian women – had to pay for inclusion in their mediascape were precisely those of the progressive sanitisation of their erotic-pornographic desire and expression. A question, then, of moral threats and social panic in relation to gender performance and the quasi-magical power of optical devices. A power, the latter, that worked in favour of the pornographic precisely because of their common intention. We have discussed this commonality by highlighting the synchronicity between the emergence of photo-stereography and the definition of the

pornographic genre in the modern sense. This pairing seems essential for a complete genealogy of the genre beyond cinematic interpretation. The three-dimensionality of the image and its environmentalisation, as we have seen with Holmes, seem to promote the idea that stereography has the capacity, admittedly rhetorical, to miniaturise a *piece of reality*. It is the more hyper-mediated as it is perceived as transparent. A chiasmus well known to contemporary mediology, but which discovers a new conceptual power when applied to the ontology of the pornographic image. This kind of product, as we have discussed, has a peculiar relationship with reality and truthfulness. An unresolvable resonance and dissonance, in its representational paradox, which finds in immersive technologies a new ally for this oxymoron. The stereoscope and VR have defined themselves, in their times and modes, as the *ultimate display*, and this aspect cannot but resonate with the rhetorical intentions of the pornographic since its origins. An aspect, that of veracity and immersion, which also establishes its counterpart, paradoxically, at the heart of this peculiar erotic experience. These machines of the visible are only effective when they come into contact with our bodies. Their weight and discomfort underline the illusory nature of the experience they promote. But in this friction, we rediscover, as we have argued here, a new space for desire. A specific and somatechnical one, that promotes and extracts pleasure from the relationship with the machine. A relationship that looks at the sex appeal of the inorganic, but also affirms the complexity of sexual and pornographic desire. Immersing oneself in a pornographic image certainly could promotes new spaces for hetero-patriarchal gazes and normalised bodies. However, the pornography industry – in its archaeological and contemporary forms – is never just a producer of politically repressive scopic regimes and images. This is not only because of the attention given to the subject by movements such as post-pornography and alternative pornography, but more generally because, on the other side of the screen, the headset or the stereoscope, there is always a complex subjectivity that enjoys it. This seemingly self-evident fact highlights the complex relationship between gender identity, sexual orientation and technologies. It is a system that participates in the ever-shimmering definition of the observer's identity, and that promotes, also and above all through masturbatory perception, a proprioceptive fluidification of concrete genitalia, bodily sensations and gender embodiments.

We have also seen how immersive devices, the uncomfortable media, have determined precise commonplaces that, from stereoscope to VR, seem to have underlined the identity of these technologies. Interpellation – through the gaze, the voice and the narrative unfolding in the audiovisual – is one of the elements, it has been argued, that has best conveyed the rhetorical and erotic intentions of the medium. A purpose determined by the will to absorb its users, to seduce them in the *depths of the image* – to use Holmes' fortunate expression. This seductive system, this *tease structure*, is thus based on a precise contract with images that could explain its systems in both genealogical and contemporary terms. The contractual nature of the immersive image seems to be based on a movement of investment of agency on the part of the observer. It is precisely on the basis of iconographic and audiovisual techniques that the observer consciously participates in the effectiveness of the optical illusion and its seductive intentions. As in a ritual form, the objects-persons of stereopornography – haptic and solid – are imbued with life and become effective actors in the para-social contract with their observers. Indeed, we have shown that para-sociality or quasi-inter-subjectivity is another central aspect of stereoscopic pornography. An image technique that has helped us, on the one hand, to define a further declination of the performative operation of the image on the world and its observers and, on the other hand, to point to a specific way in which the environmental image and immersive media produce in order to capture and absorb the user.

The future of pornography – as VR has often been called – is thus, paradoxically, also its past. This is not the place to make predictions, i.e. to determine whether VR porn will indeed establish itself as a broad form of commercial success in the contemporary pornoscape. One could certainly see the "defeat" of the stereoscope as an ominous sign of the uncertain future of these audiovisual products. However, this analysis is more interested in the alliance between the immersive and the pornographic, which seems to confirm a double friction of erotic desire. It is, in fact, the experience of the *uncontrolled*, what therefore escapes the abstract verticality of optical posture. The inherent and rhetorical will of immersive pornography, as we have seen, also seems to be to set a limit to this experience. A boundary that is certainly unframed, but which tells us of the desire to hermetically encapsulate the subject in a controlled and controllable experience. However, we have shown – through the instability of both stereoscopic illusion and

Virtual Reality – that this desire, like the utopia of ultimate immersion, can never be fully realised. It is in the frictions, interstices and resonances between bodies, machines and environments that the effectiveness of the erotic counter-attack of these images is produced.

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Figure 28. Michelangelo Buonarroti, Last Judgement*, 1536-1541, Sistine Chapel, Rome*

Figure 29. File BB3, a bound file containing information relating to the illegal production of erotic images, 1855-68 The file contains 303 handwritten pages; 30 x 22 cm. Coll. Archives de la Préfecture de Police de Paris, catalogue no. BB/3.The file is open at pages 86 and 87, in Pellerin (2000,91).

Figure 30. Charles Williams, 1797, Billy's Raree-Show – or John Bull Enlighten'd. LE RAREE SHOW DE BILLY - OU JOHN BULL ECLAIRE. 1797, Charles Williams, publié le 15 août 1797 par S. W. Fores,50. Piccadilly, eau-forte rehaussée à la main, 20.3 x 30.5 cm. Political satire. As the flag at the top of the optical box indicates, this is a 'Tusion of the senses.' The performer begins, 'Please pay attention now to the enchanting vision before you. It is the vision of Peace.'" The rest of the text suggests that the listeners are quite naive if they believe that a government that pays for war is interested in peace. The showman is William Pitt, First Lord of the Treasury. As John Bull (i.e. the people) looks on, Pitt steals a bag marked 'savings,' indicating that the people's savings are being diverted to the war.

Figure 31. John Doyle, A Show Up!*, 1832, in Balzer (1998, 69). LA BOÎTE D'OPTIQUE POLITIQUE. 1840, John Doyle, HB n° 662, lithographie de A. Ducoté, publié le 1er décembre 1840 par Thos. Mc Lean, 26 Haymarket, lithographie, 36.8 x 29.2 cm. Another political satire. This time, John Bull celebrates the past military victories of England and Her Majesty's Fleet while being robbed for a far less glorious war effort against Ireland.*

Figure 32. C.J. *Grant,* Paying for Peeping*, 1835, in Balzer (1998, 70).* PAYER POUR VOIR. 1835, C.J. Grant, Everybody's Album and Caricature Magazine, publié par G.J. Grant, lithographie, 8.9 x 8.9 cm

Figure 33. Maggie Salcedo, La Boite D'Optique*, c. 1920, in Balzer (1998, 71). LA BOÎTE D'OPTIQUE. vers 1920, Maggie Salcedo, lithographie rehaussée, 12.1 x 11.4 cm. Salcedo was a well-known French illustrator who worked during the first quarter of the 20th century. She illustrated many children's books. These engravings illustrate the then*

generally accepted idea that fairs were dangerous and that optical boxes were an opportunity for swindlers to pick pockets. In Morley's Memoirs of Bartholomew Fair, it is said 'As Lent is for fishmongers, so Bartholomew Fair is for thieves' (p. 146). Clearly a person bent over and concentrating on an optical view was not without interest to a pick-pocket. Two of the engravings seem simply to show the disappearance of a purse. In the other drawings, however, it is something more important that is disappearing, namely a people's savings or their trust.

Figure 34. Stereoscopic image on paper, possibly by Moulin (around 1860). Coloured to albumen paper. Imitation, in pornographic mode, of T. R. Williams' genre scenes. (Coll. private, Paris), in Nazarief (1987, 106).

Figure 35. Andrea Mantegna, San Zeno Altarpiece*, 1456-1459, Basilica of San Zeno, Verona*

Figure 36. Heinrich Lossow, The Sin*, 1880*

Figure 37. Stereoscopic Daguerreotype, Auguste Belloc, c. 1854, in Nazarieff (1987, 20)

Figure 38. Stereoscopic Daguerreotype, F. Jacques Moulin, c. 1854, in Nazarieff (1987, 48)

Figure 39. Stereoscopic Daguerreotype, Louis-Camille d'Olivier, c. 1855, in Nazarieff (1987, 51).

Figure 40. Stereoscopic Daguerreotype, Au nom de A. Richebourg, c. 1854, in Nazarieff (1987, 52).

Figure 41. Stereoscopic Daguerreotype, F. Jacques Moulin (?), 1851, in Nazarieff (1987, 47).

Figure 42. Stereoscopic Image on paper, F. Jacques Moulin (?), c. 1854, in Nazarieff (1987, 96).

Figure 43. Stereoscopic Image on paper, Anonyme, 1860-65, in Nazarieff (1987, 110).

Figure 44 F.G. Weller, Woman's Rights - The Reharsal*, 1872 Davis Collection, in Davis (2011, 25)*

Figure 45. Benjamin Kilburn/James M. Davis, Don't Tell Me You Won't Wash!, *1897, Davis Collection, in Davis (2011, 30).*

Figure 46. Underwood and Underwood, New Woman – Wash Day*, 1901, Davis Collection in Davis (2011, 33).*

Figure 47. R. Y. Young/American Stereoscopic Co., Woman's Rights, 1901, Davis Collection, in Davis (2011, 29).

Figure 48. Maud Allan as Salome in The Vision of Salome, *published by J. Beagles and Co bromide postcard print, 1908 5 1/2 in x 3 1/2 in (139 mm x 89 mm).*

Figure 49. Stereoscopic image on paper to be viewed as transparencies. Belloc (?), 1855–1865, in Nazarieff (1987, 105)

Figure 50. Stereoscopic image on paper, Moulin (?), c. 1860, coloured albumen paper, in Nazarieff (1987, 106).

Figures 50–51. Illustrations from The Girl's Own Paper *1891, 508–509.*

Figure 52. Stereoscopic face camera used by VRBanger in the production of a VR porn video, 2017.

Figure 53. Screenshot from the website Virtual Sexology, BaDoinkVR http://virtualsexology.com/.

Figure 54. Screenshot from Virtual Sexology I, *2016, BaDoinkVR.*

Figure 55. Screenshot from Virtual Sexology II*, 2017, BaDoinkVR.*