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**ARCHAEOLOGIES OF THE VIRTUAL
MATERIALITIES, SENSES, IMAGINARIES**

EDITED BY ANNA CATERINA DALMASSO, WANDA STRAUVEN, AND SIMONE VENTURINI

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ARCHAEOLOGIES OF THE VIRTUAL MATERIALITIES, SENSES, IMAGINARIES

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ARCHAEOLOGIES
OF THE
VIRTUAL
MATERIALITIES,
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IMAGINARIES



Gravitational Fields. Attraction, Roundness, and Operationality of Immersive Images¹

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TOWARDS ATTRACTIVE IMMERSIVE ENVIRONMENTS

Immersive interactive environments have come to challenge contemporary spectatorship and audio-visual creation. The domains of the virtual seem to become par excellence that which is able to absorb us and engage us. Even though they have a markedly distinct genealogy, the domains of “virtual”, “immersive”, and “digital” gradually overlap and are almost assimilated in everyday language. The emergence of the World Wide Web during the 1990s and the diffusion of digital devices are often referred to as a turning point for an intense reception and participatory media experience (Rose 2011). But, in recent decades, studies in different fields have endeavoured to show how immersive environments are by no means an invention of the 21st century: immersivity is not only clearly grounded in numerous optical devices of the modern age such as the 3-D stereoscope, the “all-view” panorama, the frameless phantasmagoria,

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The co-editors of the issue have discussed the development of the present text in synergy and they share its scientific scope. More specifically, the section “Towards Attraction Immersive Environments” can be attributed to Wanda Strauven, the section “Towards an Immersivity of Roundness” to Anna Caterina Dalmasso, and the section “Towards Operational Immersive Environments” to Simone Venturini. The section “Materialities, Senses, Imaginaries” has been collaboratively co-written.

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and the multifarious forms of peep media culture, it can even be traced to some extent to the architectural *trompe l'œil* of the Renaissance and Baroque periods, frescoes from Roman times, and as far back as the earliest forms of human expression, such as Palaeolithic cave paintings (Huhtamo 2013, Grau 2003, Nechvatal 2009).

Against the background of a rich and multidisciplinary scholarship, the role played by media archaeology (Huhtamo Parikka 2011, Parikka 2012) lies not only in questioning the newness of “new” media, and thus debunking the idea that immersive environments and experiences may be unprecedented, but also in providing different frameworks for a critical exploration of the process of virtualisation of the environment, which exceeds the state of present-day media technology. To understand this overarching techno-cultural movement, we need to take into account the entanglement between the devices and practices which elicit a transformation of our experience of images, the infrastructures and architectural spaces of reception, which are designed to become the catalyst of immersive spectatorship, through multisensory stimulation and interaction, as much as the epistemic and imaginary constructs which foster the material concretisation of media.

By triggering our bodies to respond as if the experiences they convey were real (Slater 2009), virtual interfaces can offer us intense thrills, feelings of awe, or goosebumps. Featuring roller-coasters, wanderings in outer space, flight simulators, and so forth, many of the contents that are offered to contemporary immersive users remediate the exotic fascination raised by *travelogues*, “impossible voyages”, and other curiosities in the early phases of cinema history (Bolter and Grusin 1999, for the notion of remediation.) As André Gaudreault and Tom Gunning have argued, the “cinema of attractions” at the turn of the century was characterised by a driving force that, instead of focusing primarily on storytelling, solicited spectators’ attention, inciting visual curiosity and providing pleasure through an exciting spectacle (Gaudreault & Gunning 1989, Gunning 1990, Strauven 2006). Likewise, nowadays, virtual immersive experiences renew an emphasis on spectacle and monstration over narrative, since what becomes most engaging for the audience is the disruptive sensorial impact of medium and technology and the staging of the apparatus itself (Golding 2019).

Yet, by entering CAVEs and wearing head-mounted displays, spectators are brought back not so much to the first film projections, but rather to the individual viewing devices of penny arcades, like the Kinetoscope and the Mutoscope, or even better to the embodied 3-D viewing experience of the Holmes stereoscope, which came with a hooded face cover enhancing the virtual reality effect of the stereoscopic images. In terms of collective immersive experiences, it is relevant to mention here the vanishing of the frame—both as the border of vision and the delineation of the image—epitomised, for instance, in Robert Barker’s panoramas where the spectators standing on a central platform are literally surrounded by an “all-view” painting, or in Étienne-Gaspar Robert’s (aka Robertson’s) phantasmagoria shows where both the lanternist and the

phantoscope are hidden behind the screen, projecting frameless ghostly images towards the audience, with sound and smoke effects.

Indeed, in virtual technologies, the construction of iconic space no longer relies on the apparatus of the frame (Conte 2020, Pinotti 2021), resulting in a blurring of the threshold between physical reality and the virtuality of the image. However, despite the apparent unframedness of immersive environments, framing persists as a symbolic, psychic, aesthetic, or semiotic threshold. Instead of disappearing, the very perceptual function of framing is rather assumed by the experiencer's body and embodied gestures, acting like a *virtual frame* (Dalmasso 2019, Ng 2021), being constantly tracked by the sensors of the interface (Grespi 2021). The frontality of the frame is, thus, replaced by a world that is organised *around* the percipient (reminiscent of Barker's panorama), the experiencer's body becomes the pivot of a process of reciprocal performative negotiation of a shared agency between the human and the technological: between the experiencer and the constant operation of sensing and tracking ensured by the media environment.

TOWARDS AN IMMERSIVITY OF ROUNDNESS

The virtual mediascape draws our attention to another dimension of "attraction", as that which creates a *gravitational* field: it does not merely emphasise the dimension of shock and sensorial disorientation, but points to a reconfiguration of spectatorship as essentially interactive. What does it mean for creators to design an environment to be experienced (rather than an image to be seen), and for the experiencer to become the "centre of attraction" of the image-making process?

Organising themselves around this fulcrum, virtual environments give rise to "self-centred worlds" (Catricalà and Eugeni 2020), which are articulated according to the percipient, by delimitating or augmenting their cognitive capabilities, featuring different forms of "exocentric images" (Bédard 2022), that is, images produced by a camera attached to the body of an actor which, paradoxically, generate the impression of an immobile body in a moving world. Thus, by entering the virtual space, the experiencer accesses subjective *perceptive bubbles* similar to those described by the ethologist Jacob von Uexküll, to identify the way in which each species appears to be enclosed within an environment (*Umwelt*) made up of its own perceptual and operational possibilities, as in a "soap bubble" (Pinotti 2021).

Whether they provide access to a hermetically sealed illusionistic environment (virtual reality), or to a space which allows the superimposition of data and elements over the surrounding environment (mixed and augmented reality), extended reality media need to be reframed as the barycentre of what Hito Steyerl has called "bubble vision" (Steyerl 2017): an aesthetics that characterises not just the experience of digital media but also informs digital technoculture as such. As the artist argues, on the one hand, this trope hints at a condition of

isolation and deceit, as suggested by so-called “filter bubbles”, which create a parallel universe of information across media platforms and networks, and, on the other hand, it is a metaphor for globalisation and complexity, as we speak for instance of “real estate bubbles”, triggering the constant fear of economic collapse, burdening the destinies of an interconnected society. Besides, the isolation enacted by the figure of the bubble has recently found realisation in the global confinement imposed by the Covid-19 lockdowns, during which the accessibility to the “real” has been mediated worldwide by virtual and digital technologies.

Hence, the metaphors of circularity and roundness, whose emblem is the spherical figure of the bubble, feature a twofold structure, being suspended between a centripetal and a centrifugal movement. If the use of circular all-encompassing images grants a privilege to the observer as the centre of representative space, similar to that constructed by the tradition of Renaissance perspective, at the same time it also encloses the percipient in a regime of surveillance and subjugation, condensed by the dispositive of the Panopticon, but also presaged by the process of a capitalistic and military possession and mapping of space, historically strengthened by the different forms of aerial view. Furthermore, roundness is also a figure for the eye, an organic shape opposing the geometry of the frame, which stands in contrast with the orthogonality of the Albertian quadrangle. Even before the eye as organ of vision, circularity indicates the hypnotic power of the eyespot (Caillois 1984), as it may precede the function of vision, constituting itself as a pole of attraction.

Then, although the constraints it imposes on the observer's agency, the bubble provides at the same time a safe operating space, able at once to foster an organic engagement of the subject (Berleant 2010) and to work as a “disorientation device” (Ahmed 2006) or a means of “de-automatisation” (Deikman 1972). In this perspective, the bubble also offers a way to challenge the stable position of the subject: its topology comes to displace and even to reverse the model of the Panopticon, to turn it inside-out, showing the subject's effect on the surface, letting them resurface and interrogating them in a world that co-constitutes with them, to force them to recognise that every movement performed necessarily affects the surrounding environment.

TOWARDS OPERATIONAL IMMERSIVE ENVIRONMENTS

The contemporary tension towards immersivity inherits and preserves a deep time (Zielinski 2006). Several “topological” devices of the early modern age and the 19th century place the role of the human subject in relation to a “real” increasingly articulated and challenged by mediatised environments. The “sites of reality” (Crary 2002) established by immersive media infrastructure of modernity aim to overcome the limits of subjective vision and thus support

and help the progressive inadequacy of the human subject with respect to the technological a priori. Mixed, augmented, and virtual environments and images unfold a long-term training and negotiating ground of the conditions of existence of subjects, media, and their reciprocal and intertwined relationships.

Such relationships, therefore, draw attention not only to the form of roundness *per se*, but to a processual, operational roundness in terms of circularities, recursiveness, and feedback (Johnson 2011), constantly at work in augmented, virtual, immersive, interactive worlds and their media infrastructure. As a result, the narcissistic and reflexive background of these centric worlds is characterised by a continuous solicitation of the subject to take in information, provide and receive feedback, interact, thus corresponding to a hybrid training, and constantly operational environment.

Such ambivalence inherent in the roundness of immersive and interactive environments lies, on the one hand, in generating a utopian vision; while, on the other hand, from a "historico-pragmatic" perspective, circularity challenges and disorients the subject, proving to be close to the "perverse" and heterotopian practices already known and experienced by cinema itself, which found experimental and training settings in the scientific, medical, surveillance, military, and sensor-monitoring fields—the so-called S/M practices of the cinematic apparatus (Elsaesser 2005). As the environmentalisation of images, stimulated by virtual and immersive technical devices, challenges their representational status, immersive images become closer and closer to the recursivity of operational images, thus working in harmony with the processes of transformation from a visual to an *invisual* culture (Parikka 2023).

An apparently paradoxical convergence between the environmental and the operational framework ceases to be so if we consider immersive media and their images as the result of continuous oscillations between media transparency and opacity. Within the broad and productive scholarly debate generated by the successful definition coined by Harun Farocki in the early 2000s, Thomas Elsaesser was perhaps the most effective in relating "operational images" to the concepts of simulation, mimesis, and *trompe l'œil*. Since "'mimesis has become a matter of generative algorithms' [...] operational images are images that no longer function like a 'window on the world', they point the way to a new definition of what an image is." (Elsaesser 2017: 216 and 219).

As is well known, *trompe l'œil* is a recursive key concept and deep pattern for immersivity, described in terms of "excessive mimesis" (Marin 2001) and "optical illusion" (Grau 2003), for its belonging to the order of hallucination (Marin 2001) or sacredness (Balke, Siegert and Vogl 2015). But as far as we are concerned here, the field of cultural techniques and the framework of operative ontologies, and within them the genealogy of *trompe l'œil* unfolded by Bernard Siegert, provide a more useful viewpoint. Here, the trigger of immersivity emerges "from margins, edges, and borders [...] constantly reinterpreted as represented objects [...] It is this oscillating between the transparency of the imaginary [...] space and the opacity of the material carrier, and more importantly, it is the re-entry of the latter into the former, that keeps generating the *trompe l'œil*"

(Siegert 2015, 191).

While the institutionalisation of a specific media infrastructure testifies the “taming” of a techno-cultural environment and the weakening of media competitions, on the contrary, the contemporary oscillation between framedness and unframedness, visual and invisual, representational and operational into the interactive, virtual, and immersive worlds is an indication of an ongoing negotiation in the struggle for the environmentalisation of images. Therefore, immersive media show an entangled historicity of their visual and material infrastructure (Parks and Starosielski 2015), where augmented, extended, and virtual images retain traces of their own operational modes and chains of construction, superimposing and overwriting several cultural techniques, such as tracking tools, diagrams, grids, or the 20th-century cinema and media imaginaries and narratives.

Through the different narratives and imaginaries unfolded by historical media, we can catch archaeological and discursive glimpses of the a priori of contemporary immersivity, which appears in this perspective as an intensification and articulation of a long-standing process. It is an imaginary that continuously challenges material, historical, and subjective temporalities, aesthetics and formal representations, and psychic-sense-motor principles of (de-)automatisation and (de-)individualisation of the subject in a circular, operational, and immersive media environment.

In the end, as Barthes noted almost fifty years ago (Barthes 1975), the co-presence in the proto-immersive space of the movie theatre of an image-oriented narcissistic body and a fetishistic body oriented towards material excesses and margins, can be traced back to how virtual immersivity in narcissistic terms can lead to the loss of the crucial freedom to orient the gaze towards the edges (Pinotti 2020). An archaeology of the virtual has therefore a critical research objective, aimed at exploring the shift between a narcissistic unframedness, presentness, immediateness, and a fetishistic operational perverseness in immersive worlds, and at ensuring that the “edges” and “margins” of virtual environments will retain their fundamental role of negotiating and balancing the relationships between materialities, senses, and imaginaries.

MATERIALITIES, SENSES, IMAGINARIES

The different contributions in this thematic issue investigate the notion of the virtual, and the present state of the art of virtual technologies, by delving into the deep time of cinema and media history and by developing the ambiguity of the spherical figure, which is treated both as a metaphor, a topology, a material condition of technological devices, a cultural technique, and an epistemic and imaginary dispositive.

The opening essay by Élise Jouhannet offers the theoretical framework of the immersive roundness and the circularisation of the image, as opposed to the classical rectangularly framed film image and media screen. Through the

metaphor of the bubble and the transhistorical imaginary which springs from it, the author proposes to rethink the materiality of virtual reality in terms of transparency and elasticity, tracing an alternative genealogy, both historically and symbolically, from the first hot-air balloons to the inflatable “bubbles” of expanded cinema.

The next two articles look into site-specific immersive dispositives and their materialities. VR technologies are commonly presented and understood as a dematerialisation of human experience, which is in contrast with the hypermediation of virtual interfaces and in particular with the fact that the gestures and bodily movements of the spectator are precisely the source of the actualisation of the virtual image. This is already somehow embedded in “topological” devices of the early modern age, as explored by Matteo Citrini in relation to the toposcope and by Maja-Lisa Müller in relation to early modern choir stalls. Both authors focus on the material conditions of an immersive experience, respectively in the Alps and in the architectural spaces of the church. Citrini traces the non-linear and heterogeneous history of the toposcope, a panoramic device consisting of a (semi)circular table with topographic information about the surroundings. Originally designed for the detection of fires, the toposcope was repurposed into a tourist attraction during the 19th century, offering to the mountaineer an experience of *in situ* virtuality. Similarly, the inlaid decoration and *trompe-l'œil* imaginary of the wooden choir stalls discussed by Müller placed the clergy in a virtual space, a space within a space, or rather a hybrid space at the intersection of virtuality and actuality. For this purpose, Müller revisits Brunelleschi's experiments in central perspective pointing out the importance of *situated* vision and the connection between the spheres of depicting and depicted.

Then follow two contributions that focus on the sensorial immersivity of cinema, centred around two key figures of the early-20th-century debate on the senses of cinema: Aldous Huxley and Frederick Kiesler. Huxley's parody of the talkies through the “invention” or imaginary medium of the feelies is critically analysed by Giancarlo Grossi from a media-epistemological perspective. Furthermore, by reconnecting the feelies to the cultural history of olfaction, Grossi suggests how the mediatisation of this repressed sense is connected to the colonisation of subjectivity, a fact which reveals a clearly dystopian scenario for the author of *Brave New World* but which is at the same time essential for the further (theoretical) development of virtual reality. Anna Franceschini, on the other hand, places Kiesler's work in a media-archaeological perspective, highlighting the Austrian-American architect's visionary intuition of cinema as a totalizing and virtualizing experience. Therefore, Franceschini's contribution is focused on the sensoriality of Kiesler's stage productions, window displays, and movie theatre architecture, which she discusses in terms of spatial virtualisation.

The issue closes with two contributions articulating two complementary imaginary archaeologies which underpin this process of virtualisation of space, by addressing, on the one hand, the history of virtual reality installations, and, on the other hand, the moving image in one of its most essential forms. While

George Themistokleous' contribution analyses *Osmose* (1995), the pioneering work by Char Davies which marked a turning point in the artistic explorations of the virtual medium, the essay co-written by Barbara Le Maître, Natacha Pernac, and Jennifer Verraes outlines a *mise en abîme* of the immersive condition by drawing on Chris Marker's *La Jetée* (1962). Themistokleous focuses on the unique bodily experience designed by *Osmose* to reveal how virtual reality can engender a "de-automatisation" of sensibility, that is, an un gearing of one's habitual perception, from which can spring the potential for present-day and future VR works. In the analysis developed by Le Maître, Pernac, and Verraes, the complex narrative and the paradoxical temporality articulated by the science fiction of *La Jetée* act as a prefiguration of immersion through memory and time-travel, culminating in a decoupling of the position of the subject, who, suspended between fetishism and narcissism, negotiates a peculiar co-existence between the virtual and the real.

The different approaches to virtuality, articulated by the contributions collected in this thematic issue, reflect as many ways to "think media archaeologically" (Strauven 2012 and 2013), that is, different perspectives towards conducting research in media archaeology, from studying the recurring motif or *topos* of the bubble to tracing discontinuities in the history of the toposcope, from reading the classical history of Renaissance perspective against the grain to conceptually (re)enacting the discursive media invention of the *feelies*, from uncovering the new in the old within the writings of Kiesler to imagining the future of VR and time-travelling by analysing complex narrative structures. Through these diverse contributions and media archaeological approaches, which both look back into the past and forward into the future, the thematic issue as a whole aims at shedding new light on the contemporary mediascape and at stimulating the ongoing debate about virtuality and immersivity.

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De l'intérêt de devenir-bulle: repenser la réalité virtuelle par le biais de la rondeur

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Despite the abundance of technologies available today, moving images still tend to be displayed on flat quadrangular screens. Virtual reality, however, is an exception. Indeed, thanks to the *Head Mounted Display*, it provides a circularization of the image. This paper aims to outline an archaeology of virtual immersive roundness through the prism of a specific metaphor: the bubble. Through the material qualities of the bubble such as transparency, aerial viscosity and elasticity, we can rethink the materiality of virtual reality as well as its historical and symbolic genealogy, from the first hot-air balloons to the inflatable experiments of expanded cinema.

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POÉTIQUE DE LA RONDEUR: UNE HISTOIRE DES FORMES

"Tout être semble en soi rond"
(Jaspers 1947, 54).

À partir de cette phrase du philosophe Karl Jaspers, Gaston Bachelard élabore une réflexion sur la rondeur et plus particulièrement sur ce qu'il appelle: "La phénoménologie du rond". Le rond, ne désigne pas ici la rondeur des choses, mais leur être-en-soi qui posséderait en lui-même une rondeur intrinsèque et première. C'est la vérité, l'essence, qui selon Jaspers et Bachelard, est ronde, et sa rondeur contamine tout l'espace qui l'entoure, allant de la structure de l'univers jusqu'au plus petit oiseau, "oiseau absolu", "boule vivante", "être rond" dont le "cri rond [...] arrondi le ciel en coupole" (Bachelard 1957, 208–13).

Dans sa *Poétique de l'espace*, Bachelard étudie différentes spatialités—parfois marquées par une certaine rondeur—dans lesquelles les êtres construisent leur intimité. Mais c'est avant tout par le langage, le vocabulaire employé par les poètes qu'il en vient à théoriser la rondeur comme forme essentielle de la psyché humaine. Si les métaphores rondes ne sont pas présentes partout dans le langage, leurs apparitions répétées sont très significatives sur le plan symbolique, esthétique et social. On parle de *sphères* publique et privée, de

bulle économique ou encore de *cercle* social. La rondeur fait société. C'est l'objet de l'étude de Peter Sloterdijk qui étudie les différents aspects de la vie humaine selon ce prisme des "sphères". Des sphères qui peuvent exclure, s'étendre ou diminuer, éclater pour être remplacées par d'autres, mais parfois aussi, s'unir comme des bulles dans une écume de savon. Pour lui "la théorie des médias et la théorie des sphères convergent", l'histoire des techniques coïncide avec l'histoire des formes (Sloterdijk 2010, 35).

La réalité virtuelle fait partie de ces nouveaux médiums dont la technologie a pour but, dans ses expérimentations les plus poussées, de proposer une perception globale à son expérimentateur. Par le biais du *Head Mounted Display* (HMD), elle lui permet d'interagir à 360° avec son environnement. La forme de la réalité virtuelle, la forme perçue, est circulaire dans le sens où elle circularise, à partir de l'utilisateur, l'environnement autour de lui. Elle est un être-rond au sens bachelardien du terme, un média circulaire qui convoque très souvent des images de la rondeur.

Cette rondeur peut se manifester formellement et par le biais de métaphores. L'usage de cette figure de style suppose d'envisager le monde, le réel ainsi que la pensée par des images qui sont signifiantes. Si notre objet est la rondeur, que nous considérons la réalité virtuelle comme un être-rond, certaines métaphores qui illustrent cette rondeur seront pertinentes pour la désigner. Plus qu'un dispositif médiatique et artistique, la réalité virtuelle est une *méta-forme* où signifiant et signifié se mélangent indistinctement.

Certaines métaphores de la rondeur ont déjà été employées au sein de la théorie des médias: il y a le globe terrestre du "village global" de Marshall McLuhan (1964), les diverses "sphères" convoquées par Gene Youngblood (noosphère, vidéosphère, technosphère)¹ ou par Régis Debray (médiasphère contenant logosphère, graphosphère, vidéosphère et hypersphère)² qui permettent de retracer l'histoire des médias. On peut également évoquer la métaphore du "ventre", plus organique, employée par Oliver Grau (1999) pour désigner la réalité virtuelle et les médias (panoramas, salles de cinéma...) qui ont précédé dans leur principe, sa réalisation. De même, la métaphore de l'œil, du globe oculaire comme médium primordial est aussi récurrente comme dans le concept de "ciné-œil" de Dziga Vertov (Albera, Somaini et Tcherneva 2018).

Élaborer de nouvelles métaphores éclaire différents aspects, matériels et symboliques, de la réalité virtuelle³. Notre intérêt se porte sur celle de la *bulle*, une image qui n'a pas été choisie au hasard car on peut parfois la rencontrer en tant que motif dans certaines œuvres virtuelles. Sa présence étrange et épisodique éveille la curiosité et pousse, à la manière d'un Aby Warburg, à constituer son atlas transhistorique et intermédiatique pour comprendre et en éclairer l'importance.

On trouve par exemple des motifs de bulles dans l'exposition virtuelle *Spatial Affairs: Worlding* (2021, Fig. 1) organisée par le musée d'art contemporain de Budapest. Accessible sur ordinateur ou par le biais d'un HMD, elle est constituée d'un espace virtuel sombre et sans limites où flottent différentes formes qui se déplacent sur des trajectoires guidées par la bande son. Si le visiteur est

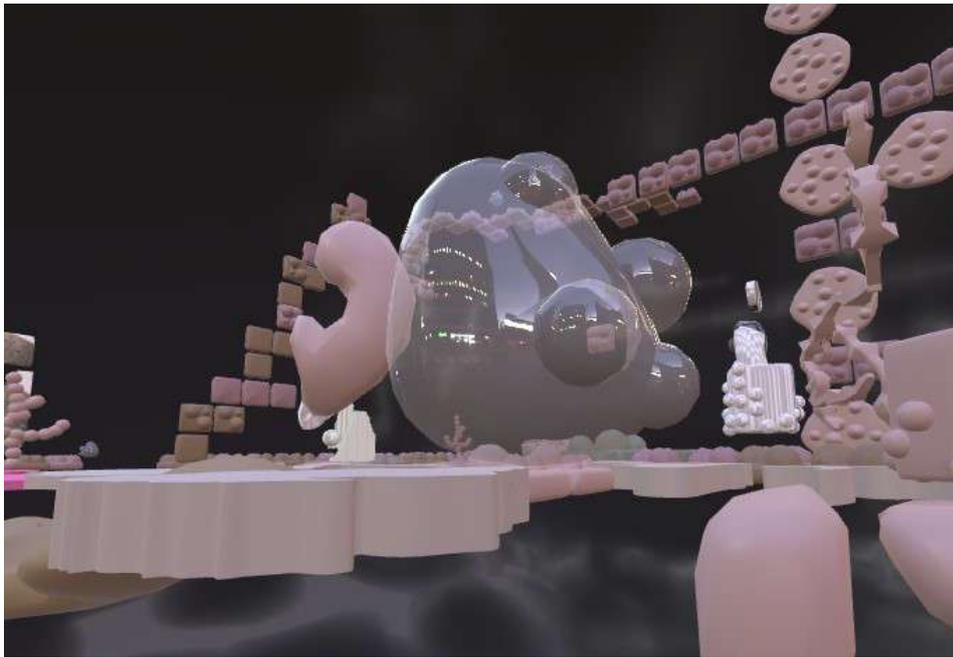


Fig. 1
 Vue de l'exposition *Spatial Affairs. Worlding – A térviláglása*, 2021 © ZKM | Center for Art and Media Karlsruhe, EPFL Pavilions; Design: The Rodina.

attentif, il peut repérer des objets transparents à l'aspect palpitant, des "trous de verre" en forme de bulles permettant d'accéder à différents paysages sonores. Se mouvant avec lenteur, elles ne reflètent pas ce qui les entoure mais un paysage urbain, pourvu d'immeubles illuminés dans la nuit. La bulle et les formes sphériques sont intéressantes pour le virtuel. D'une inquiétante étrangeté flottante, elles invitent à la rêverie et à la contemplation. Leur forme reconnaissable et leur caractère haptique permettent de guider le visiteur et de l'engager à toucher les éléments pour participer à l'œuvre.

Mais la bulle n'est pas seulement un motif, elle s'"environnementalise" (Pinotti 2020, 594). Concevoir la réalité virtuelle comme une bulle, contribue à repenser l'immersion sous le prisme d'une rondeur aqueuse et flottante qui remet en cause le cadre de l'image, sa matérialité et les différents points de vue à son sujet (comment regarder, habiter et interagir avec une ou des images?).

Grâce à cette métaphore, il s'agit d'établir une continuité historique entre différents dispositifs mettant en scène une circularisation du rapport aux images en Occident, une certaine histoire de la rondeur. Ces différentes occurrences empruntent les qualités de la bulle dans différents buts: esthétiques, techniques, sociaux et symboliques. Pour les déterminer, on examinera ce qui fait de la bulle une métaphore et une matérialité intéressante pour les manifestations les plus contemporaines de la virtualité (les œuvres qui nous intéressent sont majoritairement celles accessibles à travers un HMD) (1). Il s'agira de déterminer que l'image-bulle a des qualités qu'embrassent les œuvres virtuelles pour créer de nouvelles formes et repenser l'écran et l'habitabilité des images (2). Pour fonder historiquement l'expérience virtuelle de la bulle, il faudra s'intéresser au XVIIIe siècle et ses premières expérimentations gonflables. Les premières montgolfières mettent en avant un nouveau "désir de bulle", d'être une bulle, de se sentir bulle (3). Leurs différentes utilisations, ludiques et militaires

introduisent une autre facette de la bulle dont la circularisation transparente et aérienne en fait aussi un dispositif de surveillance et de contrôle social (4). C'est cela que les œuvres virtuelles tentent de déjouer (5), notamment les premières d'entre-elles, fruits des expérimentations des artistes de l'*expanded cinema* qui reprennent à leur compte le gonflable, le ballon, la bulle pour donner une nouvelle valeur—fondée sur l'interactivité propre à la rondeur—aux images mouvantes (6).

LA BULLE COMME IMAGE, L'IMAGE COMME BULLE: QUALITÉS VISQUEUSES

Commençons par énoncer les différentes caractéristiques matérielles de la bulle afin de comprendre comment celles-ci sont ensuite réemployées dans le virtuel.

Les bulles sont naturellement présentes sous la forme d'écumes, produites par un bouillonnement naturel de différents liquides. Elles peuvent aussi être créées par une respiration ou de forts courants sous l'eau avant de remonter vers la surface⁴. C'est par l'addition de savon et du souffle à travers un objet creux qu'elles acquièrent leur caractère aérien.

Isaac Newton dans son *Traité d'optique* (1702), expérimente les différentes caractéristiques de la bulle. Il y étudie la dioptrique et la catoptrique c'est-à-dire les différences de réfractions et de réflexion de la lumière en fonction des milieux qu'elle traverse, qu'ils soient une bulle, un prisme, l'air ou la surface de l'eau.

La bulle de Newton est sujet de l'optique, de son étude, mais elle est aussi un dispositif optique. Par sa matière elle reflète son environnement créant des images mouvantes à sa surface. La bulle a une capacité de génération autonome d'images. À partir du moment où elle est lancée dans les airs, elle se déplace comme un prisme mouvant et coloré reflétant de manière déformée ce qui l'entoure. En fonction de la lumière environnante et de la distance entre le regardeur et la bulle, celle-ci peut apparaître comme un miroir déformant du monde ou bien comme une masse transparente, colorée et sans reflets.

La mouvance des images à la surface de la bulle est rendue possible par son caractère aérien mais aussi grâce au savon qui la compose. Le savon a un double effet: d'une part il permet à la bulle de ne pas éclater en équilibrant la pression interne et externe de l'air; d'autre part, en fonction de la quantité de savon, différents effets peuvent surgir. Si le film de la bulle est très épais, le savon tourbillonne à la surface, créant de nombreuses lueurs colorées. Quand la bulle est entraînée vers le sol par la gravité, le film se rétrécit, devient argenté puis noir (King n.d.). Les capacités réflexives de la bulle sont donc impactées par ces variations savonneuses favorisant la création d'images et le devenir-

image de la bulle elle-même.

Il existe des bulles de toutes les formes, toujours arrondies mais sans cesse changeantes. Une bulle peut s'unir à une autre et varier en taille de façon prodigieuse. Elle possède ce qu'on pourrait appeler une "viscosité cinématique". La viscosité signifie en terme scientifique "la capacité d'un liquide à s'épancher" c'est-à-dire, la manière dont il se propage dans l'espace avec plus ou moins de retenue en fonction de sa composition (Chartrou 1931; Le Gall 2022, 302). Elle désigne aussi une qualité matérielle: le visqueux. Le visqueux possède une matérialité très organique, épaisse. Il peut se toucher et se déformer avec lenteur. La bulle, par ses capacités déformantes, sa possibilité de s'étendre ou de se rétracter tout en créant des images, a quelque chose de cette viscosité même si elle la déjoue simultanément par sa fragile légèreté⁵.

Cette matière à la fois visqueuse et aérienne se retrouve très souvent mise en jeu dans la réalité virtuelle notamment dans les œuvres qui créent de toute pièce des images par le biais de la modélisation 3D. Les différents éléments, les corps, les objets, peuvent alors s'étendre, se déformer à l'envi comme s'ils n'avaient pas de structure.

Martina Menegon utilise le corps comme matière première de ses œuvres. L'usage de la réalité virtuelle lui permet de l'expérimenter sous toutes ses formes. Ses créations de chair virtuelle poussent parfois la déformation jusqu'au dégoût. C'est le cas de l'œuvre *keep in touch* (2019) qui représente dans un environnement virtuel des mains séparées de leurs corps, graisseuses et difformes, qui entourent et suffoquent le visiteur par l'image et le son. L'œuvre joue de manière ironique sur le toucher propre au virtuel provoquant une sensation inquiétante, entre saturation des sens et absence de matière physiquement tactile. Paradoxalement, "l'emphase mise sur la nature matérielle (de la réalité virtuelle) [...] mène à l'immatérialité" (Pantenburg 2014, 113).

Les formes sphériques sont idéales pour expérimenter le caractère élastique⁶ de la matière virtuelle. C'est ce que comprend Jeffrey Shaw dans son œuvre *Heavens Gate* (1987), une installation composée d'un grand miroir au sol et d'une projection au plafond qui alterne dômes peints de la Renaissance et vues satellites de la Terre ensuite modifiés par un logiciel pour créer des anamorphoses circulaires. Les images se forment et se déforment dans un rythme hypnotique contribuant à une dé-hiérarchisation de l'intérieur et de l'extérieur des choses, les images étant contenues les unes dans les autres. Elles ne sont pas conçues comme des surfaces plates mais comme des objets en trois dimensions. Par l'arrondissement visqueux des images le caractère haptique de l'écran est renforcé. L'écran quadrangulaire qui agissait comme une "coupure" entre l'image et monde (Charbonnier 2007, 29) laisse place à un écran sphérique qui étend l'image et *fait monde* ou, du moins, qui en floute les limitations.

LE CINÉMATISME DE L'IMAGE-BULLE: REPENSER L'ÉCRAN ET LE MONTAGE

Une autre notion importante est le "cinématisme" de cette "viscosité". Il contribue à créer un lien ontologique entre le devenir-image de la bulle, le cinéma et par extension la réalité virtuelle.

D'un point de vue scientifique, ce terme désigne le mouvement (*kinéma*) du liquide visqueux qui s'épanche. Mais le cinématisme a un double sens, plus profondément lié à l'histoire du filmique. Tout d'abord car c'est par ce mot que Sergueï Eisenstein désigne "toutes les formes dans lesquelles les procédés constitutifs du cinéma [...] se sont manifestés *au-delà des limites du cinéma lui-même*" (Somaini 2011, 2). Ces dépassements cinématiques se trouvent dans d'autres arts qui, inversement, peuvent à leur tour se prolonger dans le cinéma. Le cinématisme va au-delà du cinéma et il peut trouver un écho au-delà de l'art même, se trouvant "en puissance" dans le quotidien (Albera 1980, 8). Erkki Huhtamo (2004) en faisant une "écranologie" montre que l'origine de l'écran tel qu'on le connaît de manière contemporaine se rencontre historiquement dans des objets domestiques: des écrans de cheminées du XVI^e siècle aux paravents des maisons victoriennes et leurs narrations séquencées (Huhtamo 2004, 35-43).

L'écran est une des manifestations du cinématisme mise en avant par Eisenstein. Son intérêt pour ce dernier vient d'abord d'une volonté de sans cesse le dépasser, soit en s'y attaquant directement en voulant le déchirer⁷, soit par le biais du montage qui permet, en fonction de ses usages, de vaincre la platitude des images⁸.

La réalité virtuelle se situe dans le prolongement des processus cinématiques évoqués par Eisenstein et à l'inverse, elle trouve également certains de ses principes fondateurs dans d'autres dispositifs, objets et éléments, en amont de son *invention*⁹ dans les années 70 (Rogers 2019, 141). L'écran et la remise en question de son caractère plat et quadrangulaire, en font partie. Empruntant la rondeur de la bulle, les écrans virtuels circularisent et étendent leurs formes et leurs images pour les rendre habitables.

Certaines caractéristiques de la bulle font de sa surface un écran. Cette qualité est due essentiellement à sa composition aqueuse, l'eau étant un "écran naturel" (Vaughan 2019, 342-355) ce qui élargit encore sa définition au-delà du technologique. L'eau possède en effet toutes les caractéristiques réelles et symboliques de l'écran: elle produit des images en mouvement, fonctionne grâce à la lumière, est fondamentalement "biface" (Katz 2004, 11) étant un seuil qui sépare deux environnements différents et surtout elle autorise la réalisation du vieux fantasme d'une traversée du miroir (Huhtamo 2004, 60). L'eau mobilise l'immersion au sens le plus littéral du terme¹⁰ car une fois au-dessous de sa surface, elle offre un environnement à 360° où le corps est enveloppé, sans aucune autre distance que sa propre peau, par ce qui l'entoure.

La bulle emprunte à l'eau nombre de ses caractéristiques écraniques et en

exploite aussi les possibilités plus aériennes. Si l'eau, sous sa forme liquide, se meut dans toute sa matière pleine, la bulle quant à elle, est avant tout une forme flexible, définie par un écran qui cultive le vide. Elle reste un seuil mais d'une grande transparence, ne contenant que de l'air. L'écran de la bulle ne possède pas autant de mystère qu'un écran de cinéma ou que la surface sombre d'un lac. Il ne fait pas obstacle mais il est tout de même un seuil qui, si l'on décide de le franchir, disparaît. Éclater la bulle, c'est donc prendre le risque de dissiper l'image reflétée du monde et de se retrouver tout entier englobé à l'intérieur.

L'œuvre virtuelle d'Olivia Mc Gilchrist, *Island VR* (2019), conçoit à travers un HMD une superposition de paysages archipélagiques filmés à 360° où se déroulent de nombreuses performances, tantôt sur une île, tantôt dans une pièce fermée. Les prises de vues à 360° situent le spectateur au creux d'une bulle transparente dont on perçoit l'effet déformant au-dessus et en dessous de soi, à l'endroit où les images se rejoignent, ainsi que par le biais du montage qui surimprime entre elles différentes prises de vues.

La présence de l'eau dans l'œuvre est récurrente. Elle permet aux images et aux sonorités de se confondre avec fluidité. Le haut et le bas se mélangent, tout comme le jour et la nuit, le ciel et la terre, les corps et le paysage¹¹. Grâce à l'usage de la surimpression, Mc Gilchrist exploite les capacités de l'écran-bulle, de la transparence et de la virtualité de ses images. Semblable à différentes couches de film savonneux qui éclateraient les unes après les autres, chaque image s'efface lentement pour laisser advenir une nouvelle. L'image se déploie alors dans toute son "intelligence liquide" (Wall 2011, 175-78), l'écran-bulle déformant l'image jusqu'à ce qu'elle prenne tout l'espace.

Concevoir un écran sphérique sur le modèle de la transparence visqueuse de la bulle innove dans la monstration des images mais aussi, sur les différentes potentialités du montage (Somaini 2010, 54). Il est rendu visible par la surimpression et par des prises de vues des notes venant des carnets de l'artiste contenant de nombreuses indications informatiques qui expliquent comment l'œuvre a été faite. Ici, la bulle comme la réalité virtuelle s'affirme comme des réalités artificiellement créées. Leur transparence et élasticité déjouent les dynamiques enfermantes de l'écran rectangulaire. Elles remettent en question—en ménageant un espace de réflexivité critique—la dimension de contrôle et de surveillance qui est aussi associée historiquement à la forme circulaire et à la transparence (Somaini 2011).

MAÎTRISE DE L'AÉRIEN ET DÉSIR DE BULLE

La bulle et la réalité virtuelle sont le fruit d'un mélange paradoxal de liberté et de contrôle. Liberté des formes, du contenu, de la matière des images et de leurs dispositions narratives. Contrôle car toute liberté est le résultat d'une programmation préalable que ce soit par la forme du dispositif circulaire qui peut créer la bulle ou par le *mapping* de l'environnement virtuel.

Olivia Mc Gilchrist, en dévoilant ses notes écrites, joue de la transparence de la bulle virtuelle et met en lumière l'aspect programmé de cet espace où chaque interaction entre l'expérimentateur et l'œuvre se fait en fonction de ce qui est autorisé ou non par l'artiste. La bulle et son aboutissement virtuel est aussi l'histoire du contrôle d'un élément difficilement maîtrisable que ce soit la fragilité d'une bulle de savon ou le libre arbitre d'un esprit humain.

Historiquement, ce désir de maîtrise de la bulle s'établit pleinement au XVIII^e siècle, moment où Newton écrit les règles qui la régissent. Le XVIII^e siècle est un siècle de rationalité et les lois édictées par Newton doivent aider à "neutraliser la puissance de distorsion d'un milieu" et non pas à en exploiter les joyeuses déformations (Crary 2010, 108-09). La bulle du XVIII^e siècle est une bulle que l'on observe d'abord de l'extérieur, par un regard scientifique et rationnel. Un regard qui met aussi la transparence comme principe premier de la raison dont la "vision droite" et "pénétrante" ne peut souffrir d'aucun obstacle (Alloa 2008, 1). Pour cela, quoi de mieux que de prendre un peu de hauteur?

Le rationalisme du XVIII^e siècle érige la distance avec le monde comme principe fondateur de la raison (Crary 2010, 75-78), or l'éloignement maximal à partir duquel on peut observer la réalité est celui qui consiste à cartographier la Terre sous la forme d'une sphère vue d'en haut et cela depuis l'Antiquité (Doridot et al. 2019). La rondeur est une fois de plus la forme privilégiée pour représenter le monde. Cette vision, jusque-là théorique, va prendre un tournant majeur avec l'invention par les frères Montgolfier du premier ballon à air chaud en 1782. Non seulement la Terre peut désormais s'observer à l'œil nu comme un objet cinématique que l'on expérimente en mouvement, mais en plus le corps prend son envol, éprouve de nouvelles sensations comme celle de ne plus avoir de poids ou d'être flottant. Poussons la métaphore: la personne transportée par la montgolfière expérimente dans son corps ce que cela fait d'être flottant, d'être bulle, de devenir-bulle. C'est ce que retranscrit Tomás Saraceno, dans son œuvre virtuelle *AEROCENE: FREE THE AIR. "Orbit-s" For a Post-Fossil Fuel Era* (2022), qui propose au visiteur de prendre la place d'un ballon météorologique qui flotterait en fonction des mouvements de l'air autour de la Terre. Le visiteur se fait un avec l'air, matérialisé par ce qui ressemble à de grands tunnels gonflables colorés au-dessous desquels on peut observer la planète bleue virtuellement reconstituée.

Hormis le caractère poétique de la montgolfière, son utilisation n'est pas seulement celle du loisir. Elle est également employée militairement pour la fuite des Parisiens lors du siège de la Capitale pendant la guerre franco-prussienne et comme simples postes d'observations sur certains champs de bataille (Jirat-Wasiutyński 1992, 196-7). Odilon Redon dans son estampe *L'Œil comme un Ballon bizarre se dirige vers l'Infini* (1878-9) illustre bien la montgolfière comme un outil d'élévation du corps, de transcendance de son poids vers une légèreté spirituelle¹². Mais si cet œil immense, machinique et surplombant est tourné vers le ciel, il peut également, se pencher pour surveiller les choses terrestres [Fig. 2]¹³.

Liberté de l'envol et pourtant volonté de contrôle par l'aérien, un paradoxe qui

Fig. 2 (next page)
Odilon Redon, *L'Œil
comme un Ballon bizarre
se dirige vers l'Infini*,
1878-9, fusain sur papier,
New York, Museum of
Modern Art.



trouvera son aboutissement avec la conquête spatiale et la création de satellites, gigantesques caméras tournées vers la Terre. Le vaisseau spatial, le satellite, c'est la montgolfière ultime, le flottement le plus absolu grâce à l'absence de gravité. Mais le satellite est aussi un outil de surveillance dont la manifestation virtuelle la plus connue est Google Earth (Helmreich 2011). Chaque dimension de la Terre est ainsi scrutée, photographiée et rendue virtuellement accessible par le biais de son interface.

HABITER LA BULLE: SE JOUER DU PANOPTIQUE?

La surveillante rondeur se pratique d'en haut et se vit aussi de l'intérieur. Si la fin du XVIII^e siècle est marquée par la maîtrise de l'air, elle est aussi le temps de la conception du *Panopticon* de Jeremy Bentham. Le panoptique, véritable machine optique, organise la rondeur selon un système de surveillance voyeuriste. Elle est architecturalement, une version plus "légère" des anciennes maisons de sûreté en ce qu'elle ne se construit plus comme une forteresse imprenable mais sur un régime de la transparence et de l'organisation rationnelle où il suffit, pour que l'ordre soit établi, de simuler la surveillance constante par une tour centrale faisant office d'œil unique et circulaire. Le panoptique réinvente la claustrophobie, les murs et les surveillants n'étant plus visibles mais sans cesse virtuellement présents dans les pensées d'une conscience collective rendue paranoïaque (Foucault 1975, 233-36).

Cette surveillance totalisante conçue par Bentham trouve d'autres ramifications au XIX^e siècle y compris dans le rapport aux images. Les panoramas en sont l'un des témoins les plus vivaces, véritables machines de vision cinématique, entourant le visiteur d'images (Grau 2003, 52-139). Elle s'accompagne d'un changement de point de vue: à l'image de la tour centrale du panoptique, le contrôle ne se fait plus d'un point de vue extérieur et aérien mais au cœur même des choses. Le corps, jusque-là rejeté dans une cellule fermée ou une chambre noire, devient le centre de toutes les préoccupations et de tous les dispositifs de vision (Crary 2010, 77).

Les progrès de l'architecture de verre au XIX^e siècle, mettent le corps sous serre par des vitrines, des morgues¹⁴ puis de véritables dômes de cristal. Ce changement de place de l'observateur fait que ce n'est plus lui qui s'adapte à des structures préexistantes mais les structures qui s'organisent autour et à partir de lui. Le circulaire a une place de choix dans cette nouvelle conception du corps étant l'une des formes qui permet le mieux de l'entourer, de le contenir, mais aussi de l'exclure. La transparence neutralise les obstacles à la vision mais exclu le corps des passants par le verre tout en laissant leurs reflets se confondre avec l'objet de leurs désirs (Alloa 2008, 7). Le corps du XIX^e siècle,

devient lui-même transparent, absolument visible mais intouchable. Fantômes reflétés, les visiteurs se font les surveillés-surveillants et les consommateurs-consommés de la rondeur vitrée.

La réalité virtuelle est un prolongement de ces différents dispositifs de circularisation du corps et du regard. Elle rejoue et par la même occasion, *se joue* de cette volonté panoptique. On a pu voir, dans l'œuvre d'Olivia Mc Gilchrist, l'importance de montrer la structure de l'œuvre. Par ce moyen, l'œuvre virtuelle gagne en réflexivité critique. Les "architectures de la transparence", panoptiques, panoramas et la réalité virtuelle ne sont pas des dispositifs qui supposent, au premier abord, de ménager une distance entre leurs visiteurs et ce qu'ils voient, leurs fonctionnements internes étant dissimulés ou rendus transparents au regard¹⁵. La réalité virtuelle est une mise en scène, une simulation, elle est un exemple de maîtrise et de contrôle de la bulle et de ses qualités. Mais c'est sa virtualité, son extensibilité matérielle et de possibles qui lui permettent *aussi* d'éclater la bulle. C'est seulement dans le virtuel, que l'on peut à la fois conserver la bulle et la faire disparaître de manière simultanée.

De cette manière, la réalité virtuelle exploite pleinement son potentiel circulaire et sa possibilité de convoquer en un seul environnement, différents points de vue et temporalités (qualité hautement panoptique). En tant qu'objet cinématique, la bulle virtuelle peut étendre et contracter l'espace et le temps qu'elle contient (Pantenburg 2014, 113). Dans l'œuvre *World and Place Evaporating* (2017), Christopher Manzione et Seth Cluett créent une clairière virtuelle où se situent différents écrans et/ou ouvertures vers d'autres environnements filmés avec une caméra 360°, chacun ayant une sonorité différente. Sur l'un de ses écrans le visiteur se trouve confronté à son propre reflet, le HMD étant pourvu d'une caméra qui filme en temps réel une installation pourvue sur l'un de ses murs d'une plaque souple agissant comme un miroir déformant [Fig. 3]. Une fois touchée, cette dernière semble rebondir, comme la



Fig. 3
Christopher Manzione,
Seth Cluett, *World and
Place Evaporating*, 2017.
Courtesy of the Artist.

surface gonflée d'une bulle. Renouant avec le narcissisme inhérent à l'image vidéo que décrit Rosalind Krauss (1976), l'œuvre donne l'occasion au visiteur de voir l'extérieur de l'installation virtuelle en même temps qu'il est à l'intérieur. Mais là où Krauss voyait dans les autoportraits vidéo une absence de distance critique qui enferme artiste et regardeur dans l'œuvre, Manzione et Cluett permettent, par la conscience d'être à la fois ici et ailleurs, l'avènement d'une réflexivité qui considère l'espace immersif non pas comme un donné fermé sur lui-même, mais comme une construction de laquelle, comme d'une bulle, l'on peut se sortir.

De la sorte, si la première impression est celle d'un renforcement claustrophobique où la seule image de l'extérieur est celle du visiteur lui-même, la seconde est celle d'une ouverture sur l'extérieur, d'une possibilité pour différentes réalités, de communiquer, de se joindre par le biais de ces surfaces transparentes, comme des bulles en coalescence. De cette manière, les artistes se jouent de la hiérarchisation entre la "prétendue réalité"¹⁶ et la réalité virtuelle. La réalité virtuelle ne se conçoit pas comme un espace fermé et excluant, mais comme une réalité poreuse, jouant sans cesse avec le dehors et ses propres limites. L'usage de la bulle confond les oppositions entre intériorité et extériorité, d'une vue d'en haut et vécu d'en bas, d'être vu et de voir en *se voyant vu* (Merleau-Ponty 1964, 294), faisant cohabiter le tout dans un espace aux extensions multiples.

“QUELLE SERAIT LA FORME DU CINÉMA INTERACTIF?”¹⁷

Se jouer du panoptique signifie par extension, jouer avec le panoptique. Outre ses qualités plastiques nombreuses, la bulle est un outil très marqué symboliquement étant souvent employée comme un *memento mori* dans les vanités (King n.d., 10-14). Mais elle est aussi un élément ludique, d'émerveillement enfantin, un objet du présent et de l'amusement immédiat. Elle est une matière interactive que le regardeur peut expérimenter en la touchant (au risque de la faire disparaître). C'est cette ludicité inhérente à la bulle qui la rapproche aussi de la réalité virtuelle, interactive par essence, et permet de comprendre la pertinence de son usage dans ce contexte.

Les différents dispositifs précédemment cités sont tous des appareils ayant à voir avec la création d'environnements, d'images mouvantes plus ou moins habitables. Chacun, à sa manière, a un lien historique avec le "cinématisme" d'Eisenstein en tant que précédent du cinéma et on l'a vu, de la réalité virtuelle. Ils permettent de concevoir les images dans leur dimension "élargie", anticipant ce qu'on pourrait appeler de manière plus contemporaine: "*expanded cinema*" (Somaini 2010, 55).

Le "cinéma étendu" des années 60 est l'un des mouvements qui s'est le plus

emparé de la rondeur pour étendre spatialement le filmique hors de son cadre rectangulaire. Le terme a été construit par l'artiste Stan VanDerBeek (Pantenburg 2014, 109–10) et prend pour modèle une œuvre conçue par l'artiste, *Moviedrome* (1957–63). Elle est composée d'un dôme au sein duquel étaient projetées des images plus ou moins mouvantes, déracinées de leur contexte d'origine pour constituer une gigantesque "bibliothèque" d'images, idéalement interconnectée à d'autres *Moviedromes* qui recevraient leur contenu depuis un satellite dans l'espace (VanDerBeek 1966). La pensée de VanDerBeek d'une "culture intercom" est très exemplaire des écrits traversant cette période (McLuhan, plus tard Youngblood) qui anticipent l'arrivée d'Internet. Les *Moviedromes* et le "village global" donnent une *forme* à l'interconnexion de toute chose par le biais des nouveaux médias: celle du globe terrestre. C'est la Terre qui donne une forme au réseau décrit par McLuhan et c'est aussi elle qui est le modèle des dômes de verre géodésiques de Richard Buckminster Fuller inspirant VanDerBeek (Claus 2003, 229). Une planète de forme ronde ou plutôt ellipsoïdale, qui contient en elle-même un rhizome de plus en plus fourni de connexions humaines et non-humaines. Aussi la rondeur des premières formes de l'*expanded cinema*, est très liée à une vision globalisante, aérienne du globe, qu'elle combine une fois sur Terre, avec une intériorité vécue de la forme ronde.

Ainsi, certains artistes de l'*expanded cinema* réutilisent les formes rondes et gonflables des expérimentations aériennes du XVIII^e siècle autant pour leurs potentialités de suspension que pour leur habitabilité terrestre¹⁸. C'est le cas de Jeffrey Shaw, exemplaire en la matière, qui s'associe avec le designer Théo Botschuijver, créant le *Evenstructure Research* group en 1967. Ils y élaborent des dizaines de structures gonflables allant de simples sculptures à de véritables architectures. Pour se faire, ils emploient majoritairement du plastique, matériau économique, pouvant s'installer partout, transparent, réflexif, créant des images de la même manière qu'il permet de voir ce qu'il s'y passe, et surtout flottant une fois l'air à l'intérieur chauffé par le soleil. Le plastique agit ici comme le film d'une bulle, en tant que matériau pouvant "physiquement incarner l'immatériel" (Duguet 1996, 23). Le plastique, plus que le verre, matérialise la bulle. Contrairement à l'architecture de verre qui, malgré ses reflets mouvants reste une structure fixe et pérenne, l'architecture gonflable est beaucoup plus malléable et surtout provisoire. Elle est aussi plus tactile, beaucoup moins excluante pour le corps pour lequel elle se déforme à la moindre interaction tel un "mur vivant" (Müller 1975, 74). Dans le gonflable, le corps retrouve alors une agentivité qu'il avait perdu face au dôme de verre.

Shaw et Botschuijver créent des bulles de plastiques, flottantes et habitables. Une de leur première structure, *Waterwalk* (1968–72, Fig. 4) propose à ses visiteurs de marcher sur l'eau par la rotation d'une structure gonflable quadrangulaire. L'idée ici n'est pas de maîtriser la bulle par le gonflable mais d'en exploiter les capacités les plus ludiques: sa transparence, ses capacités déformantes et surtout interactives pour le corps de ses occupants et pour ceux qui regardent leurs déplacements comiques. Ce qui intéresse Shaw et Botschuijver n'est pas seulement de faire des bulles, mais de transformer

Fig. 4
Jeffrey Shaw, Theo
Botschuijver, Sean
Wellesley-Miller,
Waterwalk, Six Events in
Amsterdam, Amsterdam,
Netherlands, 1969. (photo
by: Pieter Boersma).



l'espace vide qu'elles ménagent en un lieu habitable. Ainsi ils remettent du corps dans les œuvres tout en *donnant un corps* au cinéma, à l'écran et aux images. Exemple de ce "corpocinématisme" (Duguet 1996), l'œuvre *Moviemovie* (1967), une autre grande structure gonflable sur laquelle des films sont projetés et se surimpriment entre eux. La surface de la bulle devenue écran est alors habitée, déformée par les corps de plusieurs performeurs qui jouent avec ses possibilités élastiques.

Mais ces structures gonflables ont leurs limites matérielles. Il leur manque selon Shaw une dimension "intellectuelle" qui ne peut s'exprimer seulement dans le plastique. La pensée doit avoir son propre "espace" qui permette "d'approfondir la complexité des images et des références" (Shaw 1993, 329–30). Les structures gonflables circulaires vont être réemployées par Shaw dans des dispositifs toujours plus ingénieux et interactifs mais en y intégrant le virtuel comme espace offert à l'intellectualité.

L'une des créations les plus intéressantes à ce sujet est certainement *EVE* (*Extended Virtual Environment*) conçue en 1993 pour le ZKM par Shaw. *EVE* est un dôme gonflable dans lequel on rentre par une porte tournante où s'exposent différentes œuvres virtuelles, qu'elles soient de Shaw lui-même ou d'autres artistes, utilisant différents prototypes faisant office de HMD. *EVE* se proclame comme une amélioration de *CAVE* (*Cave Automatic Virtual Environment*), (1991)

car la rondeur est pour Shaw ce qui caractérise le mieux la réalité virtuelle¹⁹. Le cube de *CAVE* est encore trop proche de la salle de cinéma tandis que la bulle gonflable, elle, constitue la véritable *forme* de l'interactivité (Art Asia Pacific 2020). Elle invite à la participation physique des visiteurs car elle est une forme adaptée et adaptable à leurs corps. Lors de l'une de ses utilisations pendant la Multimediale au ZKM, Shaw crée *Telepresent Onlookers* (1995). *EVE*, structure opaque, gagne en transparence grâce à une caméra située à l'extérieur du dôme qui filme en temps réel l'extérieur à mesure qu'elle est dirigée de l'intérieur par un visiteur. Le réel, ainsi filmé à 360°, devient une réalité autre, virtuellement reconstituée sur les parois du dôme. En émerge une œuvre manifeste, l'un des déploiements le plus concret de l'être-rond de la réalité virtuelle. *EVE* montre la nécessité de ménager un temps et un lieu pour voir les images, un espace clos pourtant sans cesse remis en question par l'extérieur qui permet d'habiter l'ouverture, un environnement "incertain" accueillant des images et des êtres "en formation" (Duguet 1997, 27).

DE L'INTÉRÊT DE DEVENIR-BULLE

Les bulles conçues par Shaw et d'autres artisans de la réalité virtuelle autorisent la réunion des contraires: l'aérien et le visqueux, l'extérieur et l'intérieur, l'absence et la présence, le visible et l'invisible, le panoptique et le ludique, la passivité et l'agentivité. Elles sont l'aboutissement de différents dispositifs qui explorent tous ces dualismes en les arrangeant différemment à chaque occasion selon leurs possibilités matérielles.

La bulle parcourt l'histoire des formes circulaires et cela depuis les premières montgolfières du XVIIIe siècle européen. Elle atteint autant l'image que le dispositif qui la produit et les corps qui la reçoivent. Au-delà de son emploi poétique, elle a une véritable valeur ontologique en ce qu'elle définit et agence de l'intérieur les dispositifs qui s'en inspirent. Chacun des dispositifs étudiés se rattache à ce "bloc de devenir" bulle, la bulle étant elle-même sans cesse en devenir, multiplicatrice par définition²⁰.

Par la bulle, il s'agit de sortir les images de leurs prédéfinitions matérielles et symboliques, de leurs cadres et écrans rectangulaires tout en faisant une "critique de la raison ronde" (Sloterdijk 2010, 70). Elle est une rondeur qui permet sa propre remise en question possédant une agentivité propre, une capacité réflexive inattendue certainement car elle semble anodine et sans intérêt. Or si l'on examine sa matérialité propre, on comprend que son agencement visqueux est très intéressant pour penser la plasticité des images virtuelles, que sa ludicité et sa temporalité courte, inhérentes à son utilisation, sont aussi complémentaires d'une nouvelle relation, plus interactive, aux images produites par les nouveaux médias.

De plus, malgré son apparence an-historique, la bulle est bien un objet

conceptuel et une forme historiquement située. Sa rondeur et sa transparence, en font l'objet du panoptique, de la raison surplombante et du contrôle social; mais son éphémérité flottante et sa viscosité la placent dans une autre généalogie: celle des structures et architectures gonflables, des montgolfières jusqu'à l'*expanded cinema*. Le fait que l'*expanded cinema* fasse collaborer le gonflable et un virtuel encore à ses balbutiements, est symptomatique de cet héritage historique. Cette histoire de la rondeur, permet ainsi de repenser les manifestations les plus contemporaines du virtuel (comme les œuvres de Menegon, Mc Gilchrist, Manzione et Cluett) sous le prisme de ce que l'on nomme: *devenir-bulle*.

Notes

¹ La "noosphère" est un équivalent du "village global" de McLuhan. Elle contient la "vidéosphère" qui désigne l'art conçu à partir de la télévision et la "technosphère" qui marque les débuts de l'art digital (Youngblood 1970).

² Chaque "sphère" témoigne d'une ère médiatique: la "logosphère" est celle de la transmission orale, la "graphosphère" celle de l'écriture imprimée, la "vidéosphère" celle du filmique et l'"hypersphère" celle du numérique. (Debray et Merzeau 2005).

³ Par exemple, la métaphore ventrale est généralement employée pour souligner le caractère régressif de la réalité virtuelle et de d'autres dispositifs immersifs. Cette métaphore s'accorde souvent avec une vision très psychanalytique des médias, le ventre étant souvent réduit à l'utérus maternel. (Sloterdijk 2010).

⁴ Emmanuel Kant décrit lui-même une expérience faite avec ces bulles sous-marines: "Si quelqu'un, se trouvant sous l'eau, veut regarder vers le ciel, il lui suffit de laisser couler un peu d'huile de sa bouche et l'huile, remontant à la surface, lui ouvre en quelque sorte une petite fenêtre" (Kant 1999, 105).

⁵ Nous conseillons à ce propos, l'une des vidéos produites par la NASA en 2014 dans laquelle les astronautes Steve Swanson et Reid Wiseman expérimentent une bulle d'eau dans l'espace dans laquelle ils submergent une caméra Go-Pro. Consulté le 6 décembre 2022. <https://www.youtube.com/watch?v=9ZEdApyi9Vw>.

⁶ Nous empruntons cette notion d'élasticité de l'écran à Barbara Grespi et Alessandra Violi (2021).

⁷ Eisenstein avait pour projet de déchirer l'écran du théâtre du Bolchoï par la proue d'un navire lors de la projection du *Cuirassée Potemkine* (Olivero 2010, 150-4).

⁸ Eisenstein a conçu un "livre-sphère" comme exemplaire de sa théorie du montage (Somaini 2010, 53-59).

⁹ La notion d'invention, comme rupture dans une continuité qui serait linéaire, est bien sûr à remettre totalement en cause dans le cadre du cinématisme.

¹⁰ Immerger (lat. *mergere*: "enfouir", "plonger dans"): jeter à l'eau, à la mer, plonger dans l'eau, dans la mer (Centre National des Ressources Textuelles et Lexicales).

¹¹ Éric Thouvenel montre que le cinéma des années 1920 en France est fasciné par les images d'eau. La surimpression est alors un procédé très courant de montage accordé à ce genre de sujet (Thouvenel 2010, 66).

¹² Jirat-Wasiutyński souligne les liens très forts entre les gravures de Rodin et le mysticisme ésotérique (195).

¹³ Odilon Redon a d'ailleurs servi dans l'armée de Loire pendant la guerre franco-prusse où les montgolfières étaient utilisées comme points d'observations (Jirat-Wasiutyński 1992, 197).

¹⁴ Voir l'analyse passionnante à ce sujet de Le Gall (2022, 171-228).

¹⁵ L'absence de distance est pour Oliver Grau (2003) un véritable "danger politique" (203).

¹⁶ C'est l'explication fournie par le duo Banz & Bowinkel concernant leur œuvre *Mercury (VR)* (2016) qui utilise ce même système de transparence de l'espace virtuel.

¹⁷ Art Asia Pacific 2020.

¹⁸ Les montgolfières étaient le plus souvent maintenues accrochées au sol (Jirat-Wasiutyński 1992, 197).

¹⁹ "Virtual reality (VR) has made narrative in the round a hot topic." (MEET Digital Culture Center 2021).

²⁰ "Le devenir et la multiplicité sont une même chose." (Deleuze et Guattari 1980. *Capitalisme et schizophrénie*, 305).

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Spot the Fire, Amuse the Alpinist.

The Toposcope, an *in situ* Panoramic Device (1790–1910)

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Initially designed at the end of the 18th century to identify the exact location of a fire during the dark hours of the night, the toposcope became in the following decades a tourist attraction device. Thanks most of all to the work of Alpine and Touring Clubs, the presence of these instruments spread throughout Europe under many names (*Toposkop*, *Indicateur des Alpes*, *Table d'orientation*). Alpine regions have been their crib, but they rapidly reached other environments. Wherever there was a good 360° vision of the surroundings, a toposcope could be placed. They constitute a universe that is as connected as varied. The deep time of their technology and their applicative variations also testify a migratory path which resembles many other panoramic devices. The article aims therefore to media-archaeologically trace the major dynamics of the toposcope. Not to uniform them under a homogeneous history, but to reflect upon its role in defining the modern meanings of mobility and virtuality. In that, the toposcope represents an interesting point of view since, unlike many other panoramic devices, it provides for an *in situ* mediated experience. Sharing some features with Augmented Reality, the toposcope elaborates a different approach to optical immersive experience.

Returning from a holiday in the Schinznach Bad spa in Switzerland, the French illustrator René Lacker published an article in 1895 in which he describes a device that was installed a few steps from the village and extremely captivating for passing tourists: the *Indicateur des Alpes* [Fig. 1]. As Lacker explains:

The utility of this indicateur is to give tourists the names of the mountains they see in the distance, whose uninterrupted extension over almost half of the horizon offers a majestic sight. The system consists of a semicircular table with the round part facing the panorama. On this table there is a ruler that rotates around an axis located in the center of the straight side, forming the radius of the circumference in which the table is inscribed. On this ruler, above the pivot point, there is a viewfinder and at the other end, in the direction of the circumference, there is a sight. On the table and in the respective directions are engraved the names of the main visible mountains. The spectators who want to consult the indicateur must stand on the straight side of the table, facing the panorama. With the ruler rotating around the axis, they aim at the peak whose name

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Fig. 1
*Indicateur des Alpes près
Aarau* (R. Lacker 1895).



*they want to know, as with a rifle, using the viewfinder and the sight;
in this way they find a name on the table next to the sight: it is that
of the targeted peak (Lacker 1895, 101–02; my translation).*

Nowadays this kind of device has become widely used all over the world and can be seen in both mountainous areas and cities, as long as the instrument is positioned in a panoramic spot from which one can view a large portion of the surroundings. However, these devices are no longer called *Indicateur des Alpes*, but it is customary to refer to them as *Toposcopes* or *Table d'orientation* (Orientation Tables).

Throughout the course of this article, we shall endeavor to show how the dual terminology of the apparatus is not accidental, but rather refers to what, after taking up Siegfried Zielinski's media (an) archaeological terminology, are its two main variants: the surveillance form (the toposcope) and the tourist form (the *Table d'orientation*) (Zielinski 2019). An extensive part of the essay is devoted to reconstructing the geographical, as well as the applied and formal, trajectories of these devices throughout the 19th century. Some significant conclusions emerge: despite the versatility of their appearances and the fragmentary nature of the sources, toposcopes show a basic coherence that is built not on technological characteristics but on the relationships that are established between the observer and the environment being observed. In a similar manner to other 19th century devices, such as stereoscopes, toposcopes alter perceptions of a place by bridling the viewer's vision in order to provide iconographic coordinates for surveillance, entertainment, and education purposes (Crary 1990).

Additionally, this scopic dynamic is intimately linked to the ways in which multiple coeval panoramic devices virtualize the environment in order to reconstruct an immersive spatial unity (Oettermann 1980; Huhtamo 2013). A significant distinction exists, however: the toposcope lingers, despite its worldwide spread, a device utterly rooted in its real location. Its characteristics always depend primarily on the morphology and climate in which it is installed. A toposcope is thus perceived as a panoramic device that gives an impression of virtualizing an environment while remaining unmistakably *in situ*: it cannot be erratic; it can only be native.

The *in situ* tag is used in various disciplines (geology, archaeology, surgery...) to define a phenomenon or a procedure inextricably linked to its context of origin. Thus, by adopting this definition for toposcopes, we want to place the emphasis not only on their situated trait, but also on the connection they have with these disciplines. Particularly with geology, which has repeatedly proved to be a fertile ground from which to draw for media archaeology. From its German origins (Kittler 1985; Zielinski 2002) up to present-day reinterpretations of Jussi Parikka for alternative materialism and deep time of the media (Parikka 2015).

The gap that is therefore shaped between the virtualizing instance and the adherence to the real place is relevant not only as a key dynamic for understanding toposcopes, but also as a parallel to some emerging contemporary phenomena, i.e. Augmented Reality. As we will see, both of these instances convey an idea of virtual environment that does not operate by substitution—removing the actual place—but rather by a superimposition of otherwise invisible data and elements over the observer's direct view.

Lacker's article is a valuable starting point for studying the phenomenology of toposcopes since it offers a first trace and starting point for the contextualization of their variants in the technological panorama of the time: returning to the passage in which he deals with other devices encountered during his Swiss tour, Lacker describes the one located on the Lausanne bell tower as follows: "It had been installed so that night watchmen could recognize in the darkness

the village or farm where a fire had just broken out, in order to send help there” (Lacker 1895, 102; my translation).

What Lacker believed to be an isolated case was the result of a much more complex historical dynamic. This represents the keystone for understanding the origin and characteristics of these apparatuses from a media archaeological perspective. It begins with the development of night surveillance and fire detection instruments, generally known as toposcopes, at the end of the 18th century. In the following decades, however, their original function would be abandoned and they would be readapted for new uses, mainly of a touristic nature, which was then followed by a new nomenclature: *Indicateur des Alpes* in Switzerland and *Table d'orientation* in France. But under these variations, we will see a common, hidden thread: that of the virtualization of environments, understood as an enhancement—an “augmentation”—of the human eye’s capabilities.

THE *TOPOSKOP*: A NOCTURNAL SURVEILLANCE DEVICE

The first traces of the diffusion of the toposcope came around 1790 (Krügelstein 1799). In the German regions, and in particular in Leipzig, it was thought to exploit the combination of a map and a telescope from an elevated position. The aim was to solve a longstanding problem: the difficulty of pinpointing, during the night, the place of origin of a fire. The basic idea was to build a system capable of automatically providing the coordinates of the burning place, simply by correctly orienting a viewer towards the light source. It would seem that Lorenz Pansner was the first to make such an instrument, which he called the *Pyrotelegraph*.

For the device to work properly, it was advisable to choose a panoramic position, so as to be able to observe the territory undisturbed even from many kilometers away. Once the observation point was decided, the instrument had to be securely fixed so that it could not move during use. The next phase was the transcription of the points of interest in the surrounding landscape on a sheet fixed to the quadrant. If these procedures were followed, the observer could thus have determined the location of the fire.

The technology described by Pansner was the same which would later be used by other toposcope manufacturers. However, the *Pyrotelegraph* itself still presented too many technical limitations to be of any practical utility. It was presumably the numerous difficulties encountered in development that discouraged Pansner from continuing his research. His fellow citizen Friedrich W. Voigt took on the task, changing the name of the instrument from the less incisive *Pyrotelegraph* to the more pertinent ones of *Nachtfeuerkunde* or *Toposcop* (Voigt 1803).

While a still predominantly theoretical study was being carried out in Leipzig,

Christoph Kuniß, a Lutheran pastor from the small village of Schwerstedt in Thuringia, built a personal variant capable of providing relatively satisfactory results (Krügelstein 1799, 95–99). Kuniß was forced to adopt a novel approach when he realized it would be impossible to accurately identify a point without the risk of mistaking it for another one, especially at considerable distances. He then installed four toposcopes in his study at the top of the bell tower, one pointing out of each window. Under them, he affixed a composite map not according to a single scale, but to a progressive relationship. This allowed him to keep more track of the farthest spots. Despite being satisfied with his accomplishments, Kuniß was also aware of the unrealized potential of the toposcope and suggested two critical innovations: the first was the introduction of a telescope that could facilitate remote observation; the second was the adoption of a topographical map to immediately find the corresponding place indicated by the instrument.

It took about thirty years to build a device that was convenient and precise enough to be used systematically; not on German territory, but in Vienna, the capital of the Habsburg Empire (Huysbenz 1879, 20–24). The project was carried out by the astronomer Karl Ludwig von Littrow who in 1833 established a system of four toposcopes on the highest tower of Vienna's St. Stephen's cathedral, in the heart of the city [Fig. 2].

Inspired by the functioning of a theodolite, Littrow manufactured his own *Toposkop*, equipping it with a telescope connected to two indicators, which—when the telescope was pointed towards a surrounding location—moved, identifying two different digits. Two unique coordinates which, if the device was

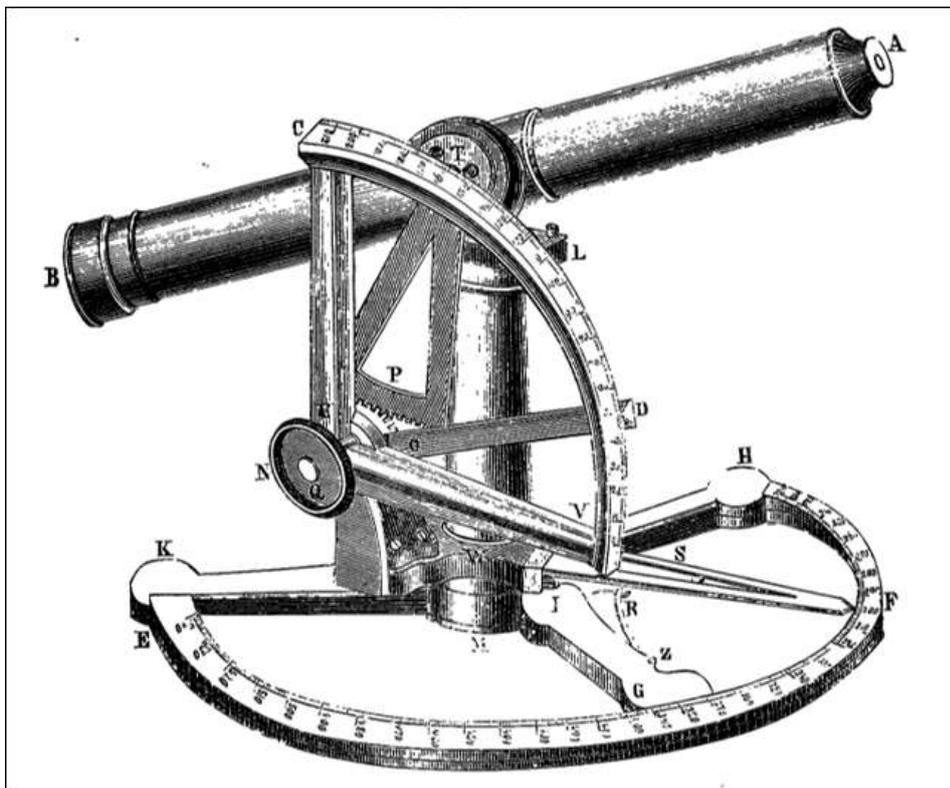


Fig. 2
Sketching of
Littrow's *Toposkop*
(Huysbenz 1879).

correctly anchored to the base, provided the exact combination of a street in the city or a place in its neighborhood. With the transition from a single indicator to two representing no longer a straight line but a single point, the toposcope was finally able to precisely define every visible district.

Therefore, it was necessary to create a register that indicated an exact address, which corresponded to each pair of coordinates. This was done so that, when the fire was spotted, the watchman could immediately read the location's name and send the alarm to the nearest fire station.

The device's coverage was exceptional and it was said that its only limit was the alpine horizon itself. The *Toposkop* remained the pride of the city for several decades. From 1855 the use of the electric telegraph was introduced to communicate directly with the authorities. In addition, starting in 1864, the tower was connected by telegram to eight peripheral branches (*Vienna, guida illustrata della città e suoi dintorni* 1873, 160–61). Unfortunately, the installation—which over the years had also become a tourist attraction—did not survive the bombings during the Second World War.

Although the Littrow version was the most famous and most prominent example, toposcopes were also adopted during the 19th century in other European locations, such as Strasbourg and Munich. In the Alsatian city, Jean-Baptiste and Charles Schwilgué filed the patent for their *Toposcope* or *Chercheur des lieux* in 1845 but, from the extant sources, it would seem that the apparatus did not arouse great enthusiasm (Schwilgué 1857, 115–20).

An example closer to that of Vienna is to be found in Munich. The device, here called the *Pyroskop*, was designed by the physicist and astronomer Karl August Steinheil in 1844. As in the previous cases, the *Pyroskop* was also placed on top of a church tower, in this instance the basilica of St. Peter. This version consisted of eight pieces due to the particular architecture of the room, equipped with two pairs of windows on each side. Each instrument was aimed at the surrounding landscape, using an orientation that allowed it to cover the entire horizon (Bachmann 1991, 135–36).

Contrary to the previous examples, the telescopes were no longer linked to a system of indicator hands. Instead, they were connected to a system of mirrors. These mirrors, by reflecting the light of a candle, projected a light beam on a panoramic image made with a camera lucida and placed just behind the viewer. There, the landscape covered by the instrument was represented according to a precise ratio. This meant that the point marked by the light beam coincided with that observed by the viewer.

Given the scarcity of sources, it is difficult to get a precise idea of the diffusion of toposcopes for night surveillance. Sporadic traces are found in various European cities and towns around the middle of the 19th century, but already at the end of it we see that they have fallen into disuse. The spread of communication tools such as the telephone seems to have made their application obsolete and superfluous. Nonetheless, several of these devices remained in panoramic spots and a new use was already outlining for them.

THE *INDICATEUR DES ALPES*: A MOUNTAIN TOURISTIC DEVICE

The first and most evident case that attests to the presence of toposcopic devices in the regions of the Swiss confederation is the *Toposkop* built in Lucerne by Louis Meyer, one of the city's esteemed entrepreneurial figures and the builder of the *Diorama Meyer* in 1856 [Fig. 3] ("Das Toposkop des Hrn. Ludwig Meyer in Luzern" 1852, 75; Schlinke 1853, 84–86). Valuable and detailed testimony of this instrument has remained:

Those who wish to reach their destination faster and easily can use the toposcope constructed by Captain Louis Meyer of Lucerne and placed under the signal post of Kulmes. The invention is so ingenious and of such great value for many purposes that it should not be overlooked, and a brief description may not be unpleasant to the reader. On two tables, one facing south, the other in the northern semicircle, is displayed the entire panorama of Rigi, with precise outlines and names, the indication of the height above the sea, and the distance in a straight line. A mobile telescope is fixed above the two tables, to which a pointer in the form of a sliding ruler is connected [...]. In the future, the toposcope can play an important role in military reconnaissance and land surveying. Together with the circular color drawn on the board, it conveys simple orientation in a very eye-catching way. When we have pointed through the telescope at any place and want to know what it is, we only need to look at the table, where the pointer tells us what we want to know. A similar device on fire watch towers would be of great use. On the other hand, if we want to examine more closely a place we

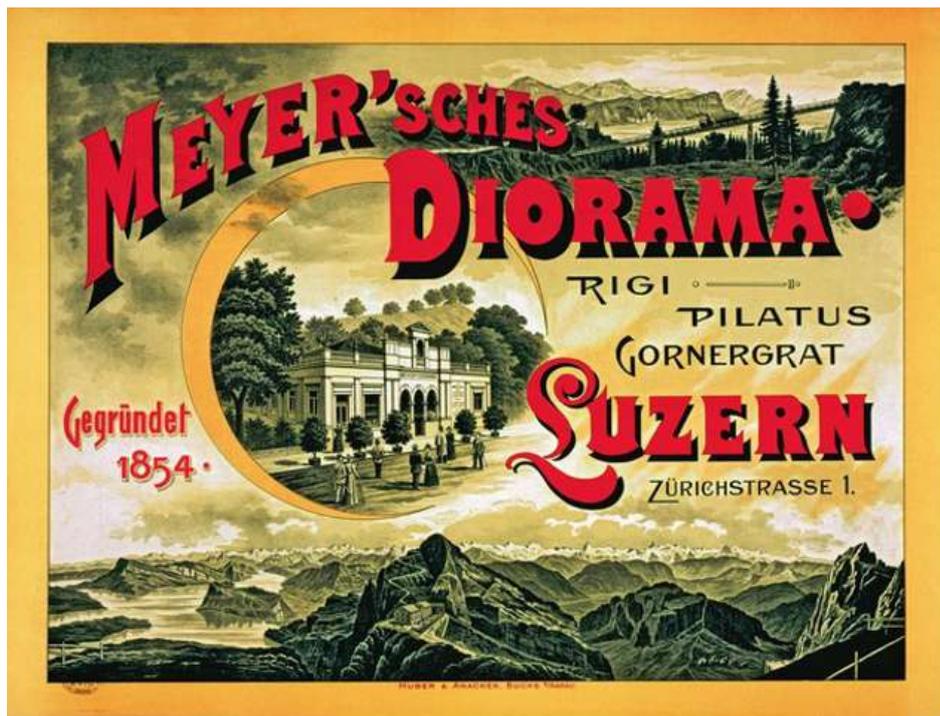


Fig. 3
Poster advertising
Meyer's diorama (Swiss
National Library).

know, we position the needle on the point marked there on the table. In this way, the telescope is aimed with the utmost precision (Schlinke 1853, 84–85; my translation).

The device was very similar to the Vienna toposcope from a technological point of view. Moreover, the instrument was placed on a similar panoramic spot from which the observer could monitor the surroundings. In that setting, though, the landscape was no longer the streets and quarters of a city, but the Alpine panorama. Unfortunately, the Lucerne toposcope suffered the same fate as the others. On July 28, 1852, some mountain guides destroyed the two boards and the lack of measures to protect the instrument by Swiss authorities prompted Meyer to suspend its restoration.

Here, however, the emphasis was not at all on the surveillance potential of the instrument, but rather on its ability to make the observer appreciate the beauty of the landscape. We see a sort of historical reversal: according to this and other testimonies, the nocturnal use of the device goes from being its main practice to one of its possible reuses. In this new perspective, a toposcope can be employed not only to locate fires, but also to sketch panoramas and to study the terrain in topographical as well as military terms. The whole Swiss experience of these devices is precisely described as one that breaks away from their original application, as they become instruments of visual enhancement for admiring the Alps. Following this revised meaning, the Swiss variants would represent a further “step forward” compared to the Littrow and Steinheil toposcopes, since they were characterized by an easier system that allowed for the immediate orientation of the viewer and provided the specific name of or data about a mountain.

The redesign of the toposcope for tourist uses and the simplification of the device are the two turning points for the diffusion of these instruments in numerous Swiss locations during the second half of the 19th century under the new name of *Indicateur des Alpes*, which emphasizes their clear affinity with both the Alpine territory and their illustrative function in providing information to an observer standing at the foot of the Swiss peaks. The term itself is almost coeval with that of the toposcope—at least in the Helvetic context. The lexical mixture between *Toposcope* and *Indicateur* is also evidenced by a number of examples in which the two terms alternate as synonyms (Tschudi 1899).

In 1882, one of the most significant of these new devices was installed in Neuchâtel, near the French border. It was an operation considered to be of public value, carried out by the Conseil général de la municipalité. However, the construction of it was also entrusted to an expert body: the Swiss Alpine Club. In summary, the municipality initially bought the land and then made it available to the Club, which was responsible for building, installing, and maintaining the *indicateur*. You can get an idea of the meaning that was attributed to the device in the report on the inauguration ceremony, on April 18, 1882:

Placed on a charming semicircular pedestal, the orientation table dominates the area in this place of Chaumont, from which the view

is the widest and most pleasing to the eye [...]. What feeling does not seize you when you recognize in the distance, by means of landmarks engraved on the table, the peaks on which you have set foot, the glaciers you have crossed, the snow-free slopes you have climbed. We immediately forget the worries and dangers and think only of the radiant horizons of purple snow, the invigorating air that we breathe with full lungs, the wonderful carpets of flowers with which nature has so richly decorated our Alps, the joyful meals that end the days of arduous climbs ("Indicateur des Alpes" 1882, 3; my translation).

Judging from the sources found for other Indicateur constructed during that period, the method adopted in Neuchâtel, with the cooperation of local authorities and the Swiss Alpine Club, was the standard procedure (*L'Echo des Alpes* 1894, 41).

It can be said that, towards the end of the 19th century, the phenomenon spread widely in the alpine regions that were popular tourist destinations, with particular frequency in the French-speaking ones. The main reason for the discrepancy between the high number of devices present in Switzerland and the few that were recorded in neighboring countries is probably to be found not in a hypothetical technological gap, but rather at a different organizational level: the high costs and the low (or nonexistent) remunerability of the devices required the initiative of entities able to cover the costs as well as effective coordination with local authorities which, initially, was only seen in the territories of the Confederation. It's worth noting that there are quite a few notable exceptions, as exemplified by the Novara *Indicatore*, the first Italian example ("Speciali deliberazioni della Direzione Centrale" 1878, 9–10).

In France, a new phase would start with the entry of a new player: the French Touring Club, which was able to be active in that country in a very similar way to the Swiss Alpine Club in Switzerland. As a result, the production and installation of *Indicateur*—now mainly referred to as *Table d'orientation*—drastically accelerated (Berthelot 1901).

THE *TABLE D'ORIENTATION*: A GEOGRAPHICAL EDUCATIONAL DEVICE

Returning to the article written by Lacker, we can now analyze the reactions that the text aroused in various readers of "La Nature". A response was that of a French traveler, H. Anot, who cited an example of an already existing table on French territory: in Lyon, at the Fourvière observatory, and which was by far the most beautiful he had ever seen (Anot 1895). The device is still visible nowadays, but a detailed description of its original form was provided by an anonymous citizen of Lyon in a booklet entitled *L'observatoire panoramique de la Basilique de Fourvière* (1896).

The author opens his pamphlet starting with a reflection on Lacker's article

and on the responses aroused to justify his illustrative volume on what he called a *Panoramic observatory*, which was installed as soon as the construction of the basilica was completed in 1884. The church had been erected on the top of the Fourvière hill, a place historically known for the incomparable landscape that could be admired from there. The device was placed on the top of one of the four towers that stand at the corners of the church. At the tower's summit, it was possible to accommodate up to one hundred and fifty people between the cross fixed in the center and the external parapet. That was where the finely decorated circular table was placed [Fig. 4].

Contrary to the previous examples, the panoramic drawing was the result of a very elaborate artistic operation. However, beyond its particular aesthetic value, the table showed the surrounding landscape as usual, accompanied by the customary cartographic information (altitude of the mountains, bird's-eye distances, and points of general interest; not to mention the direction of the main cities of the world, from New York to Beijing and from London to Rome).

But, if there was no significant compositional difference, the Fourvière table could boast a more sophisticated technological apparatus than the devices generally found in the French territories. Rails were placed above the circular table and a large telescope could roll along them enabling even the most distant peaks to be seen clearly. This powerful device seems to have been so successful that, soon after the inauguration, the administration offered visitors the possibility of renting binoculars from the guards so that they would no longer have to wait their turn at the powerful telescope.

In the final pages of the booklet, the author recounts the experience of the panoramic observatory during the Exposition universelle, internationale et coloniale held in Lyon in 1894. Approximately one hundred fifty thousand people climbed to the top of the tower to enjoy the view. However, he explains, with results that were not always satisfactory: "Too often it [the landscape] hides itself under an impenetrable veil of mist, which no telescope can pierce and which offers only its uniformly grey surface to the disappointed curious" (*L'observatoire panoramique de la Basilique de Fourvière* 1896, 33; my translation). Therefore,



Fig. 4
Portion of a 360° image
of the *Observatoire
panoramique de
la Basilique de
Fourvière* nowadays.

despite the fact that it represented the most sophisticated and refined example of a toposcopic device, the panoramic observatory of Fourvière cannot be said to have been the most successful since the meteorological conditions represent a *sine qua non* for this type of instrument to be properly appreciated.

The dependence of the usefulness of a toposcope on the surrounding climatic and morphological factors is further confirmed by the next example. Another important response to Lacker's article was, in fact, that of Charles Alban Fournier, then president of the Vosges Alps section of the French Alpine Club. Fournier retorted by pointing out that there were already five different *Table d'orientation* installed in France, thanks to his section. He explains the many difficulties involved in installing these tables:

It was not easy to find a practical solution for this type of tables: in Switzerland, where tourists come in droves, especially at well-known points, you can make these installations, like the one described by Mr. R. Lacker; you can put a guard to watch them and charge a fee [...]. In the Vosges, you needed a table that could be left and was strong enough to withstand the climate, the rain, the snow, the cold, the cattle and also—unfortunately—the man! So, it was out of the question to put these delicate apparatuses there. It had to be solid, massive, indestructible, so to speak, and free for the passersby (Fournier 1895, 170; my translation).

In the Vosges, the devices are completely isolated and exposed to severe weather conditions that alter their characteristics. This is why that dynamic of apparent "simplification" which we witness in the variations from the surveillance *Toposkop* to the *Table d'orientation* is best defined as a process of eliminating the most vulnerable technical elements. Another fundamental aspect was the impossibility of obtaining any remuneration from the tourists who used the tables: this aspect inevitably affected the economic possibilities for the construction and preservation of the devices.

With the entry of the French Touring Club, the spread of tables experienced a significant uptick. At the beginning of the 20th century, the discussions about the toposcopic phenomenon shifted from proving the legitimacy and value of constructing these devices, aspects now ascertained given the numerous appreciations from tourists and Club members, to questioning the most correct methodology for creating them. For example, the adoption of more systematic procedures for the construction of the devices began to be proposed. Far from a simple request precisely because, as we have seen, each location had different possibilities and different criticalities. Another query was whether or not to use panoramic photography for the creation of the tables: was it advantageous to use a photogrammetric method to translate a shot with devices such as the *Panoram Kodak* or the *Périgraphe instantané* into a geographically valid circular image or was it preferable to stick to the traditional topographic drawing operations (Eydoux 1905, 84–87)?

Among the various discussions of these years, perhaps the most significant was that presented by the French geologist Philippe Glangeaud. He wrote an

article in 1912 in which he reflected on the nature of the *Table d'orientation*, questioning above all their informative value and the idea of geography they conveyed. He pointed an accusing finger primarily at the habit of accompanying the image exclusively with merely notional information:

It does not seem to me necessary at first to give and keep the names of all the mountains or hills that are seen, nor their heights. Both are generally too numerous on any table, which leads to unnecessarily clogging it up. It would be better to emphasize above all the main points of the landscape, which are often drowned in the midst of secondary points. It is not appropriate, of course, to eliminate all memory issues; but they must be reduced to the proper level and arouse more of a spirit of curiosity, observation, thought, and discussion in the public. The current tables do not accomplish this goal; nor do the guides generally provide the documentation needed to understand what one is seeing. Above all, the tables offer only a cold enumeration of names and numbers (Glangeaud 1912, 251; my translation).

The geologist believed that these kinds of tables reflected a contemporary tendency to teach geography merely through the enumeration of information and names. This was when it should instead emphasize the salient characteristics of a region, including its historical, geological and mineralogical aspects. As a result, a morphology of the invisible should be superimposed on the visible, creating not only surplus data (i.e., the height of a visible mountain) but also a way of seeing the landscape in which we can compare current and past forms visually, re-presenting the elements (forests, glaciers...) that have disappeared. To achieve this aim, the tourists must be first of all amazed and then they must



Fig. 5
Banne d'Ordanche's *Table d'orientation*.

be made to understand clearly a country's essential characteristics and not so much a list of names and numbers.

The suggestion was not only valid on a theoretical level, but had already been put into practice with the installation of a *Table d'orientation* in Banne d'Ordenche in 1911, designed by Glangeaud himself and financed by the Touring Club. On it one could see not only the infographic description of the visible panorama, but also the geological one with hatched areas indicating the location of the ancient and now extinct and eroded volcano of Cantal [Fig. 5].

In the early 1910s the production of toposcopic devices can ultimately be said to have reached a new phase: from the many purposes that had characterized their history in the previous century, a didactic-recreational use was now emerging that still characterizes them today. From production issues, we therefore moved on to reflect on the most effective tools to be used (drawing or photography) and, most of all, on the type of data to be entered (infographic digits or visual dynamics).

AN *IN SITU* VIRTUALITY

The media archaeological reconstruction carried out so far does not claim to cover everything there is to say about such a rich topic. It merely tries to elaborate the main features of this multilayered class of dispositives by showing the resilient properties that constitute a toposcope and, secondly, by using them to situate it in the constellation of virtuality. From this perspective, we can now contextualise the toposcopic phenomenon in the paradigm of the *virtual gaze* as defined by Anne Friedberg: "Not a direct perception, but one *received* through representation" (Friedberg 1993, 2).

There is a clear tension of *re-presenting* a landscape in the toposcopic visual experience, based mainly on a set of practices typical of other panoramic devices: the use of circular, all-encompassing images and the privilege accorded to the position of the observer. On this second point, it should be noted that many of the problems seen for the toposcope resemble those found in many contemporary (e.g., air balloon observation) and subsequent (drone strategy in modern warfare) aerial experiences pointed out by numerous recent studies (Kurgan, 2013; Kaplan, 2018). Indeed, it is the careful positioning of the observer in a dispositive, that let him contemplate and monitor the surroundings, that promptly define them as panoramic. Towers, peaks, open-air valleys... all these sites became part of a virtual architecture of the gaze that stimulates an enhanced, expanded, and undisturbed way of seeing (Berger, 1972).

A fundamental corollary of this kind of virtuality is the close relationship that intertwines between the technological constitution of toposcopes and the morphological and climatic characteristics of the environment where they are located. A toposcope design changes more based on their place of operation than it does for any of their applications: the complex devices of the first cities became simpler once they reached mountainous terrain, which was less

sheltered and less controlled. It is a device to define specifically as *in situ* to emphasize the need to deal with circumstances case by case. This is due to their nature as objects that cannot be moved, even by a few centimeters. As Kuniff already understood at the end of the 18th century, toposcopes must always be oriented correctly and then firmly welded into place.

In this regard, the *in situ* qualities of toposcopes complicate the process of representation typical for other panoramic experiences since they do not align in terms of creation of immersive environments. Despite conveying an all-embracing vision of the landscape, toposcopes do not evoke in the observer the same sense of immersion as the coeval pictorial panoramas, in which the elements of presence and distance appeared to be confused, as if the real place had been swapped for the depicted one.

Diverging from this, toposcopes compensate for the shortcomings of the human gaze in the same environment that the observer can still see with the naked eye. It is not about creating a new setting, but about making a series of otherwise imperceptible characteristics visible. The distinctive trait of toposcopes remains the same whether used for surveillance, entertainment, or education: they do not create from scratch, but rather enhance the observer's ability to see. The recurring features in our examples illustrate the will to overcome the limits of the human eye to see into the distance (telescopic lenses), to recognize the identity of places (names of peaks, glaciers...) and to orient oneself (beyond the horizon references). It is indeed a process of visual representation by superimposition.

Taking the precautions that every historical parallel demand, the duality of pictorial panorama and toposcope seems to be reminiscent of Virtual Reality and Augmented Reality today. Two particularly significant phenomena in the



Fig. 6
PeakVisor Mountain
Identification System.

contemporary media and artistic context (Chan 2014; Pinotti 2021). We refer to the latter as a set of techniques that use computer-generated information to enhance or increase our perception of the immediate environment. In Julie Carmignani and Borko Furht words: "While Virtual Reality (VR) technology [...] completely immerses users in a synthetic world without seeing the real world, AR technology *augments* the sense of reality by superimposing virtual objects and cues upon the real world in real time" (Carmignani and Furht 2011, 3). As evidenced by many smartphone applications, Augmented Reality makes you "leave the house" and explore a place firsthand. In particular, there is a number of AR apps dedicated to identify on-spot mountain profiles, such as *PeakVisor*, *PeakFinder*, and others. They provide a digital translation of the toposcopic mechanism, rendering terrain model and labeling the peaks around [Fig. 6].

There is a fundamental difference, though: where toposcopes are confined in one, fixed spot, these apps are linked to a movable device. The *in situ* characteristics so far delineated change now: where the necessary presence of the observer in the panoramic spot remains, alongside the superimposing dynamic, the accuracy of the dispositive is no longer granted by its unmovable quality, but by the ability of photo-cameras to recognize the location. We should then speak for this kind of AR apps still of a *in situ* way of seeing, but no more of an *in situ* support.

Nevertheless, AR and toposcopes both prove the *potentiality* inherent in the concept of virtuality, not so much as an alternative to reality (creating worlds, eliminating distances), but as a strengthening, yielding visual force. Glangeaud's reflections at the beginning of 1910s moved precisely along this axis. As the geologist pointed out, adding data and names is only the simplest way to achieve this enhancement. Toposcopes can be much more. They can provide a radically different visual approach to landscapes and, consequently, to image geography and cartography (Castro, 2011). As in the Banne d'Ordenche table, even the past can thus be present: the observer no longer sees the territory in its current aspect, but also in its inner and past dynamics. Although no specific cases have yet been found, it is easy to imagine how these AR apps can serve the same purpose by linking not only to practices of geographical visualisation, but also to climatic and ecological emergencies.

Considering all, the toposcopic phenomenology could really provide many insights for the contemporary visual scenario. The AR analogy should not be read from a genealogical perspective: not only is there no evidence of a direct filiation, but also numerous differences persist between them. The juxtaposition is quite significant in providing yet another example of how the perceived virtualization of environments is not exclusive to the digital present-day realm, but appears in analogous forms in a not-so-recent past. A dynamic that, to take up another term of geological origin dear to Zielinski, emphasizes the deep time of a media; the non-linearity and the recursion of both technological solutions and ways of seeing.

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Topologies of the Virtual. Spaces, Images, and Bodies in Early Modern Choir Stalls

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Early Modern choir stalls are spaces within spaces, they separate spheres such as public and restricted, profane and holy, as well as open and closed. Members of the convents perform their daily devotions here and are assigned to respective seats. They are installed, according to the name of the place "stalla". The inlaid decoration on each seat reiterates the specific spatial and religious formation. This article wants to explore how choir stalls immerse their users and viewers in pictorial and religious environments.

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Media archaeology of virtuality and immersion has traced the steps back to early film, panoramas in the 19th century and the magic lantern in the 17th century. Using an open notion of virtuality, especially in context with arts, the historical connection can start in antiquity (Grau 2003). This article aims to build on Oliver Grau's notion and wants to consider inlaid Early Modern choir stalls as environments for virtual experiences in the context of religious practices in Early Modern Christianity. Having pictures that directly comment the spatial relation of the choir stalls to architecture and symbolic spaces in churches and cathedrals, virtual spaces shall in accordance with Vavra be understood

as space that always emerges when real topographical elements of coordination and spatial formation are superimposed by constituents of other categories. Sensory perceptions, functionally or intentionally demanded spatial boundaries, or alternative perceptions, e.g. of a literary or pictorial nature, can lead to the superimposition of everyday spatial perception patterns with other ideas of space and thus situate a virtual space in real space. (Vavra 2005, IX).

In the following, I want to explore the situations that are made possible by wooden choir stalls on a social, spatial, and pictorial level. These objects create spaces of hybridity that bind bodies, architectures, materialities, techniques, senses, and lastly Christological presence. In the technique of inlaying, a



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complicated spatial and pictorial relation of the virtual and the actual emerges, that could serve as a reference for Early Modern European views of the relations of seeing and space.

MEDIA THEORY AND THE SACRED

Religious spaces in Early Modern Times were one of the major places of image production. Religions also have, as has been pointed out by various scholars of media and religion, a specific affiliation to things, objects, materials, practices and rituals. Religious scholar Robert M. Geraci describes religions as “both natural and social artifacts; they exist as a consequence of the people, places, and communities that compose them and, increasingly, the technologies through which they are mediated” (Geraci 2013, 324). In being produced and hybrid, religions share a common denominator with the Virtual, as he argues further: “Virtual worlds are, of course, also assemblages of the natural and the social” (Geraci 2013, 324). Media scholars Friedrich Balke, Bernhard Siegert and Joseph Vogl describe the relation between media theory and sacredness on a semiotic level. They attest media theory in the following of Marshall McLuhans famous dictum “The Medium is the Message” a (productive) conflation of information and its channel: “Those who confuse meaning with the fact, information with matter, light with conduction, are going down the paths of media theory, but also those of the sacred. Whoever thinks noise for a message places themselves in the tradition of the mystics.” (my translation, Balke, Siegert, and Vogl 2015, 8). In media theory, they propose, media reinscribe themselves into the message in a way that makes it unfeasible to separate the two. The other way around, the message is always shaped by the medium and its materialities, actors and environments.

Following this understanding of sacredness and media theory, I want to take a closer look at the way objects such as choir stalls shape liturgic rituals and create hybrid spaces between the actual and the virtual. A connection to Early Modern image theory might be drawn via the technique of inlaying that was prominent in Northern Italy in the 15th and 16th century. Not coincidentally this is also the place of formative events for Renaissance imagery and the development of the central perspective method. In the following, I will shortly outline the connection of the new type of pictorial paradigm, that was established with the technique of central perspective and relate it to the artistic technique of inlaying or intarsia.

CENTRAL PERSPECTIVE AND INLAYING

In the early 15th century, Florentine architect and artist Filippo Brunelleschi conducted two experiments, that are often construed to be the origin of a systematic method of central perspective with Brunelleschi as their ingenious creator. While correct implementation of central perspective guidelines can

be found sporadically before, Brunelleschi is thought to be the first to use a repeatable and systematic method. In his first experiment, Brunelleschi painted the Baptistery San Giovanni on a panel with a conical hole in it. Placed on a certain spot in front of the Baptistery, one could verify the accurate depiction of the building by holding the panel in front of one's face, picture side facing away from the head, and a mirror in the other hand. Looking through the hole in the panel, one saw the reflection of the painting in the mirror; by taking the mirror away, one could check if the picture aligned with the *real*, three-dimensional building. A disturbance in the static depiction proved to be the moving clouds in the sky over the baptistery. Brunelleschi confronted this disturbance by applying silver foil in the picture where the sky would be. The real clouds were mirrored by the silver foil (and then again in the mirror).

The second experiment used a panel with a depiction of the Palazzo della Signoria (today Palazzo Vecchio), which was cut to suit the form of the Palazzo. If the viewer positioned themselves at a specific point in front of the building, one could again verify the accuracy by alternating holding the panel in front of the building and removing it. Brunelleschi's *tavolae* and with them the following central perspective drawings and paintings were henceforth examples of an abstract and schematic method of constructing pictures, especially of architectural spaces. The abstract view of the central perspective objectifies vision and binds it to a body, that is single-eyed and male coded (Randolph 2014, 85–88). But Brunelleschi's experiments also point to a very much *situated* vision, since the *tavolae* only develop their effect from a very specific standpoint.

Brunelleschi's experiments are often placed in a direct relation to Leon Battista Alberti, who elaborated on central perspective as a method in his 1435/1436 treatise *De Pictura*. With it comes the famous quote, to imagine the painting as an "open window". Alberti describes the process as an instruction for other painters: "First I trace as large a quadrangle as I wish, with right angles, on the surface to be painted; in this place, it certainly functions for me as an open window through which the *historia* is observed" (Alberti 2011, I, 19). Art historian Friedrich Teja Bach offers a different understanding of the connection between Brunelleschi's experiments and the paradigm of the central perspective image. To him, the used metaphor of the "open window" symbolizes an exclusion and separation of the image, that cannot be uphold given the way, how Brunelleschi's experiments very much interplay with their surroundings, the bodies executing them and the used materials. Teja Bach proposes to understand Brunelleschi's pictorial experiments as inlays themselves. He supports this claim with a different story that is delivered about Brunelleschi in the *Novella del Grasso* by his biographer Antonio Manetti. One day, Brunelleschi was duped by his friend, intarsia carver Manetto Ammanatini. Brunelleschi decides to play a trick on him by making him believe that he is not Manetto anymore, but a shady character with the name of Matteo. Since many people are involved, the trick is indeed successful, leading to an incarceration of Manetto/Matteo and a serious uncertainty about his own identity. Only after a couple of days and many further entanglements, the trick is resolved and the ashamed Manetto leaves Florence to work at the Hungarian royal court.

As cruel as this episode may be, it serves Teja Bach as a third experiment of Brunelleschi and an example for a different pictorial paradigm, since it also plays with perspective and the relation of virtuality and actuality and connects them to the technique of inlaying: "The concern of both panels as well as of the *Novella* is to inlay artificial, simulated reality into actual reality." (Teja Bach 2007, 163). Central perspective with Brunelleschi is not meant to separate the spheres of depicting and depicted, but rather to link them. Teja Bach therefore sees it as no coincidence, that Manetto is a carver and maker of intarsia. In a metonymic shift, the body—and the life—of Manetto become an inlay: "he himself, the intarsia specialist, becomes intarsia" (Teja Bach 2007, 163).

Teja Bach critiques the interpretation of art history of the central perspective image as a window, which includes notions of separation, objectivity, and distance. This critique is backed by art historian Adrian Randolph, who includes not only the usual image panels of the Renaissance in his analyses but also furniture such as "boxes, chests and trays" which according to him "offer accounts of renaissance space that are quite different from the dominant trope of the Albertian window" (Randolph 2014, 71). Furniture opens up a connection to a Renaissance material and visual culture, that is more characterized by privacy and intimacy, the sense of touch and female-coded spaces. Furniture was still seen as defiant in the 20th century by sociologist Georg Simmel: "In the case of the piece of furniture, we make contact with it constantly, it intervenes in our life and thus has no right to exist for itself." (Simmel 1994, 14). Choir stalls as furniture make no exception, they come in touch with the bodies several times a day, they *intervene*, intrude and impose. Seating furniture especially forms and structures the body in a way, that by no means can be understood as natural but has been subject to historical, cultural and geographical influences. In the following I want to point out the role sitting and the according furniture has played in the role of everyday life but especially religious practices to lastly establish choir stalls as a multisensorial, hybrid space at the intersection of virtuality and actuality.

SITUATION AND INSTALLATION. CHOIR STALLS IN EARLY MODERN RELIGIOUS PRACTICE

Sitting is, like many other activities, described by the sociologist Marcel Mauss as a technique of the body (Mauss 1973), and therefore shaped by factors such as geography, culture as well as gender. Cultural historian Hajo Eickhoff has worked through these factors and could show that sitting in history has not always been an everyday practice for everyone, but rather a privilege of the few and either associated with the ruling class or the clergy: "Sitting on chairs [...] has two roots: the real throning of the king and the crucifixion of Jesus Christ" (my translation, Eickhoff 1993, 93). The crucifixion and subsequent ascension of

Jesus Christ is described by Eickhoff as the institution of Christ on God's judicial throne (Eickhoff 1993, 12). Sitting in medieval Christian practice is therefore an approximation to Christ and as such reserved for the clergy only. Especially in the order of the Benedictines, the service included a decided sequence of standing, sitting, and kneeling: "The realization of the alternation of standing, sitting and kneeling called for in his [Benedict's] rule requires a special device, the choir stall, which was born in the monastery church in the 11th century." (my translation, Eickhoff 1993, 108). Choir stalls were placed in the choir, the holiest place in Early Modern churches and cathedrals and were conceptualized as a connected bench with separated seats. To accommodate the constant changes in body positions, the seating boards were foldable.¹ Folded up seating boards often had a wider edge, called *misericordiae*, to provide the namesake mercy and relief for monks and nuns to lean on while long standing parts of the service. Standing was also believed as standing upright in front of God, therefore these *misericordiae* were hybrid places, often decorated with mythic creatures, demons and devils to remind the clerics of their illicit behavior (Eickhoff 1993, 114).

The stalls were mostly U-shaped and opened up to the east. They therefore also enclosed the space of the choir and marked a space they themselves do not occupy. Sitting, standing and praying in it was a highly ritualized practice that combined bodily, social, and Christological aspects. Each choir stall had as many seats as members and each new member of the chapter was assigned a certain seat, a *stalla*: "Everyone who was admitted to the order or to the community of canons was assigned a place in the choir stall. With this assignment (*in-stallatio*) they received seat and vote in the chapter" (my translation, Urban 1953). Sitting in one's place in the choir stall is therefore a material and bodily as well as a symbolic practice. In choir stalls with two rows, the higher ranked persons were situated on the outer and higher rows; bishops, abbots, and abbesses were placed at the turnpoint of the U, directly opposite to the altar.

Topologically as well as symbolically, architecturally as well as socially, the structure of the choir stalls forms an included exclusion, since the parish did not have access to the choir as well as the privilege of sitting. Choir stalls also include a space within a space, playing with the topologies of opened and closed, public and private spheres. The space of the choir informed Christian architecture significantly, leading to a special focus on the choir and the altar: "Not the abstract opposition of two spaces becomes the characteristic of Christian construction, but the extreme tension of opposition with simultaneous unity, which the table of the Eucharist establishes as the cultic center of both" (my translation, Eickhoff 1993, 94). Choir stalls are structures that emerge at the cross section of the spatial connection of the architecture and the bodily techniques of Benedictine worship.

¹ Eickhoff relates this seating arrangement to today's theater seats or lecture hall stairs and therefore different kind of spectacles, cf. Eickhoff 1993, 10 and 101. While service, a dramatic play or a lecture are different settings, they share spatial and visual similarities such as the division of a crowd and a mostly single actor, the according distribution of seeing and been seen and the centering of the furniture (and therefore the bodies of the viewers) around a visual focal point.

This interlaced and complicated relation is mirrored by the inlaid decoration that were often attached to the back walls of the outer rows, the dorsals. Many inlaid choir stalls were made in Northern Italy in the 15th and 16th century and many showed a similar pictorial program, that directly referred to the structure of the choir stalls themselves and therefore an interplay of openings and closings.

Most inlaid furniture shows images, that differ greatly from the religiously informed pictorial program of other artistic media of the time such as paintings, frescoes, stained glass and so on. Instead of biblical narratives and depictions of Saints, intarsia are more prone to depictions of seemingly lifeless objects; a property they share with depictions that focus the central perspective method. The choir stall of the Olivetan (a subgroup of the Benedictans) convent of Monte Oliveto Maggiore shows images that can be found throughout many North Italian choir stalls [Fig. 1]. Only two out of the 48 intarsiated dorsals made by the Olivetan monk Fra Giovanni da Verona and his workshop show religiously informed imagery, two Saints flank the beginning and end of the choir stall. The other pictures show alternating insights into cupboards and cabinets and outlooks onto cities, landscapes and architectures. What was later separated in the theory of painting as two different genres, still life and landscape, with associated different positions in the pictorial hierarchy, shows its similarities in the medium of intarsia: they appear as mediated and layered depictions of space. The view is always divided into fore-, middle-, and background, leaving it to the middle section, either opened cupboard doors or framing architectural round arches, to present the enclosed objects. The image composition is not displayed in a way that aims at disguising the conditions of their mediality, as it is often associated with Alberti's paradigm of the open window and has been coined with the term "transparency", in concordance with the window-paradigm. Rather, these conditions, here the framing devices, are amplified by appearing



Fig. 1
Fra Giovanni da Verona
and Workshop, Choir Stall,
1503-05, Monte Oliveto
Maggiore, image courtesy
of Ruth Hauer-Buchholz.

in every picture as a metapictorial reference to the operation of showing itself.

The abundant use of *trompe-l'œil*-motives further accentuates the meta-pictorial reference. Either as hanging or protruding objects, these motives challenge the notion of clearly divided spaces by transgressing them. In case of the half-opened lattice doors, this transgression even seems to reach into the space before the picture and therefore of the viewers, connecting the virtual space of the image and the actual space of the viewer. Philosopher and media theorist Jean Baudrillard views the *trompe-l'œil* as the place of "anti-representation" (Baudrillard 1988, 54) when it comes to painting. In the case of *trompe-l'œil* the painted objects do not refer to any real objects in an indexical way, nor do they invoke any narrative or *historia*: "there is no fable, no narrative. No 'set', no theatre, neither plot nor characters" (Baudrillard 1988, 53). They are striking in their absence of human depiction—or anything alive for that matter. *Trompe-l'œil*-objects appear to be cut off and isolated from interaction: "These are objects, that have already endured: time here has already been, space has already taken place. The only relief is that of anachrony, that is to say an involutive figure of time and space" (Baudrillard 1988, 55). The isolation of the *trompe-l'œil* imagery in the dorsals directly reflects the isolation of each individual seat. Here, objects are put in niches the same way the bodies are placed into their individual nooks. To Baudrillard, the game with reality is the true essence of the *trompe-l'œil*:

In trompe-l'œil it is never a matter of confusion with the real: what is important is the production of a simulacrum in full consciousness of the game and of the artifice by miming the third dimension, throwing doubt on the reality of that third dimension in mining and outdoing the effect of the real, throwing radical doubt on the principle of reality (Baudrillard 1988, 58)

Images, especially *trompe-l'œils*, are not solely a representation of reality but a part of it. It is not images who imitate reality, but reality is approximating the realm of images. As such, Baudrillard assigns even political power to images, such in the case of the small, isolated (and inlaid) *studioli*:

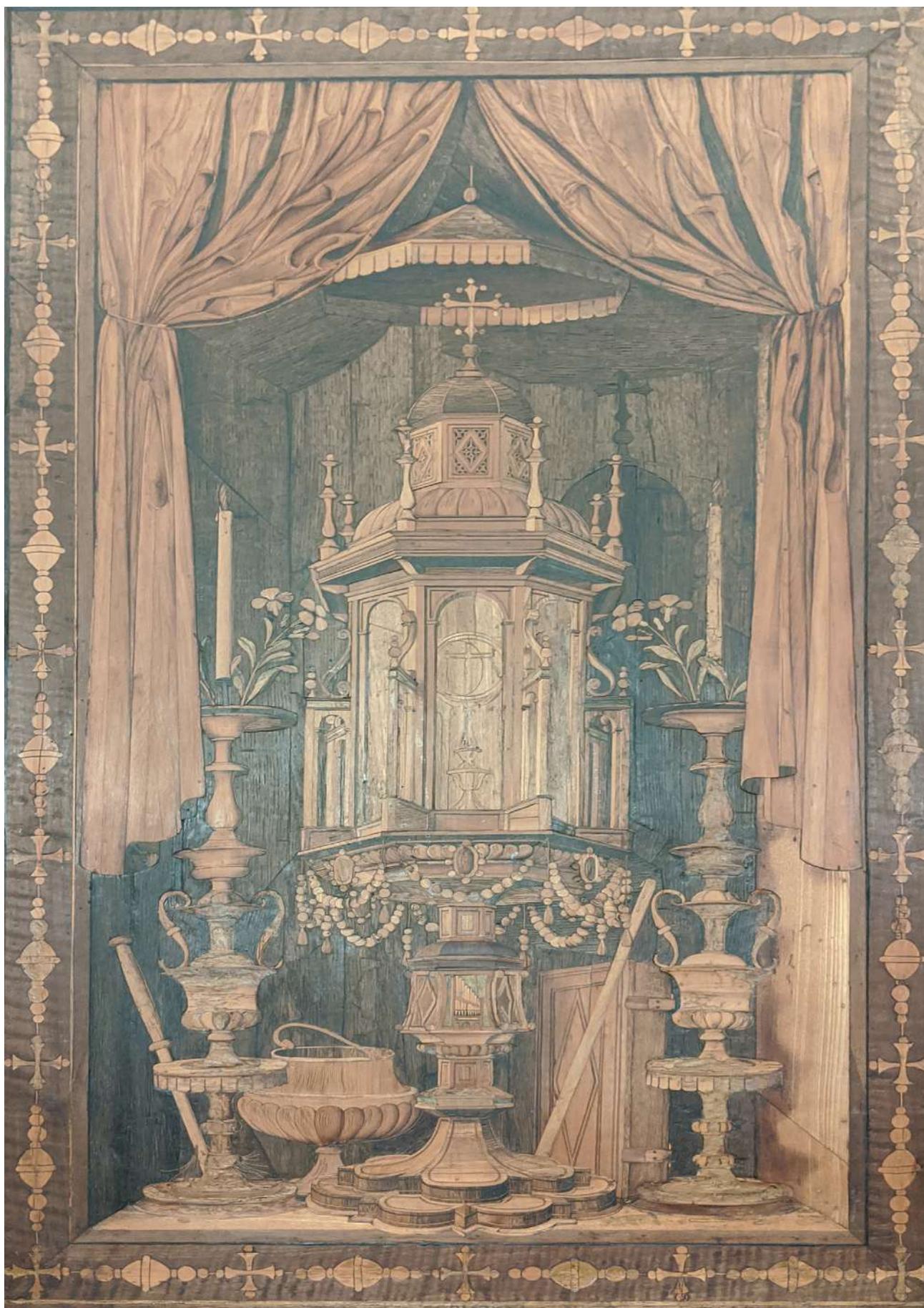
Even the space of politics falls under the influence of trompe-l'œil; for instance, the studiolo of the Duke of Urbino, Federigo da Montefeltre, in the ducal palace in Urbino and Gubbio: miniscule sanctuaries, all done in trompe-l'œil, set at the very heart of the immense space of the palace. The whole palace is the achievement of a scholarly architectural perspective, the triumph of space disposed according to the rules. The studiolo is the inverse microcosm: cut off from the rest of the palace, without windows, without space to speak of, here space is perpetrated by simulation. (Baudrillard 1988, 59–60).

Siegert relates the *trompe-l'œil* not to the order of representation but to the order of the figural, with reference to the philosopher Jean-Francois Lyotard. The order of representation emerged at the end of the fifteenth century and assumes

a separation of “sign and sign carrier, figure and ground” (Siegert 2015, 190). The order of the figural on the other hand, allows for a copresence of representation and represented: “the sign carrier—the materiality and dimensionality of the medium—cannot be separated from the sign itself” (Siegert 2015, 190). As such, *trompe-l’œils* act as “figures of self-reference” (Siegert 2015, *passim*), they allow for the signifier to coincide with the signified. This self-reference turns out to be even more evident in the inlaid choir stalls, given the circumstance, that the depicted object and the depicting medium are often the same in the material of wood. Wood in Early Modern symbolics is also closely connected to Christ. It was perceived as a humble yet anthropomorphized material. Wood grows, lives, works and dies; it has individual drawings and changes depending on the environment and season (cf. Pastoureau 1993, 26). In this liveliness, wood exhibits strongly anthropomorphized features. Processed, it is also a lifeless material and was therefore closely connected to the belief of Christ being on the border of death and life as well. Further, as archaeologist Thomas Kühtreiber and art historian Heike Schlie have pointed out, wood was also thought to be a passage, a medium so to speak, between the virtuality of the pictures and the actuality of the viewer: “The depiction of grained wood surfaces in interior representations or on individual pieces of furniture may have intended the purpose of affective inclusion of, for example, biblical narratives in the present time of late medieval recipients.” (my translation, Kühtreiber and Schlie 2017, 9). Viewers could connect the depiction of wood, i.e. in devotional books or on altar paintings with the ubiquitous wooden furniture that was either placed in their private rooms or in the churches and therefore incorporate the narratives into their own lives. This “affective inclusion” was mediated especially by books of hours and therefore devotional objects that are highly valued, carried close to the body and interacted with on a daily level. The miniature paintings in the books of hours were able to reference certain materials, such as wood. Choir stalls on the other hand are able to simultaneously show *and* reference the material wood. The depicted objects are mostly made from wood themselves, such as writing tools, musical instruments or the ubiquitous lattice doors that seem to open up into the space of the viewers. Another motif of self-reference can be found in the omnipresent framing of the inlaid images, which can be *real*, i.e. three-dimensional, or part of the flat images and thus two-dimensional. The difference cannot be experienced merely visually (and even harder when it comes to photographic reproductions), but rather includes other senses such as touch and therefore an experience that involves the entire bodies of the viewers.

While the examples of frames make it visible, that inlaid pictures are self-referential in that way, it is a different panel, again made by Fra Giovanni, that connects religious practice with spatial relations and questions of copresence. This panel [Fig. 2] is located in the sacristy of Santa Maria in Organo in Verona and shows the already transubstantiated host inside of a monstrance. In a typical *trompe-l’œil* manner, the monstrance is placed inside a niche and slightly protrudes over the border, encompassed by a decorated

Fig. 2 (next page)
 Fra Giovanni da Verona
 and Workshop, Sacristy,
 1519-23, Santa Maria in
 Organo.



(two-dimensional) frame. Many more pictorial elements such as the curtain, the niche, the vitrified host and the shadow-double of the monstrance, refer to a dialectical understanding of showing/seeing and hiding, the same way, the choir is simultaneously exposed and hidden. The desire of pre-reformist Christian practice oscillates between hiding and de-monstrating the most holy places and objects, made evident by the monstrance which is to be carried around at the procession of Corpus Christi. The host testifies to the copresence, that was evoked with the order of the figural, on a religious level, being the wafer *and* the body of Christ at the same time. In its isolation in the niche, the monstrance does not demonstrate religiosity in a way, that a depiction of a biblical narrative would. Rather, it refers to the practical and operative function, that it itself as an object has and to the visual regime, a desire of seeing, that was established in medieval Christianity. Since the most holy, similar to the choir, cannot be accessed just like that, the host has to be put into the monstrance which itself is put into a niche and behind a curtain, which itself is enclosed by a two-dimensional frame which itself is surrounded by a three-dimensional frame and so on... Withdrawal—on a spatial and visual level—is here connected to a simultaneous excess of deictic devices. As room in a room, the panel showcases that space is not thought as distinct and clearly separable areas but rather as recursive and therefore topological. Lastly this recursion can be traced back to a technical and material level, since intarsia themselves are made up of pieces that are embedded into each other. With inlaid images, technique, motifs and the furniture themselves correspond to each other in terms of spatial relations and of connecting virtual to actual spheres.

Inlaid choir stalls are objects, that interlace virtual and actual spaces on many levels: as furniture, they shape and organize bodies along social hierarchies; as objects they encompass spaces they themselves do not occupy; as part of religious ceremonies they make us aware, that godly presence is not simply given, but has to be actively produced by acts of the clergy and the parish together with the devotional objects and furniture; lastly the inlaid pictures demonstrate a semiotic (and religious) copresence of virtual and actual. As pictures that are made from wood and show wooden objects, they blur the distinction of real space and pictorial space and directly refer to the host, which is bread *and* the body of Christ at the same time. In inlaid furniture, spatial, architectural, pictorial, material, religious and semiotic spheres correlate to create hybrid environments.

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Endless Visions, Virtual Desires, and Broadcasted Emotions.

Frederick Kiesler's Architectures of Immersion

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The article aims to investigate the salient features of Frederick Kiesler œuvre – the theatrical mise-en-scene as a multimedia display, the dramatization of the space of consumption and the space of the art exhibition for immersive purposes, cinema understood as a totalizing and spiritual experience, and the intuition of a virtualized, individual and domestic experience of the artwork – through the analysis of a selection of his projects, in light of the most recent categories proposed for the investigation of immersivity. The purpose of this study is to place Kiesler's work in a media-archaeological perspective that takes into account the constant and fruitful asynchrony with the media present in which his work is historically situated.

Keywords

Frederick Kiesler
Environment
Immersivity
Display

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INTRODUCTION

Frederick Kiesler (Cernauti, 1890–New York, 1965), a Viennese architect, theorist and artist naturalized American¹, is a pivotal figure in modern architectural research, whose legacies foreshadow inescapable themes of contemporary transdisciplinary debate. Kieslerian practice and theoretical reflections are situated in the historical context of the intellectual exchanges between European avant-garde and the North American cultural basin that would lead to the proliferation of modernist ideas in art and architecture across the ocean beginning in the 1920s (Bogner 1988; Lesák 2019, 361–73; Held 1982, 41–57; Makaryk 2018, 166–192). Kiesler, who moved to the U.S. as early as 1926², is considered one of the pioneers of the wave of European intellectuals that would soon pour into North America as a result of progressive European Nazification (see, e.g., Clarke and Shapira [2017]; Hochman [1990, 240–8 and 291–310]; Jordy [1965, 10–14]; Jordy [1969, 485–526]; Klonk [2009, 133]). Reconsidering his figure within a media-archeological theoretical framework, is the goal of the following pages. Crucial to this study is the concept of *immersivity*, understood in spatial terms and pursued by Kiesler through the modification of architectural space using media technologies. Immersivity has been conceptualized on several occasions in media studies: from the debate on the

psychological domination of the cinematic apparatus brought up by Jean Louis Baudry (1970, 1975) and developed by film studies scholars (see, e.g., Bellour [2012]; Albera and Tortajada [2015], among the others), the effects produced by the contemporary screen proliferation (Lipovetsky and Serroy 2007; Casetti 2014; Carbone 2020), the genealogical surveys around the features of media devices and technologies that prefigure the construction of digital virtual reality (see, e.g., Bruno [2002]; Friedberg [1993, 2006]; [Grau 2003], on this topic) to the description of the atmospheric immersivity of the emotional landscape and the space of experience (Böhme 2001; Griffero 2017). The meaning of immersivity that is considered most cogent in this study with respect to the re-actualization of Kieslerian practice and thought is the definition of “environmental image” recently introduced by Andrea Pinotti (Pinotti 2020, 2021, 91–120). The author points to the indeterminacy and infinitude of the space of representation beyond a conceptual and/or a physical framing (*unframedness*) and the use of media technology to construct an effect of constant *presence* of the subject in the space of representation (*presentness*) (Andrea Pinotti 2021, XII–XVIII; for a general investigation on the concept of presence in virtual environments see, e.g. [Eugeni 2021]). Kiesler's designs give rise, through technology, to an immersive experience of spectators and consumers marked by the dissolution of spatial framing and proximity in physical spaces. “Endlessness” (Kiesler 1926a, 1930, 1939, 1966), a Kieslerian key concept and necessary premise to the understanding of his practice, is based on the idea of spatial continuity and can be summarized succinctly in this assumption: by breaking down architectural barriers, one is able to transform any environment into a flexible and organic *continuum* that can be assimilated into a single image. In turn, endlessness is based on the principles articulated in the Correalist theory (Kiesler 1939, 1949a, 1965), which postulates a reconceptualization of space through a new architecture that originates from the energetic weaving that is established between the elements that constitute the environment and humans. From the drive to understand space as infinite and continuous, without boundaries, to the idea of an immersive environment in which the distinction between image and reality thins out, the step is short.

THE STAGING OF “R.U.R”. BETWEEN SENSATIONAL EXPERIENCE, BROADCASTED FEELINGS, AND MEDIA ARCHAEOLOGY.

The staging of the play *Rossum's Universal Robots* (R.U.R., 1920) by Karel Čapek, staged in Berlin in 1923, represents Kiesler's attempt to transform the theatrical setting into an immersive environment through a wide range of technological inventions and media tricks.

Kiesler's staging is situated in the climate of renewal of stage space and actor performance that distinguished the first two decades of the last century:

from Edward Gordon Craig's *über-marionette* understood as an emotional automaton, to the actor as an efficient tool instructed according to Meyerhold's biomechanical technique and Prampolini's actorless theater, the presence, absence, and potential replaceability of the acting body and the interaction between audience and performance are hotly debated (see, e.g., Craig [1908, 3–15]; Leach [1993]; Prampolini [1924]). One wonders whether the machine—in industry as well as on the stage—can replace the human being and whether its physical and mental presence as a spectator or actor is absolutely necessary or can be displaced through telecommunications engineering.

R.U.R. describes an automated world, populated by artificial entities in the service of production—robots³—where, in the face of the labor relief for humanity offered by automation, social and political complications arise due to the complex coexistence of enslaved humanoids and master humans. Between *techno-phobia*, which translates the fears of the European population grappling with the post-war crisis, and modernist and constructivist *techno-philía*, foraged by rampant American capitalism (Graham 2013, 113–14), in Čapek's fiction, themes gravitating around the body re-emerge: the body, as the whole of flesh and psyche, transcends the boundaries of the factory and becomes an object of aesthetic reflection in the media sphere. Questions are raised about spectators' emotions, about "feeling like" or "feeling with" actors, and about techniques for tightly integrating spectator and performance (McGuire 2019, 4–11). The stage set created by Kiesler articulates these instances through the implementation of "actual media apparatuses that transformed the stage into a new kind of spectatorial technology" (Graham, 2013, 125) and constitutes an ode to the experiential possibilities offered by mechanization, with a futurist-inspired momentum (Prampolini 1924) and constructivist-like forms. The set mimics the factory in its work compartments and routines, recreating an assembly line apt to produce, in this case, spectacle. [Fig. 1]

Among the mechanisms used, whose operation had been carefully choreographed, were a seismograph, an iris diaphragm, and a Tanagra Aparata,

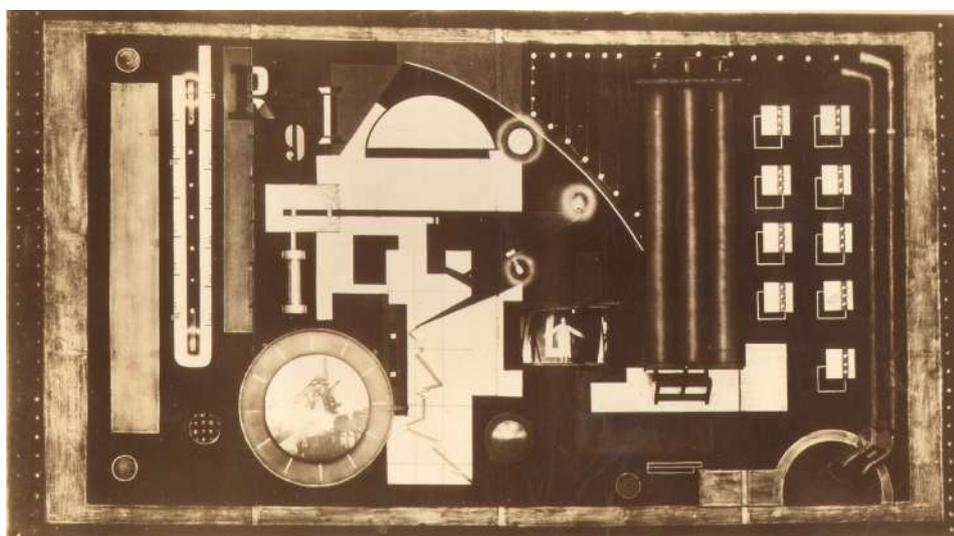


Fig. 1
Frederick Kiesler, sketch
for the set design for the
performance of *R.U.R.* by
Karel Čapek, Theater
am Kurfürstendamm,
Berlin, 1923, preserved at
Österreichische Frederick
und Lillian Kiesler-
Privatstiftung, Vienna.

an instrument invented and used between the 19th and 20th centuries for puppet theater (see, e.g., [Held 1982, 16]). Using a system of mirrors, the Tanagra created the illusion that actors were acting off set while their miniatures were visible on stage, framed by a small screen in an approximation of the closed-circuit television system. The second attempt to anticipate closed-circuit television as a stage apparatus is the use of a short film inserted as a prop in a dialogue scene⁴. At that time, it was customary to intersperse the scenes of a play, drama, or musical with a cinematic interlude, often projected directly onto closed curtains to extend the plot time and allow for a scene change or other scenic adjustments (Held 1982, 11–15). The primacy of Kiesler's use of the cinematic interlude is still controversial⁵, but its use remains organic to the stage device: only with the staging of *R.U.R.* is the film "designed into the setting; the film was shown during an appropriate portion of the action, within the act, and used to represent a machine of the future— closed circuit television" (Held 1982, 15). Kiesler is interested in the dynamic relationship between the *front* and *back* of the image produced by the staging and conceives the backdrop as an active part of the dramaturgical space (Kiesler, 1996a). For the set design of *R.U.R.*, he anticipates the use of rear projection (Kiesler, 1996b, 42; Rogers 2019, 19–58) for narrative purposes, to multiply the stage space, stratify it in time and space, displace it geographically and, at the same time, annul the distances between spectator, stage space and places of action, reflecting on the "fourth dimension"—time—understood as the last and final dimension of space.

Kiesler, in his striving toward breaking down the fundamental code of Western theater—the clear separation of stage and audience, the so-called "fourth wall"—to immerse, literally, the audience within the staging, raises—beforehand—issues related to screen proliferation, transparency, and ubiquity, using technical surrogates, as Ariel Rogers points out (2019, 128, 137–40, 195–6, 209)⁶, to achieve a composition of *recadrage* and *decadrage* that re-articulate the edges of the frame defined by the proscenium. The imaginative tension with which it invests a television apparatus still in the making, Rogers argues, more or less consciously appropriates a culture of the mirror and the window, which permeates the urban landscape and the interiors of palaces. The proliferation of mirrored or transparent surfaces that multiply the presence of images—reflected or framed—refer to the "distant vision" associated with television, and when these screens are used by the avant-garde to reorganize space "through multiperspectivity, transparency and simultaneity" they contribute to making the stage and exhibition space a "flexible space machine" that aims at the construction of an autonomous subjectivity of the spectator.[Fig. 2]

For Kiesler, *movement* remains an indispensable condition, and set and stage, thanks to mechanized stagecraft, can animate autonomously without human intervention, according to a predetermined score in order to "create tension in space" (Kiesler 1996b, 43, [my translation, emphasis added]). As Charlotte Klonk (2009, 114) suggests, Kiesler "started to pursue the idea of a multi-perspectival space experience created by the relative motion of viewer and objects ", and the *R.U.R.* display emerges as a media device that relates spectator perception and

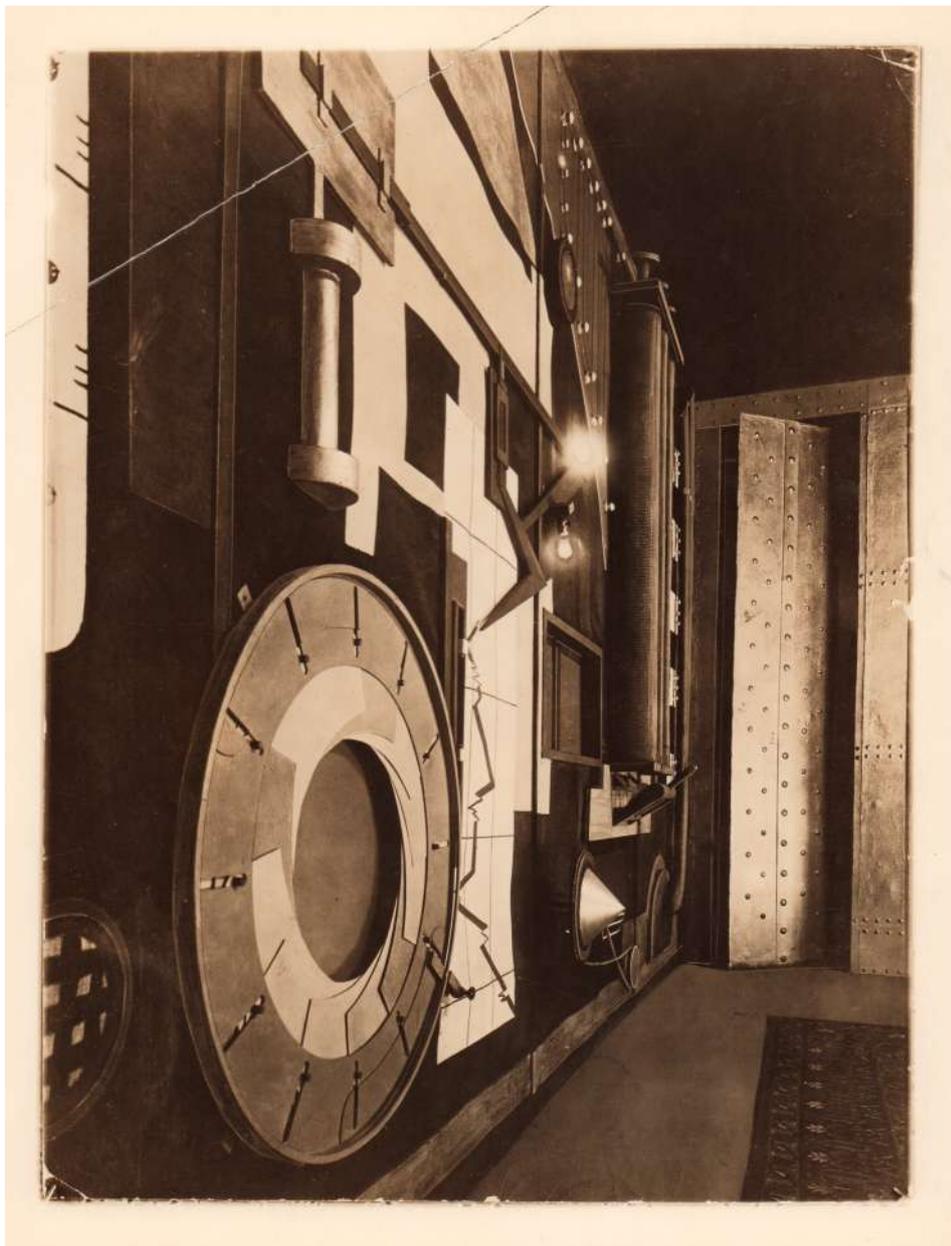


Fig. 2
Frederick Kiesler,
set design for the
performance of R.U.R.
by Karel Čapek, Theater
am Kurfürstendamm,
Berlin, 1923. Photograph
preserved at
Österreichische Frederick
und Lillian Kiesler-
Privatstiftung, Vienna.

performance space through technology (McGuire 2019, 13, 18-20).

The experience is little mediated by narrative but, rather, constantly presentified by the activation of purely perceptual expectations. Graham (2013, 133) highlights the meeting point between the subjectivity of the robot investigated in Čapek's text and the spectatorial subjectivity brought into play by Kiesler, "the former drained of emotion, the latter finding it heightened". The perceptual hypertrophy of some experiments in avant-garde theater and cinema privileges *artifactual emotions* that "consist in all of the emotional responses that can be solicited directly by the artifactual status of film as opposed to the content of the fiction" (Plantinga 2009, 74).

Thus, it is not a question of emotions related to the narrative, but rather to the nature of the film as a technical medium that gives rise to the *shock aesthetic* (Benjamin 2008, 39,41) that distinguishes the cinema of attractions, and to a

spectator “hungry for thrills” (Gunning 1983, 126). Kiesler’s scenic choices, while aiming to accentuate an effect of verisimilitude, never cease to showcase the technical apparatus and the infinite variety of its *modes of presentation* (Gunning 1983, 127) as part of the spectator’s enjoyment and completion of the aesthetic experience. Kiesler’s theater is *exhibitionist* theater insofar as it primarily shows itself, using plot as a pretext for the staging of the apparatus⁷. This makes the technique a spectacular device, revealing the machine as a form embedded in the performance, in the stage fiction, thus helping to blur the sharp separation between the technological reality producing the effect and the effect itself.

IMMERSED IN DESIRE: DEPARTMENT STORES AND WINDOW DISPLAYS AS VISION MACHINES

Kiesler confronted the impossibility of breaking down the architectural barrier between viewer/consumer and merchandise/display when, in 1927, he designed the storefronts of Saks Fifth Avenue in New York and, in 1930, published *Contemporary Art Applied to Store and Its Display*, a volume devoted to store display and the architectures of consumer spaces.

Kiesler does not believe that “selling through glass” (Kiesler 1930, 73) is the best possible way to maintain a tactile relationship between merchandise and consumers, yet the storefront remains an obligatory condition in the modern urban context. The architect weaves an admirable web of solutions, based on the immediacy of optical perception, to transform the storefront into an immersive scenic machine, a viewing device capable of producing ever-changing images. He strives to make the storefront an active medium, proposing the elimination of the frame element in favour of the implementation of facades and buildings understood as *one image* (Kiesler 1930, 102–3).

In *Contemporary Art Applied to Store and Its Display* Kiesler brings out the screen surface nature of the storefront. The storefront, like cinema, is a container of desire, identity projections, and narrative.

The storefront window has been primarily understood as a para-cinematographic apparatus activated by the movement of the *flâneur* and the *flâneuse* in Walter Benjamin’s volume dedicated to the Parisian *passages* (Benjamin 2010).

The analogy between the cinematographic frame and the storefront window is captured by Giuliana Bruno when she states that “cinema has the habit of consuming space”, while using it and at the same time appropriating it, and it is at the same time “a *space of consumption* and a *consumption of space*, it is a user’s space [emphasis added].” (Bruno 2002, 65). Anne Friedberg describes window shopping as a “distanced contemplation,” a spectator experience akin to that of cinema, itself described as “a tableau, framed and inaccessible, not

behind glass, but on a screen" (Friedberg 1993, 68–91). Regarding the proximity between the—female—identification processes underlying the fruition of films and shop windows, Mary Anne Doane states that the "cinematic image for the woman is both shop window and mirror, the one simply a means of access the other" (Doane 1987, 33) and both the displays involve the subjectification of women as spectators and their simultaneous objectification as images. For Jane Gaines "cinema-going is analogous to the browsing-without-obligation-to-buy pioneered by the turn-of-the-century department store", and spectators and customers share and exercise a similar "*visual connoisseurship* [emphasis added]" (Gaines 1989, 35).

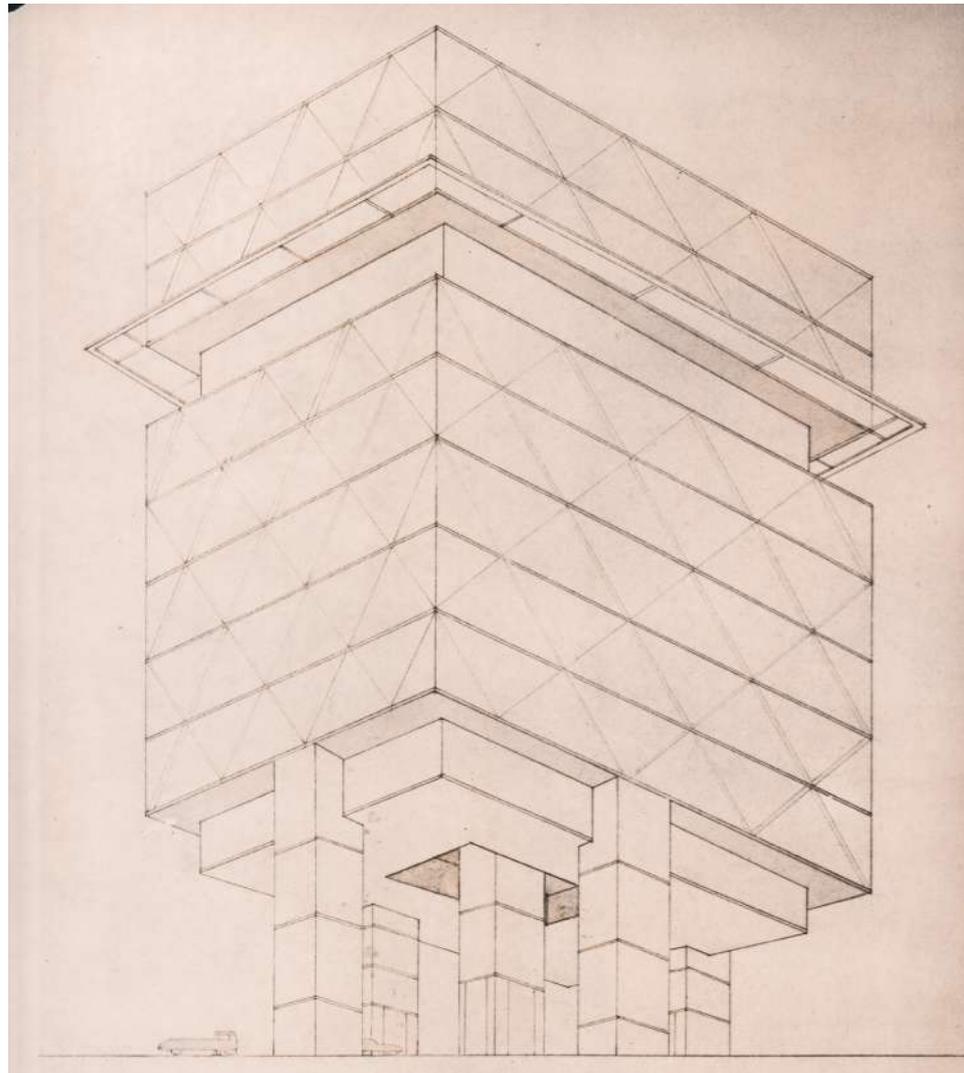
Kiesler proposes two consumer building hypotheses whose façade is made entirely of glass (Kiesler 1930, 49 and 97) and allows the building to fabricate its own climate (Kiesler 1930, 97) while housing the technologies necessary to transform the façade into a sophisticated image-generating device. The volume presents plans for a department store enclosed in a transparent glass tower whose spiral internal structure would ensure freer and more harmonious movement of customers (Kiesler 1930, 49). The infinite continuity of the walkway—the infinity that would increasingly characterize his designs—would lead customers to "walk down several floors without realizing it because of the slightness of the incline" (Kiesler 1930, 49), transforming the building into a continuum that envelops the consumer in a separate, protected, semi-oneiric dimension, comparable to the experience of cinema (Friedberg 1993). [Fig. 3]

Kiesler assimilates the storefront to the stage and proposes a "dramatization" of its display to create a veritable "peep show" (Kiesler n.d.) for passers-by, crafted from technologies—medial and otherwise—that would go on to compose a kinetic, automated and spectacular surface that would envelop the consumer buildings of the future. He suggests introducing push-button devices for the use of passers-by, which could make the storefront experience fully interactive, in visualizing the "dream of a kinetic storefront" (Kiesler n.d.), conceptually anticipating the range of *affordances* and *agencies* that have become effectively available with the digitization of consumption and the rise of VR technology (Pinotti 2021, XII).

The technological evolution of the spectacle leads Kiesler to a still pseudo-scientific prediction at the time, according to which "the perfection of television [...] will embrace and fuse together all the dramatic arts through technical means" (Kiesler 1930, 113). Kiesler, building on the ingenious "kinetic moments" with which he punctuated the staging of R.U.R. in Berlin, hypothesizes futuristic television devices for the department store and the use of film in the commercial context by insisting on the characterization of the clientele as audience, and of the department store as "a modern place of spectacular entertainment" (McGuire 2017, 147).

Sales robots equipped with screens and audiovisual totems are joined by other visionary applications of television, a technology then still being experimented with. Kiesler hypothesizes a *broadcasted decoration* (Kiesler 1930, 120), which aims to dematerialize architecture through the massive use of broadcasted

Fig. 3
Frederick Kiesler,
project for an unrealized
department store
building presented in
1930's *Contemporary
Art Applied To The Store
And Its Display*, New
York: Brentano: 49.



images, inspired by the ways of disseminating sound in domestic environments through radio, and foreshadows its potential: "Television will bring moving images and talkies, current events and scenes on other continent, right into your home and turn it at will into a theatre, a stadium; into Paris or Peking" (Kiesler 1930, 120).

Kiesler tends to consider new media applied to *décor* in terms of *flux* and, at the same time, *object*. Broadcasting makes decoration intermittent, constantly available and interchangeable due to the ephemeral nature of televised images (Haran 2016, 87). Despite its characteristic immateriality, Kiesler assimilates broadcasted decoration to the other physical elements that make up the domestic decorative repertoire: sounds and images are "augmented" props, elements of enhanced *décor*, infinitely variable to respond to the hunger for novelty of consumer society. The storefront, transformed into an ephemeral and changeable interface, takes on a hybrid valence that moves between the work of art, the consumer good, and the scenic apparatus (Haran 2016, 89). This metamorphic nature is even more evident in the hypothesis of the *screen curtain* (Kiesler 1930, 121), placed in the space of the shop window, which, when

needed, offers a news service and can be lifted leaving the display to its sales function "with a redoubled force before an attentive gathering" (Kiesler 1930, 121). The televised image would provide an efficient set design by distributing, at very low cost, remotely filmed scenic elements after adapting them to the actual backdrop to be decorated. Kiesler prefigures a multimedia and augmented scenario where technologies and distribution platforms are mixed to offer the services of mass communication in the unusual context of scenic decoration.

The same eagerness for the new was answered by the design of the *Telemuseum* (Kiesler 1930), an interactive, changeable media device proposed in 1927 for an exhibition held at the Margaret Anderson Gallery, where Frederick and his wife Steffi had found temporary employment. The Telemuseum was to meet the desire of the curator—artist, activist and patron of the arts Katherine Dreier (Staniszewski 1998, 313; Phillips 1989, 169–70)—to create "a model apartment of the future for an exposition of modern paintings" (Kiesler 1930, 121). The purpose was to show "the relationship between painting, sculpture, and interior architecture" (Kiesler 1930, 121), a true "modern environment," and Kiesler proposed to intervene on one of the rooms in the exhibition. Kiesler's drawings showed "sensitized panels which will act as receiving surfaces for broadcasted pictures" (Kiesler 1939, 121) and describes the effects:

Just as operas are now transmitted over the air, so picture galleries will be. From the Louvre to you, from the Prado to you, from everywhere to you. You will enjoy the prerogative of selecting pictures that are compatible with your mood or that meet the demands of any special occasion. Through the dials of your Teleset, you will share in the ownership of the world's greatest art treasures (Kiesler 1930, 121).

Kiesler insists on the variety that distinguishes the teletransmission of images reproducing works of art, hypothesizing a completely immaterial idea of art exhibition. He then further expands the expressive and medial assumptions of the exterior surface of consumer buildings by pondering the elimination of the storefront in favor of an interactive shell that encloses the entire structure (Kiesler 1930, 78–122; McGuire 146–49). The architect is among the first to intuit the evolution of the architectural morphology of the consumer space into a new building type, the *shopping mall*, introduced into the American architectural repertoire at least twenty-five years later by Victor Gruen, another Austrian émigré (Sonzogni 2014, 9–12), and to predict its dimension as a multimedia device capable of "immersing the viewer in the virtual promise of technology" (Phillips 2017, 107). Kiesler envisions the complete conversion of the façade into a single screen surface capable of receiving and transmitting moving images. Television shielding would result in the isolation of the building and a demonstration of how architecture can be used to "mediate sensations" (McGuire 2017, 147). The media membrane with which Kiesler intends to wrap department stores does not constitute an osmotic surface between interior and exterior, but, rather, interposes a screen, a gap of a spectacular nature that

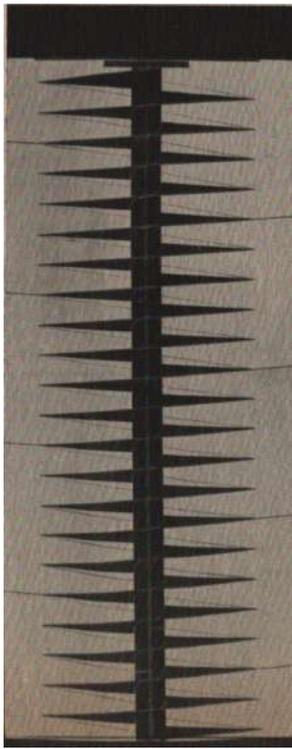


Fig. 4
Frederick Kiesler,
project for an unrealized
department store
building presented in
1930's *Contemporary
Art Applied To The Store
And Its Display*, New
York: Brentano: 97.

stimulates consumer expectations, to intensify them and control their desires.
[Fig. 4]

A JOURNEY INSIDE THE IMAGE: THE FILM ARTS GUILD CINEMA

Kiesler's focus on the immersiveness of the viewer/consumer experience is demonstrated by his interest in cinema and the place dedicated to its fruition, the movie theater, which the architect devises as a place where the image can become *environmental*. This interest is embodied in the writing of the "100% Cinema" manifesto, published in 1928 by *Close up*, where he postulates the principles of the new art—which he calls "optophonic" and, in 1929, in the design of a movie theater, the Film Arts Guild Cinema in New York, where films could be presented in an architecture founded on the specifics of cinema and an appropriate mode of presentation. The project had been commissioned by the Film Arts Guild, a small organization and distribution house committed to popularizing foreign films of high cultural value and reissuing auteur masterpieces of the past. Located in the Village in New York, Kiesler's cinema was strongly connoted, both inside and out, by De Stijl's formal principles. For the design, the architect was explicitly inspired by the facade of the Café de Unie, built in Rotterdam by J. J. Oud in 1925, and developed the concept of *psycho-function*, according to which specific materials and color schemes produce equally specific psychological effects on the spectators (Kiesler 1930, 87).

The renovation of the façade and interior is characterized by geometries and linear patterns that create the illusion of three-dimensionality and a perspective effect of escape to the heart of the building: the screen. The exterior of the hall was designed to move the gaze according to formal and chromatic rhythm, to draw the viewers' bodies inside an optically stimulating space that would provide *distraction* until the moment of entry into the hall, where the gaze, on the contrary, would be focused toward the screen surface (Phillips 2017, 116–17). The layout of the auditorium was simple, versatile and anti-decorative and radically different from the baroque, monumental and "fairy tale" architecture of the cine palaces that constituted the building norm of the great cine theaters, designed with a self-representational and celebratory function rather than to allow the gaze to concentrate on the film. Kiesler, a staunch defender of the cinematic specific, which he considers the highest expression of our eminently "optical" era, advocates an architecture that expresses the film as a "the optical flying-machine of our era" (Kiesler 2014, 29), the ultimate expression of modern speed. The centrally placed screen, called the "screen-o-scope" by Kiesler, resembled the diaphragm of a photographic lens and could adjust to the ratio of projections by two concave, sliding covers. Retractable membranes made the place of curtains while simultaneously eliminating any reference to theatrical architecture. The sloping ceiling and floor of the Kieslerian hall converged

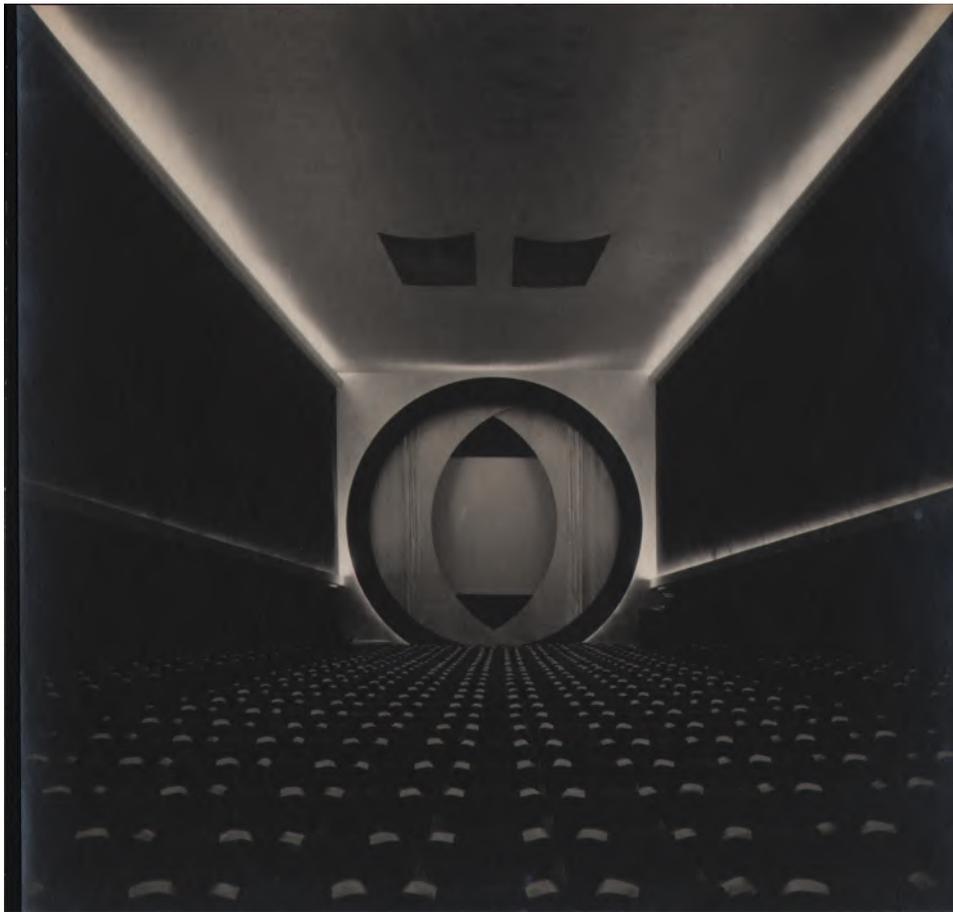


Fig. 5
 Frederick Kiesler, Film
 Arts Guild Cinema,
 interior of hall with
 "Screen-o-Scope"
 system, 1929, New York.
 Photograph preserved at
 Österreichische Frederick
 und Lillian Kiesler-
 Privatstiftung, Vienna.

toward the "screen-o-scope", guiding the viewer's field of vision in the same direction and transforming the room into a kind of optical space ship (Bruno 2002, 45). The Kieslerian screen seems to recall Eisenstein's coeval reflections on the *dynamic screen*, according to whom cinema had adopted a square screen capable of develop "a *dynamic* succession of *dimensions* from a tiny square in the center to the all-embracing full-sized square of the whole screen", a dynamic square capable of visualizing the conflicts between "vertical and horizontal tendencies", thanks to the use of masks capable of changing its size and shape when necessary (Eisenstein 1929 as reported by Somaini 2014, 155–67).[Fig. 5]

The screen-scope was not the only support intended for the projection of moving images. The walls of the room were additional and potential screen-prostheses. The environmental projections were to act as a context to the central projection and induce the viewer to a totalizing and meditative experience. The expanded screen could have enveloped the entire room, but was never fully utilized and understood (McGuire 2007, 52)⁸. It was supposed to function as a planetarium, anticipating the multimedia experiments of the 1960s, such as Stan VanDerBeek's multi-projection installations or Anthony McCall's light sculptures, aimed at dematerializing the cinematic device outside the theatre and repurposing it inside the museum⁹. The projector-scope would perform in-depth functions through additional visual apparatus and light decoration, ephemeral and interchangeable to match the style of the main film (McGuire 2007, 50).

As Giuliana Bruno (2002, 43) brings to the fore, this was “a filmic space devoted to one particular aspect of the urban experience: it was carefully designed to offer a perceptual voyage that distilled the experience of modernity,” where awareness of the journey would take precedence over knowledge of the destination. To allow the viewer to forget himself, physical space had to fade away, to make itself invisible in favor of the complete visibility of the moving image. There was a shift from the optical stimulus of the outdoors and the lobby to a place where the gaze had a chance to focus, in an alternation, as Phillips suggests, aimed at “expanding the limits of the architectural body” and, in fact, dissolving the distinction between art and life “in a continuous spatial atmosphere,” (2017, 116) in what Bruno reconfirms to be, as in Kiesler’s stated intentions, a “cinema-surface [...] a place of concentrated, private, and yet lost attention [my translation]” (2006, 44). We note that, unlike the staging of R.U.R., here the device must make itself untraceable in order for the viewer/traveler’s experience to be said to be complete and satisfying.

Kiesler pays special attention to the video-acoustic dimension of the cinematic spectacle, which he addresses extensively in his manifesto (Kiesler 2014). He anticipates later technical and theoretical insights regarding amplification systems that enable spatialized propagation of sound in the hall, such as the surround system (McGuire 2019, 5) and emphasizes the relationship between the image as surface and the space understood as sound volume, describing the acousmatic¹⁰ character of the hall.

For the architect, the cine-theater, though renovated, is but an intermediate and incomplete step toward an architectural perfection that can be realized only upon the completion of a technical optimization: “There is no doubt whatever that the film is not a final goal, but a transition to a new art which I call OPTOPHONETICS. The house of Optophonetics, as the ideal cinema, is the OPTOPHON” (Kiesler 2014, 33 [capitals in the original text]). For Kiesler, film delivers itself to its artistic specificity not only in the purity of silent images, as “The House of Silence” or “The Wordless House” —a condition he considers generated, at first, only by the technical inadequacy of the device—but also as “The House of Sounding Vibrations” (Kiesler 2014, 29).

In stark contrast to Rudolf Arnheim’s coeval position (Arnheim 1957, 4–6, 33, 75, 84, 106–11, 204–5, 217, 218, 226), he decrees the death of silent film (Kiesler 2014, 31) and claims a haptic and multisensory plane of fruition, where “everyone of the five senses must be supported by one of the others to attain its highest powers.” since “*We must be able to see music, just as we must be able to hear a spectacle or a picture.*” (Kiesler 2014, 31 [emphasis in the original text]) In Kiesler’s conception, the filmic medium will express itself in its fullness and autonomy only through the perfect technological integration of the device that allows for the abandonment of the mimetic reproduction of reality in favor of a complete illusion that gives rise to “a new form of artistic creation” (Kiesler 2014, 32).

In the brief discussion regarding the film medium, he does not forget to note the aspects related to fruition and, once again, stresses the importance of the

way the film is presented, its display, which recalls Baudry's description of the spectator's passivity in his later theorization of the apparatus (1970, 1975): "The Cinema which I have designed is the ideal house of the inactive spectator, of the passive spectator, of the individual spectator, the house of absolute Individuality" (Kiesler 2014, 30). For Kiesler, nevertheless, spectatorial passivity constitutes a foundational moment of an exquisitely filmic experience of fruition, the necessary precondition for psycho-perceptual surrender to the immersiveness of the cinematic work of art. The device conceived by Kiesler aims at the complete immobility and passivity of the spectator, in order to liberate, contrary to Baudry's assertion, his psyche and spirit. Kiesler sees cinema as a metaphysical experience, capable of immersing humans in a universal and sometimes invisible flow of energy, in accordance with the latest discoveries in physics regarding waves and particles, and the cinematic experience would have guaranteed for the audience a true "transformative event" (McGuire, 2007, 71).

CONCLUSIONS

For the design of the hall, Kiesler retains, as a frame of reference, the cinema of the avant-garde, where a stringent narrative and characters to refer to for an identity hypothesis are often absent. Passive surrender to the flow of images and the flow of sounds is but the antechamber of a transformation that, through the senses, leads to the expansion of man's cognitive faculties, opening toward that energetic and spiritual "fourth dimension" that seems to constitute the constant horizon of reference in Kiesler's practice, along with the karst outcropping of *endlessness* that, like an invisible engine, gives shape to each of his projects.

In the creation of the *R.U.R.* set design, the dimension of attraction and technical wonder of the enacted device solicits a collective response and the emergence of shared emotion that leads up to enthusiastic applause at the appearance of a new stagecraft trick (Kiesler 1996b, 43;). In imagining future places dedicated to consumption, Kiesler prefigures an experience that lies somewhere between the collective stimulation of customers and the individual, meditative experience of consumption (McGuire 2017), analogous to that of televised art in the comfort of a private residence.

The long-term outcome of Kiesler's projects in the horizon traced by the utopias of the historical avant-gardes has been widely debated. Scholars have well outlined the remarkable fact that Kiesler has brought out, almost a century in advance, issues that are stringent today with respect to the coming media turn in terms of immersiveness and virtualization of humanity's space of experience. (see, e.g., [Phillips 104–12; McGuire 2017,151–53; 2019; Haran 2013]). Their becoming, in the face of the desire to liberate the masses and contribute to the creation of free and autonomous subjects, a cue for strategies of control and induction of desire for profit, is amenable to further investigation. The virtualization of space in Kiesler's projects, often imagined from the transformation of architectural surfaces into enveloping, iridescent shielding

epidermis, does not overshadow the presence of the spectator's or consumer's body, which remains at the center of both theatrical aesthetic discourse—regarding the presence/absence of the actor's body and the communion between spectator and dramatic action—and the discussion of architecture as a space of experience (McGuire 2007, 2017, 2019; Graham 2013).

It is considered equally of great value to resume Kieslerian projects and his theoretical positions in light of today's developments in the discipline of mediarcheology. Kieslerian spatial unframedness, conceptualized by its author himself and widely discussed by scholars whose theses are presented in the text (see, e.g., [McGuire 2007, 2019; Bruno 2002; Phillips 2017]) is brought into dialogue with coeval and later reflections which draw from media studies field and concern the relationship between sound and image in cinema (Arnheim 1957), the nature of apparatus of Kiesler's projects (Baudry 1970, 1975), and observations on the concept and materiality of the screen (Eisenstein 2010). The space of experience in Kiesler's architectures is as well originated by the attractational quality of the display as intended by Tom Gunning (1983) that marks all the Kieslerian production: individual thrills, collectively shared experiences and emotions, and shock esthetics (Benjamin 2012, 45) are at the base of his conception of spectacularity, within places designated for entertainment as in those devoted to art and consumption. Kiesler's projects are often marked by an only partial transparency of the technological component likely to produce the effects on the public. Effects are often originated by the presence and recognizability of the media technology used: the transformation of space into an infinite with blurred contours is often accompanied by a manifest plurality of technologies constantly exhibited and enjoyed by the audience, mediated through their display—their organization in space and time (Staniszewski 1998, 4–15; Klonk 2009, 113–20). These characteristics entail the emergence of a modern subjectivity shaped by the new experiences resulting from urbanized life that make up the optical unconscious of modernity (Benjamin 2008, 42). The subject, identified simultaneously as spectator, client and actual or potential consumer is characterized by a "mobile and virtual" gaze (Friedberg 1993, 37–40) engaged in the consumption of goods and experiences that have become images. The coexistence—in Kiesler's projects—of reclaimed obsolete media, existing media, and approximations of future media is considered in the text as a trait that contribute to claim the presence of the spectator experience by making him conscious of the apparatus and, secondarily, helps to virtualize the architect's projects, almost abstracting his works from an unquestionable historical location, as he seems not seeking "the old in the new", yet rather finding "something new in the old" (Zielinski 2006, 3). The continuous oscillation between a media past to be recovered, a present not yet technologically perfected, and a future of imaginary media constitutes a mediarcheological coming and going "remarkably forward looking, pointing toward the culture of interactivity" (Huhtamo 2010, 229), constitutive of contemporary media immersiveness.

Notes

¹ The chronology of events concerning Kiesler's life is based on that compiled for the catalogue of the monographic exhibition Frederick Kiesler at the Whitney Museum of American Art in 1989, curated by Lisa Phillips. See Lisa Phillips (ed.), *Frederick Kiesler* (New York: Whitney Museum e W.W. Norton, 1989), 139-161.

² Kiesler traveled to New York at the invitation of Jane Heap, editor of the American magazine *The Little Review*, who, impressed by his staging of the 1924 *Internationale Ausstellung neuer Theatertechnik* in Wien, asked the architect to propose a new version at the Steinway Building in New York with the support of the American Theater Guild.

³ The term *robot*, derived from the Czech *robota*—work—, first appears in this text. The use of the term in the guise of a language game is due to Čapek's brother Joseph. The etymon holds within it the notion of *servitude*, which is propagated in much of the subsequent current usage, transforming itself, through adoption in the industrial and technological lexicon, into a condition of servitude of the machine to the human. See James D. Graham, "An Audience of the Scientific Age: Rossum's Universal Robots and the Production of an Economic Conscience", *Grey Room* 50 (Winter), Cambridge MA: MIT Press, 2013, 112–42 (114).

⁴ This is the dialogue scene between Domin and Helena Glory—the two main characters—that opens the drama. The film was intended to show the woman—and the audience—that the neat rows of workers were actually robots.

⁵ Examples of the use of filmic parts in the theatrical diegesis described in detail by Held and later compared to Kiesler's use of the filmic fragment include Ostrovsky's play *Enough stupidity in every man* staged in 1923 under Eisenstein's direction, Walter Mehring's 1919 Dadaist production of the satire *Simply Classical* staged as a puppet theater, and the stage action that takes place in 1911 in the Posen Municipal Theater during the performance *One Million*, by Berr and Guillemand.

⁶ Rogers finds, in the face of the normativity of the cinematic device institutionalized by classical Hollywood, multiple "screen anomalies" that stem from the technical innovation brought by increasing industrialization and, by distributing themselves in the spaces experienced in everyday urban life, pave the way for the contemporary spectator who is a user of mobile, portable and scattered screens.

⁷ Kieslerian set design leads back to a dramatic unity nothing more than a series of attractions, echoing Méliès's attitude toward the plots of his films, used as a "pretext for "stage effects," "tricks," or for a well-composed tableau. Tom Gunning, "The Cinema of Attraction: Early Film, its Spectator and the Avant-Garde", *Wide Angle* 8 (3–4) 1983, 63–70 (64).

⁸ Due to budget problems, no additional projectors were ever purchased for environmental projections.

⁹ On the dematerialization of the device by the artists of the second avant-garde see Jonathan Walley, "The Material of Film and the Idea of Cinema: Contrasting Practices in Sixties and Seventies Avant-Garde Film", *October* 103 (2003):15–30.

¹⁰ *Acusmatic* refers, etymologically, to a sound whose origin cannot be traced.

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Epistemology of the Feelies. Aldous Huxley's *Brave New World* and the Dream of Smell Media

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The essay analyses from an epistemological point of view the functions of an imaginary medium, the *feelies*, namely some stereoscopic, tactile, and especially olfactory movies imagined by Aldous Huxley in the futuristic dystopia *Brave New World* (1932). Its main goal is to comprehend the identity, functions, and objectives of yesterday's and today's multisensory media. In this perspective, the essay reconstructs the cultural-historical horizon which produced Huxley's imaginary entertainment, considering the three polarities which constitute a media dispositive in the perspective of media epistemology, i.e. *machinery*, *representation*, and *spectator*. With regard to the mechanical function of the fictional dispositive, its ability to catch sensory spheres such as smell and touch reflects the contemporary debate on media specificity, a discussion in which Huxley himself participated with a famous 1929 article. In the same way, the fictional feely *Three Weeks in a Helicopter* appears as a parodic pastiche which bears the marks of various cinematic paradigms of the time: especially early "cinema of attractions", as well as film genres which communicate directly to the spectator's unconscious. Finally, focusing on the imaginary spectator's experience, the essay reconnects feelies to the cultural history of olfaction, a repressed sense whose media conquest coincides with a precise form of colonization of human subjectivity.

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THE IMAGINARY MEDIA EPISTEME¹

A fertile ground for interrogating the identity of a media device is that constituted by that media which have never been realized or simply imagined. By the identity of a medium, I do not mean any pre-existing or pre-fixed construct, but rather the effect of an intersection of practices, technologies, institutions, ideologies and experiential spaces that intertwine and take shape reciprocally in a given historical framework. Eric Kluitenberg, in the preface to his *Book of Imaginary Media* (Kluitenberg 2006, 7–25), emphasized not only that the identity of each medium possesses components that are as real as imagined, but that without one of these characteristics it could not function. More precisely, in the appearance of a new medium, something analogous to what happens in the formation of communities takes place: an imaginary subject needs to take shape for individuals to identify with it and act accordingly. Mythologies thus assume a decisive and productive role in assembling imaginary and real

components, whether simply dreamt or historically realized. Analysing the mythology that accompanies the emergence of a media identity thus means understanding what processes led to its technical and social configuration. In these mythical narratives, the imprint of the different knowledge and powers which characterized the historical-cultural horizon producing them remains alive. This is what, starting from a distinctly Foucauldian approach to media archaeology, is called episteme, or in a more general sense *dispositif*². In this vein, François Albera and Maria Tortajada, focusing on audiovisual media, have also considered the importance of the contribution that science fiction and fantasy narratives, from the 19th century to the present day, have had on the conceptualization of the cinematic *dispositif*, drawing inspiration from technologies that existed at the time as much as they were still being projected (Albera 2010; Albera and Tortajada 2015). Considering the para-cinematic devices imagined by Villiers de l'Isle Adam and Verne up to Barjavel, Albera and Tortajada emphasize two aspects in particular: firstly, how these devices were refractory to any media specificity, as they hybridized different technological and experiential possibilities--a bit like, one might add, mythological creatures created by the association of different animal species. This assemblage is a meaningful aspect of the emergence of a new media experience. One need only think of the advent of a multiform device such as cinema (in which the expressive possibilities of painting, photography, theatre, and music converge). Secondly, in complete continuity with Kluitenberg, Albera and Tortajada indicate how the imaginary devices which inhabit fictional literature do not merely predict and prefigure future ones, but actively contribute to their birth. It could be argued that media, when they first appear, are already welcomed within a shared social recognition, precisely because of the pre-existing framework of these fictional narratives.

The investigation of imaginary media is not, however, a mere novelty of the more recent emergence of media-archaeological approaches in film theory. It was already circulating in theories of the 1950s. Edgar Morin, in his famous 1956 essay *The Cinema or Imaginary Man*, dedicates a huge discussion to the "cinema of the future imagined by science fiction", which coincides with the Bazinian myth of "total cinema, which catapults into the unfathomable future that which is in embryo in the very nucleus of the image" (Morin 2005, 41). According to French philosopher and sociologist, these possibilities express the anthropological goal of the cinematograph itself, which corresponds with the production of a double that is more real than the real itself, capable of surviving the transient character of time.

In the present investigation, I will be interested in considering a specific function of certain imaginary media, which reveals as much the intrinsic vocation of cinema as they trace a borderline territory between the cinematic *dispositif* itself and the immersive media that preceded it (such as phantasmagoria)³, or with which it briefly coexisted (Morton Heilig's Sensorama patent)⁴ and still coexists today (virtual and extended reality environments)⁵. I speak of the fantasy of a cinema capable of colonizing not only the sensory domains of sight

and hearing, but also less mediated--and hard to mediate--sensory spheres such as touch and, above all, smell. It is in fact Morin himself who specifies how "the first wave of science fiction begins by conferring all the sensory characteristics on projected images". In the 1930s, there is especially one fantasy that, according to Morin, most significantly represents the multisensory character of "total cinema": Aldous Huxley's *Brave New World* (1932), in which "the singing, speaking, synthetic film, in colour, stereoscopic, scented" (Morin 2005, 42) constitutes one of the main attractions of the dystopian and futuristic society described within the book (Huxley 2006). Huxley gives this dispositive the name "feelies" in analogy to "talkies", the term with which sound films were referred to at their advent. *Feelies* also play a central role in the unfolding of the plot, which is why it is possible to find in the novel a detailed description of their functions, from the more technical to the more experiential aspects. Consequently, by combining the traces of the various pieces of information left by Huxley in the text, it becomes possible to reconstruct and interrogate the medium in an accurate manner, almost as if it were a pre-cinematic device that is now in disuse. Moreover, in Huxley's narrative, the feelies appear fully integrated with other processes of domination and programming of subjectivity that distinguish the dystopian universe of *Brave New World*: such as *hypnopædia*, the conditioning and automated teaching imparted during sleep, or *soma*, the hallucinatory drug that allows future citizens to calm down by evading reality. It then becomes necessary to ask why the idea of a cinema involving the entire sensorium becomes as significant to identify a precise configuration of society (massified) and the psyche (programmed) such as the one prefigured by Huxley.

Starting from these considerations, I will attempt to apply an epistemological investigation to the feelies, with the aim of understanding from the analysis of an imaginary medium what components and functions characterize the multisensory vocation of media, and, above all, the technological conquest of spheres such as touch and smell. Consequently, I will search the feelies for traces of both the technological and cultural trends that permeate the historical horizon in which Huxley imagined them. In doing so, this investigation will consider Huxley's novel as an opaque object, an utterance whose meaning is not so much to be searched in the author's creative intention as in the historical interweaving of institutions, discourses and technologies in which even a merely imagined medium inevitably participates.

THE MULTISENSORY MACHINERY

Starting from the complexity of information that can be identified in *Brave New World* about the feelies, it becomes possible to isolate three areas for the analysis of the imaginary medium. In an epistemological perspective such as that outlined by Albera and Tortajada, every dispositive implies a reciprocal relationship that is imposed between three constitutive elements: machinery, representation, spectator (Albera and Tortajada 2010). Focusing on the first

aspect, we can analyse the material arrangement and technical functioning of feelies; on the second, their fictional and narrative content; on the third, the subjectivity they address together with the sensory, cognitive, and emotional experience they arouse.

The technical functioning of the feelies emerge most clearly in one of the novel's climactic scenes, in Chapter XI, when the beautiful fetus technician Lenina Crowne and John the Savage meet at the "screening" of "*THREE WEEKS IN A HELICOPTER. AN ALL-SINGING, SYNTHETICAL TALKING, COLOURED, STEREOSCOPIC FEELY. WITH SINCHRONYZED SCENT-ORGAN ACCOMPAINMENT*" (Huxley 2006, 167). Already in the title, openly parodic with respect to any multisensory assemblage, it is possible to guess Huxley's position within the debate of those years on the topic of media specificity. In an article that appeared in *Vanity Fair* in July 1929, "Silence is Golden", Huxley had already described in caustic terms his first encounter with sound cinema, at the Boulevard des Italiens in Paris⁶, "where the latest and most frightful creation-saving device for the production of standardized amusement had been installed" (Huxley 1929, 72). The film that was the subject of Huxley's first disastrous contact with the talkies, whose account resembles more a tale of a misfortune than a film review, is precisely the first sound film in the history of cinema, *The Jazz Singer* (Alan Crosland 1927), released only two years earlier. Huxley himself proudly claims the delay of his experience: "This is one of those cases where it is most decidedly better never than late, better never than early, better never than on the stroke of time" (Huxley 1929, 72). If, however, one compares Huxley's reasons with the positions expressed a few years later by media specificity theorists such as Rudolf Arnheim, one can see some essential differences. For the Gestalt psychologist and art theorist, the problematic nature of talkies concerns rigidly formal aspects, rooted in a precise aesthetic conception that distinguishes the expressive power of an art or medium on the basis of the sensory sphere it implies. As Arnheim states in an essay entitled, with clear reference to the distinction among the arts in Lessing's 18th-century aesthetics, *A New Laocoon* (1938), "in their attempts to attract the audience, two media are fighting each other instead of capturing it by united effort" (Arnheim 1957, 199). Instead, the expressive power of an art would consist precisely in its ability to communicate the perceptive complexity of the world through a single sensory channel. For Huxley, on the other hand, the problem of the multiplication of sensory impulses in the media corresponds rather with a process of cultural decadence, in which the blurring of any tension towards the ideal corresponds with the propagation of immediate and obtuse sensory pleasures. The problematic nature of talkies thus concerns not so much an aesthetic or expressive rule as the socio-economic configuration of the mass-entertainment, with the transformation of media narratives into "Taylorized work and mechanized amusement" (Huxley 1929, 94). This standardization brought about by the inclusion of sound in cinema is reflected mainly in the content than in the form of the movie. Especially, Huxley adopts an elitist point of view with respect to musical phenomena belonging to popular culture such as

jazz: "The jazz players were forced upon me; I regarded them with a fascinated horror. It was the first time, I suddenly realized, that I had ever clearly seen a jazz band. The spectacle was positively terrifying"; not to mention the disgust provoked by Al Jolson's performance of *My Mammy*, defined by Huxley as "the most nauseatingly luscious, the most penetratingly vulgar mammy song that it has ever been my lot to hear" (Huxley 1929, 94). The advent of talkies would therefore represent nothing more than a further transformation of art into pure sensation, increasingly far from any cognition and within the reach of the standard spectator's entertainment.

With regard to the imaginary medium of feelies, the role of undermining media specificity is instead parodically assumed by two culturally neglected senses such as smell and touch, both of which are difficult to colonize by the *media* regime precisely because they are characterized by *immediate* contact with the object. From a technical point of view, the sense of smell is conveyed by a scent organ that works like a musical instrument, emanating odors instead of sounds, while the tactile sensations appear by pressing a metal button on the armrest of the armchair. But while touch takes on a mimetic function, anchoring itself to the objects represented and making them hyperreal, olfactory notes remain as abstract and arbitrary as musical notes, which, according to a long-standing aesthetic tradition, do not replicate the universe of objects but rather constitute the expression of feelings and emotions⁷. The analogy between music and perfume is in fact explicitly emphasized by Huxley: the "projection" of *Three Weeks in a Helicopter* is preceded by an olfactory concert, in which top notes, heart notes and base notes tune in and follow each other as in a symphony:

The scent organ was playing a delightfully refreshing Herbal Capriccio--rippling arpeggios of thyme and lavender, of rosemary, basil, myrtle, tarragon; a series of daring modulations through the spice keys into ambergris; and a slow return through sandalwood, camphor, cedar and newmown hay (with occasional subtle touches of discord--a whiff of kidney pudding, the faintest suspicion of pig's dung) back to the simple aromatics with which the piece began. The final blast of thyme died away; there was a round of applause; the lights went up. (Huxley 2006, 166-67)

The music/smell analogy is not an invention of Huxley but appears already well established in 19th century British culture. In particular, the chemist and perfumer Septimus Piesse, active in London in the second half of the 19th century and co-owner of the popular perfume house Piesse & Lubin, had already argued in his *The Art of Perfumery* (1855) for the existence of an olfactory octave, and even of semi-odors comparable to semitones⁸.

Scent thus appears capable both of producing an autonomous spectacle, like a sound medium, and of integrating itself in relation to images. Even in this second case, this does not occur in order to make the olfactory qualities of the intradiegetic objects perceptible, but in the form of an extradiegetic "smelltrack", a background commentary that would make full sense in itself even without

linking up with the visual content. In the scene of a kiss, for instance, while on a tactile level a fully realistic titillation on the lips corresponds, the scent organ only emanates pure musk (Huxley 2006, 168).

The non-illusory character of scent within feelies, even in a science-fiction fantasy such as the one proposed by Huxley, says much about the resistance of smell to any process of mediatization. In the years prior to the release of *Brave New World*, the use of scent in the cinema took place in a few instances and without a specific purpose of synchronization with the images. An example of this use occurred in 1929 during the screening of *Lilac Time* (George Fitzmaurice, 1928) when the manager of Boston's Fenway Theatre added lilac perfume to the movie theatre's ventilation system in accordance with the appearance of the film's title on the screen (Spence 2020, 4). As Vinzenz Hediger and Alexandra Schneider note, "the function of these smells was to contribute to the general atmosphere of the presentation. The narrative articulation of smells, the representation and reproduction of diegetic smells, is a rather different affair" (Hediger and Schneider 2005, 246). An affair that began to concretize, albeit with little success, only years after the publication of Huxley's novel with the application of various patents. Some instances are the "smellies", introduced in 1941 by a Detroit cinema; Hans Laube's Smell-O-Vision, which accompanied the projection of *Scent of Mystery* (Jack Cardiff, 1960); and the famous Odorama, made by scratch and sniff cards, of *Polyester* (John Waters, 1981).

Huxley's scent organ remains closer to perfume itself, if considered as a medium capable of autonomously organizing a spectacularized experience. As a matter of fact, fragrances are everyday, atmospheric, and wearable objects which represent the most concrete attempt to join sensations and evoke images, producing a para-cinematic experience which is both sensory and mental⁹.

BODIES AND SKINS OF IMAGINARY NARRATIVES

The second aspect which is fundamental to understanding the identity of the imaginary medium from an epistemological point of view concerns its imaginary content: as far as feelies are concerned, I refer to the aesthetic and narrative characteristics of *Three Weeks in a Helicopter* and of the other works which are only briefly but significantly mentioned within the novel.

The first reference to *Three Weeks in a Helicopter* appears already in the second chapter, in a dialogue between the Hatchery and Conditioning Administrator Henry Foster and his Assistant Predestinator:

"Going to the Feelies this evening, Henry?" enquired the Assistant Predestinator. "I hear the new one at the Alhambra is first-rate. There's a love scene on a bearskin rug; they say it's marvellous. Every hair of the bear reproduced. The most amazing tactual effects." (Huxley 2006, 35)

Already in this first exchange, it is evident how the attention aroused by the feely does not so much concern the story being told, as it does the enchantment aroused by the very operation of the dispositive. This one could be defined in McLuhan's terms as a superhot medium, characterized by an extreme definition and complexity of the information transmitted to the sensorium. As Laura Frost notes, "Huxley's feelies reach backward to cinema's music hall origins and forward to the imagination of technologies such as virtual reality" (Frost 2006, 450). Their aim is not so much to tell a story, which, as we shall see, is partially insubstantial, but to enchant and attract the spectator through the deployment of the medium's spectacular power. It is in this sense that, even though Huxley was writing in the 1930s and in the book there is no lack of parodic references to the narrative cinema that developed after *The Birth of a Nation* (David Wark Griffith, 1915), the feelies mainly adhere to the "cinema of attractions" paradigm coined by Tom Gunning to describe early movies (Gunning 1989) ¹⁰. It is no coincidence that throughout Huxley's novel a markedly traditionalist contrast is continually played out between high art, naively identified with the Shakespeare masterpieces loved and quoted by John the Savage, and the primitive emotions aroused by the feelies, which strike an immediate and unreflective chord with the human sensorium. As the Resident Controller of Western Europe Mustapha Mond states in Chapter XVI in dialogue with John himself (this latter being horrified by the media system of the new world): "You're making flivvers out of the absolute minimum of steel--works of art out of practically nothing but pure sensation." (Huxley 2006, 221). This pure sensation produced by the medium, which excludes thought but is rooted directly in sensory and bodily experience, is considered by Huxley to be on a par with the Marxian opium of the people that allows for easier control of the masses:

In Brave New World non-stop distractions of the most fascinating nature (the feelies, orgy-porgy, centrifugal bumblepuppy) are deliberately used as instruments of policy, for the purpose of preventing people from paying too much attention to the realities of the social and political situation. The other world of religion is different from the other world of entertainment; but they resemble one another in being most decidedly "not of this world." Both are distractions and, if lived in too continuously, both can become, in Marx's phrase, "the opium of the people" and so a threat to freedom. (Huxley 2001, 31)

What this cinema of sensation/attraction aimed at propaganda consists of becomes clearer when analysing the thin plot of *Three Weeks in a Helicopter*. As Huxley himself notes, it "was extremely simple". The feely protagonists are "a gigantic negro and a golden-haired Beta-Plus female", two individuals categorized within lower castes within the social system of 632 AF (After Ford) London in which the novel is set. The core of the plot consists of a helicopter accident that causes the man to lose his conditioning and develop a psychopathological monogamous passion for the blonde girl, to the point of kidnapping and segregating her "for three weeks in a wildly antisocial tête-à-

tête". Monogamy, in the diegetic universe of *Brave New World*, in which the cohesion of society is guaranteed by the elimination of all biological and cultural restraints on erotic and sexual impulses (including paternity and maternity), is regarded as a dangerous antisocial perversion. The feely continues according to the classic Hollywood pattern of "here comes the cavalry!": after a series of adventures and aerial acrobatics, the girl is rescued by "three handsome young Alphas", while the black man is sent in an Adult-Re-Conditioning Centre to regain his wits and lose his deviant monogamous tendencies. In the happy ending, the blonde girl becomes the mistress of all the three rescuers (Huxley 2006, 168–69).

The plot's inherent racism is based on the equation of blackness with a savagery parodically identified with traditional bourgeois morality. At the same time, it can only be partially justified by a satirical intent towards a future society organized by biologically conditioned castes. Indeed, traces of the exotic and colonial gaze current in Hollywood productions of the time seem to converge in this parody. As Laura Frost notes: "Huxley was not alone in associating cinema with racial otherness and blackness in particular" (Frost 2006, 458). Also, according to Frost, the same title of the feely is to be understood as a parody of the erotic novel *Three Weeks* by genre writer Elinor Glyn, adapted in 1914 into a motion picture directed by Perry N. Verkoff. The novel is centered on an exotic love affair involving a British businessman and a mysterious Eastern European noblewoman. However, one should not forget the most obvious reference described in depth by Huxley in *Silence is Golden*, namely *The Jazz Singer*, and especially the controversial sequence in which Al Jolson sings *My Mammy* in blackface that so disgusted the British writer. It is no coincidence that the narrative genre of *Three Weeks in a Helicopter* assimilates, at the same time, the pornographic film--the bearskin love sequence with its tactile effects propagated on the viewer's body--and the musical--where the songs are reduced to primitive, onomatopoeic verses: "'Aaaah.' 'Ooh-ah! Ooh-ah!'. An equally pertinent reference concerns the film whose innovations are at the origin of the classic Hollywood editing model, *The Birth of a Nation* (1915). The crosscutting introduced by Griffith's movie, in fact, corresponds inextricably with the topic of the rescue: more precisely with the sequence in which Elsie, besieged by blacks, is released by the Ku Klux Klan. This sequence represents the apotheosis as much of the technical revolution of cinema as of the most obtuse and violent reactionary ideology of the US South.

A further trace of cinematic colonial exoticism resurfaces in the final chapter, with the figure of Darwin Bonaparte, "the Feely Corporation's most expert big game photographer" (Huxley 2006, 252–53). Already author of "Sperm Whale's Love Life", the documentary filmmaker and explorer will find in the escape from civilization of the Savage John, caught while he is whipping himself to resist the thought of Lenina, the occasion to film his new masterpiece, "Savage of Surrey". The documentary also assumes a tragic importance in the epilogue of the novel since, marking the impossibility of escaping from the colonizing capture of the new world's media system, it inevitably leads to John's final suicide. In

Bonaparte's film, it is not difficult to glimpse a reference to the exploratory cinema of Robert Flaherty, and especially *Nanook of the North* (1922), which pandered to the general public's interest in the customs of exotic peoples shown in exhibitions, wax museums, zoos.

If it is clear that in Huxley one can hardly find a critical awareness of the prevailing racism in the culture of his time--his disdain for jazz is exemplary--, it is equally true that the sarcasm he directs at the cinema contemporary to him inevitably ends up also affecting the racism that innervates its narratives. The feelies described by Huxley are parodic pastiches of cinema as such; in them, it is possible to find all those sensory and narrative elements (exemplary of both cinema of attractions and first Hollywood genre movies) which play directly on the spectator's unconscious and shape his or her ideology. The media domain of touch and smell thus appears to us to be closely linked to the process of modelling the unconscious sensorium.

THE UNCONSCIOUS ENTERTAINMENT

The spectatorial experience envisaged by the feelies is linked to the other technologies of subjugation imagined by Huxley, such as soma and hypnopædic education, specifically aimed at conditioning the unconscious. It is significant that one of the novel's main characters, Helmholtz Watson--whose first name pays homage to the German psychophysicist Hermann von Helmholtz--in addition to being a lecturer at the College of Emotional Engineering and himself an Emotional Engineer, "composed feely scenarios, and had the happiest knack for slogans and hypnopædic rhymes" (Huxley 2006, 67). The engineering of the unconscious, as we have seen, corresponds to the aims of a medium that propagates pure sensations and emotions to the exclusion of the activation of conscious thought. This coupling of technical and mental elements is also reflected in the current mythology in the diegetic world of *Brave New World*, in which Ford not only stands in for Christ (the years are counted from his birth), but is fully identified with Freud as they were the same individual ("Our Ford--or Our Freud, as, for some inscrutable reason, he chose to call himself whenever he spools of psychological matters [...]"; Huxley 2006, 29).

In addition to the feelies as a public spectacle, Huxley's novel also features a domestic version of the device, less analysed in the critical literature. It is described in Chapter XIV, when John rushes to the hospital to assist his dying mother Linda. Each hospital room appears as a media environment, in which the functions of technology intersect with the hallucinatory and dreamlike power of the soma:

Linda was lying in the last of the long row of beds, next to the wall. Propped up on pillows, she was watching the Semifinals of the South American Riemann-Surface Tennis Championship, which were being played in silent and diminished reproduction on the screen of the television box at the foot of the bed. [...] Linda looked

on, vaguely and uncomprehendingly smiling. Her pale, bloated face wore an expression of imbecile happiness. Every now and then her eyelids closed, and for a few seconds she seemed to be dozing. Then with a little start she would wake up again--wake up to the aquarium antics of the Tennis Champions, to the Super-Vox-Wurlitzeriana rendering of "Hug me till you drug me, honey," to the warm draught of verbena that came blowing through the ventilator above her head--would wake up to these things, or rather to a dream of which these things, transformed and embellished by the soma in her blood, were the marvellous constituents, and smile once more her broken and discoloured smile of infantile contentment. (Huxley 2006, 200)

Even the few moments of wakefulness are reabsorbed within the oneiric universe produced by the combination of different media (among which we may consider, in line with Walter Benjamin who studied hashish as a medium¹¹, also the soma), as in the scene in which Linda finally realizes John's presence at her bedside:

Linda's eyes fluttered open; she saw him, knew him--"John!"--but situated the real face, the real and violent hands, in an imaginary world--among the inward and private equivalents of patchouli and the Super-Wurlitzer, among the transfigured memories and the strangely transposed sensations that constituted the universe of her dream (Huxley, 2006, 205).

The intersection between various media and sensory stimuli, besides acting directly on the unconscious and engineering its emotional content, also produces dreamscapes in which subjects are enraptured and alienated--averted, above all, from the most disturbing and tragic elements of reality such as dying.

The fact that the media system imagined by Huxley again includes and captures the olfactory dimension is no coincidence. Indeed, smell can be considered an unconscious sense for several reasons. Firstly, because of its character as a culturally neglected sense: already at the beginning of the 20th century, Georg Simmel, in his *Sociology of the Senses* (1907), had emphasized how there are no independent and objective expressions to signify olfactory stimuli, since smell alone is not sufficient to constitute an object, but remains locked up in the subjective level, consisting of comparisons and analogies (*smells like...*) (Simmel 1997). Furthermore, again according to Simmel, smell produces a paradoxical social relationship: precisely because of its character of proximity, it can give rise to effects of repulsion and distancing.

Secondly, smell is relegated to the unconscious background of human perception by virtue of its resistance to mediation and registration processes. As Constance Classen, David Howes, and Anthony Synnot note in an extensive survey of the cultural history of smell, "nor can odours be recorded: there is no effective way of either capturing scents or storing them over time. In the realm of olfaction, we must make do with descriptions and recollections" (Classen, Howes, and Synnot 2002, 3).

This link to memory is connected to the revolution introduced by psychoanalysis, and especially to the conception of smell as a repressed sense, dumped into unconsciousness by the development of human culture. Especially, in *Civilization and its Discontents* (1930), Freud considers the sense of smell as repressed and weakened by the process of civilization beginning with the acquisition of upright stature. In Freud's perspective, smell becomes an unconscious sense to rediscover and mediatize through the analytical process: as a matter of fact, the resurfacing of smell's centrality in neuroses and fetishisms makes even more urgent its integration with the conscious universe¹².

These three meanings of the unconscious character of smell (culturally neglected; neither recordable nor mediatable and therefore inextricably linked to the dimension of recollection; repressed and psychopathological) all return in *Brave New World* precisely in relation to the effects that feelies provoke in the spectator's sensorial and mental abysses. In Chapter XIII, following the experience of *Three Weeks in a Helicopter*, Lenina finally manages to realize a sexual approach with John, embracing and enveloping him with her tactile and olfactory presence. This sensation, however, awakens in John the--for him traumatic--reminiscence of the hyper-realistic feely:

And suddenly her arms were round his neck; he felt her lips soft against his own. So deliciously soft, so warm and electric that inevitably he found himself thinking of the embraces in Three Weeks in a Helicopter. Ooh! ooh! the stereoscopic blonde and anh! the more-than-real black-amoor [sic., ed.] Horror, horror, horror ... he fired to disengage himself; but Lenina tightened her embrace (Huxley 2006, 192).

The attempt to escape the sensory impact with the traumatic real (but culturally and technologically hyper-mediated) is translated into the intellectualistic and idealizing quotation from Shakespeare, which, however, continues to betray a constant reference to smell: "Give me an ounce of civet, good apothecary, to sweeten my imagination' [...] "O thou weed, who are so lovely fair and smell'st so sweet that the sense aches at thee" (Huxley 2006, 195). Although the smell, a sense of memory, persists and haunts him even when contact fades: "But her perfume still hung about him, his jacket was white with the powder that had scented the velvety body" (Huxley 2006, 195-96). In his critical analysis of Huxley's novel, Theodor W. Adorno underlines how the figure of John, far from embodying the romantic idea of the good savage, corresponds to "the type of shy, aesthetic youth, tied to his mother and inhibited, who prefers to enjoy his feeling through contemplation rather than expression and who finds satisfaction in the lyrical transfiguration of the beloved" (Adorno 1967, 105). A configuration of the human that for Adorno is, after all, just as standardized as the dystopian future citizens imagined by Huxley: "This type, incidentally, is bred at Oxford and Cambridge no less than are Epsilons in test tubes, and it belongs to the sentimental standbys of the modern English novel" (Adorno 1967, 105). What is most important, however, is that John's unconscious, far from being natural, is

also colonized by the sensations experienced in the feelies. Smell, persistent in the feelies as in memory, is an integral part of this process of conquest.

In conclusion, what do feelies tell us about the identity of yesterdays and today's media technologies? From the epistemological analysis of the imaginary dispositive, considered in its mechanical, representational, and experiential components, we can find various analogies with the contemporary processes which characterize the new media cultural horizon. Firstly, the feelies deal with a machine which absorbs its user by embracing all his or her senses; secondly, the feelies exhibit a narrative content whose main goal is more related to the production of "pure sensation" than to intellectual comprehension, reproducing a representational model which can be found in the "cinema of attraction" paradigm of early movies and vaudeville spectacles as well as in the ideological goals of classical Hollywood cinema entertainment; finally, exactly for the reasons reported before, the feelies communicate directly to the spectator's unconscious and express its content in the form of a technological dream. All these processes pass through the conquest of the sensory fields which are more elusive to the process of recording and mediatization, and especially the sense of smell, historically and culturally considered as the unconscious sense par excellence. The analysis of an imaginary medium of the past then can function as a model to comprehend real media of today, especially immersive experiences such as virtual reality, whose vocation to absorb the user involving her or his whole sensorium can be thought of as the last technological attempt to colonize and exteriorize the deepest areas of human subjectivity.

Notes

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² The difference between episteme and dispositive is clarified by Foucault himself: “Maintenant, ce que je voudrais faire, c’est essayer de montrer que ce que j’appelle dispositif est un cas beaucoup plus général de l’épistémè. Ou plutôt que l’épistémè, c’est un dispositif spécifiquement discursif, à la différence du dispositif qui est, lui, discursif et non discursif, ses éléments étant beaucoup plus hétérogènes” (Foucault, 1977, 88).

³ For an epistemological survey of this dispositive, see Grespi and Violi 2019.

⁴ Presented, not without reason, as ‘the cinema of the future’: see Heilig 1955, 1992.

⁵ On the relationships between virtual reality and post-cinematic episteme, see Casetti and Pinotti 2020.

⁶ Not far from the Boulevard des Capucines where *L’arrivée d’un train à la gare de La Ciotat* by Auguste and Louis Lumière was screened on 28 December 1895.

⁷ For a survey of the aesthetic debate concerning the meaning of music and its connection to expressiveness, see Kivy 2002.

⁸ “Scents, like sounds, appear to influence the olfactory nerve in certain definite degrees. There is, as it were, an octave of odours like an octave in music; certain odours coincide, like the keys of an instrument. Such as almond, heliotrope, vanilla, and orange-blossoms blend together, each producing different degrees of a nearly similar impression. Again, we have citron, lemon, orange-peel, and verbena, forming a higher octave of smells, which blend in a similar manner. The metaphor is completed by what we are pleased to call semi-odors, such as rose and rose geranium for the half note; petty grain, neroli, a black key, followed by *fleur d’orange*. Then we have patchouli, sandal-wood, and *vitivert* [sic., ed.], and many others running into each other”. See Piesse, 1867, 38–39.

⁹ On the mediality of the scent, see Perras and Wicky 2022.

¹⁰ For a complete survey on the relationship between early cinema and attraction see also Strauven 2006 and Gaudreault 2011.

¹¹ See Benjamin 2006.

¹² For more on the role of olfaction in Freud’s work and the subsequent history of psychoanalysis, see LeGuerèr 2001. Hediger and Schneider also note how “as we all know, psychoanalysis and cinema were invented at about the same time, a historical coincidence that has given rise to much theorising in the field of film studies. The fact that the invention of cinema runs roughly parallel with the de-odorization of public space and with the introduction of artificially produced fragrances has so far been given rather less thought”, Hediger and Schneider, 2005, 245.

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Bursting into the Image: Towards De-automatization in VR

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The art installation *Osmose* (1995) by Char Davies, one of the most widely discussed media art projects, will be explored in relation to the notion of de-automatization. The de-automatized experience in *Osmose* will be developed by looking at theories of perception by Arthur Deikman and Maurice Merleau-Ponty, as well as George Stratton's inverse goggle experiment, Bernard Stiegler's account of automation, and Gilles Deleuze's writings on the virtual. The article traces a double act of de-automatization in Davies' *Osmose* that occurs due to the indeterminate object relations in the multi-media installation on the one hand, and their intertwinement with the organic sensing body on the other. This leads to an un gearing of one's habitual perception, that produces a particular relation with the virtual dimension. By outlining the theoretical framework of the intertwining between technical object and bodily experience in *Osmose*, it becomes possible to speculate on the trajectory of contemporary VR experiences. Whilst the contemporary VR scene still relies heavily on the privileging of the visual dimension, the project *We Live in an Ocean of Air* by Marshmallow Laser Feast shows how VR environments can 'leverage on' emerging technologies to re-produce nuanced de-automatized experiences. De-automatization unravels how the reception of the de-automatized VR image reframes relations between actual and virtual.

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INTRODUCTION

Since the 1980s, several media art practices have explored the role of the body within VR environments. *Osmose* (1995) by Char Davies, one of the most discussed media art projects, is particularly important because because it produces nuanced relations between the actual and virtual. In *Osmose*, the participant is partly "immersed" in a simulated 3D interactive environment by wearing a head-mounted display. Davies integrates the "use of biometric data" (heart rhythm) in the formation of the digitized stereoscopic image that the participant experiences (Gardner et al. 2016, 52). The computer-generated immersive environment thus changes in relation to the participant's wired body. The participant's body alters the illusory three-dimensional synthetic environment through digital inputs (motion tracking). "Real life motion tracking" converts the participant's digitally recorded "breathing and balance" into data that are relayed into the simulated imagery (Davies 1998). The screen

environment that the participant experiences is a computer-generated space whose variable elements indeterminately change in relation to the participant's breathing and balance. In the interactive space of *Osmose*, Davies explores the slippery intervals between actual bodily experience, immediate environment, hardware/ software, and projected simulated image. For the artist, the work "was designed as an alternative to the dominant aesthetic and interactive sensibility of virtual reality" (Davies 1998). Through this VR installation the body of the participant becomes inter-actively involved in the production of the projected image.

The immersive experiences of *Osmose* "involve a dehabituating or 'de-automatizing' of perceptual sensibilities" (Bachelard 1994, 146; Deikman 1972). The active engagement of the participant's body in the production of the projected image in turn dehabituates, and de-automatizes the perceptual co-ordinates of the sensory body from itself. In her writing, Davies refers to dehabitation, by claiming that:

[t]his dehabituating of perception tends to occur as a result of certain psychological conditions, such as when the participant's attention is intensified and is directed toward sensory pathways; when there is an absence of controlled, analytic thought; and when the participant's attitude is one of receptivity to stimuli rather than defensiveness or suspicion (Davies 1998, 147).

As such, the body in *Osmose* reveals a different experience from the prescribed sensory behaviour that takes place in more straightforward VR experiences that tend to prioritize the visual dimension.

Revisiting *Osmose* today is highly relevant as contemporary VR experiences would benefit from the experiential and theoretical import of this work. However, it is important to develop a reading of *Osmose*, that takes into account a re-interpretation of the notion of de-automatization. By referring to theories of bodily perception from Arthur Deikman and Maurice Merleau-Ponty, as well as psychologist George M. Stratton's inverse goggle experiment, Bernard Stiegler's notion of automation, and Gilles Deleuze's virtuality it becomes possible to investigate the relations between actuality and virtuality that give rise to a de-automatized experience. In this respect, Davies' problematization of the very experience in straightforward applications of VR becomes highly relevant today. With the current explosion of VR experiences, it becomes necessary to re-examine this critique. Is the experience implicit in VR spaces increasingly automatised? The automation in more straightforward VR experiences, restricts the possibilities that are actualized within a variable system; therefore, automation is made possible by eliminating many other possibilities. By tracing modes of de-automatization, it becomes possible to speculate on how contemporary VR experiences could be informed in alternative ways. The recent project *We Live in an Ocean of Air* by Marshmallow Laser Feast shows how VR environments can utilize emerging technologies to re-produce de-automatized experiences, that lie at the intervals between actual and virtual.

DE-AUTOMATIZATION IN CHAR DAVIES' *OSMOSE*

Osmose, first exhibited at the Sixth International Symposium on Electronic Art (ISEA) in Montreal (1995), simulates a natural environment within an immersive interactive installation. Utilizing computer generated three-dimensional graphics, a head mounting display (HMD), and sound (based on user feedback), the visitor experiences a relayed reception of images that are co-constructed with the participant's own bodily data input. The projected depth-image is constantly informed by the participant through the technical apparatus. As Oliver Grau writes:

[w]ith the aid of polarized glasses, they watch his or her constantly changing perspectives of the three-dimensional image worlds on a large-scale projection screen. The images are generated exclusively by the interactor, whose moving silhouette can be discerned dimly on a pane of frosted glass (Grau 2003, 193).

The interaction within this virtual environment involves the solitary participant's relation with the technical apparatus that mediates the relations between viewer and projected image. Grau states: "[i]t is at the interface, which must be used by the active observer according to the rules of the particular illusion world, that the structures of the simulation designed for communication meet up with the human senses" (Grau 2003, 198). The nuanced intervals that negotiate human and nonhuman actors need to be further considered today. It is increasingly relevant to probe the limits of VR environments, as the boundaries between commercial and artistic applications are becoming increasingly obfuscated.

In her writing on *Osmose*, Davies articulates the significance that dehabituation has on this media art project. The notion of dehabituation and de-automatization in *Osmose* is developed from Davies' reading of Gaston Bachelard and Arthur Deikman. Dehabituation is related to the immense natural spaces in Bachelard's *The Poetics of Space* (1958). Davies observes how Bachelard "examined the psychologically transformative potential of 'real' environments like the desert, the plains, and the deep sea, immense open spaces unlike the urban environments to which most of us are accustomed" (Davies 1998, 146). This notion of dehabituation provides a means of unpacking another reading of the VR experience inherent to *Osmose*. It is useful to follow this enquiry in *Osmose* because, as Mark B.N. Hansen writes, it "eschews many of the familiar trappings of computer-based worlds, virtual reality, and game environments, including the primacy normally accorded to detached vision" and "the orientation toward a goal, and the hard-edged simulation of perspectival space" (Hansen 2001).

If Bachelard's text opens up a way for Davies to consider the spatiality of the body in VR space, Deikman's lesser known 'De-automatization and Mystical Experience', and 'Experimental Meditation', in *Altered State of Consciousness*,

focuses on readings of the experiential body that are nuanced in terms of understanding the virtuality of the body (I will return to this point). The act of de-automatization provides a departing point from the predetermined consideration of the spatio-temporal body in VR, as outlined by Hansen, and focuses on the specific role of the body in *Osmose*. Whilst *Osmose* has been extensively analysed, specific reference to the de-automatized experience itself have been under explored. Deikman's writings, which Davies refers to, provide a starting point for considering such de-automatized experiences. These are important because they will enable a better understanding of the status of the virtual dimension.

According to Deikman, the mystic state "is one of intense affective, perceptual, and cognitive phenomena that appear to be extensions of familiar psychological processes" (Deikman 1972, 26). This mystic experience considers how thinking interferes with a perception that produces knowledge. In meditative contemplation there is an active effort to "exclude outer and inner stimuli, to devalue and banish them" (Deikman 1972, 30). The psychological schema of perceptual stimuli is de-automatized in Deikman by *reversing* the functional automaticity inherent in sensori-motor perception. "The integration of the somatic systems involved in the action," is thus undermined so as to challenge "the integration of the individual mental acts involved" (Deikman 1972, 30). Whilst automation implies that by automating the sensorimotor behaviour the perceptual affect "disappears from consciousness", what happens when there is an intentional attempt to reverse the automated process? The "de-automatization of a structure may result in a shift to a structure lower in hierarchy, rather than a complete cessation of the particular function involved" (Deikman 1972, 30). Aligning it to psycho-analytic propositions of "differentiation", the de-automatization thus reveals other ways to actively experience the world. As Deikman explains this is done by intensifying the percept itself, and simultaneously prohibiting the abstract categorization associated with the automated process. In this sense cognition is arrested, and disrupted, allowing perception to become de-automatized. This ensues in "a perceptual and cognitive organization characterized as 'primitive', that is, an organization preceding the analytic, abstract, intellectual mode typical of present-day adult thought" (Deikman 1972, 33). The

"primitive" de-autonomized imagery can thus be defined as being: "(a) relatively more vivid and sensuous, (b) syncretic, (c) physiognomic and animated, (d) de-differentiated with respect to the distinctions between self and object and between objects, and (e) characterized by a de-differentiation and fusion of sense modalities (Deikman 1972, 34).

In this respect, for Deikman any clear distinctions between self and object, and perceptual and cognitive faculties become disrupted.

This de-automatized experience where the object of one's perception and the perceptual stimulus are intertwined can be observed in *Osmose*. As such this

work offers a critique to the more straightforward role of the body in VR as expressed for example by Richard Coyne's statement where he claims that: "VR is a literal enactment of Cartesian ontology, cocooning a person as an isolated subject within a field of sensations and claiming that everything is there, presented to the subject" (Hansen 2001). Contrary to the literal enactment of a Cartesian space that is highly reliant on the visual sense, in *Osmose* there is a very intricate intertwining of the multi-sensory and proprioceptive body in relation to its immediate environment. As Hansen writes: "you have let the experience of spatial navigation penetrate into your body via the immediately felt physiological modifications produced by the inhalation and exhalation that triggered your vertical movement (and the bodily leaning that triggered your horizontal movement)" (Hansen 2001). By adopting Hansen's premise that within *Osmose* the body/space distinctions are problematised, this problematization can be considered through the process of de-automatization. According to Hansen, "the body schema is cosubstantial with the activity of the body and is dynamically constitutive of the spatiality of the world" (Hansen 2001). However, this phenomenal account does not address the following question: how does a de-automatized experience configure a dissonant relationship between the self and the self-image? In order to expand this point, Char Davies' embodied visuality is instructive.

THE UNGEARING FROM A SELF-IMAGE

Davies' myopic vision partly informed the approach towards *Osmose*. As Davies writes:

In this unmediated, unfocused mode of perception, 'I discovered an alternative (non-Cartesian) spatiality whereby objects had disappeared; where all semblance of solidity, surface, edges and disjunctions between things – i.e., the usual perceptual cues by which we visually objectify the world had dissolved. These were replaced by a sense of enveloping space in which there were no sharply defined objects in empty space, but rather an ambiguous intermingling of varying luminosities and hues, a totally enveloping and sensuous spatiality' (Hansen 2001).

A vision that disintegrates the visual field aligns it more closely with a tactile or sensuous spatiality, bringing the visual sense in closer proximity with the other senses. Such a proprioceptive relationship between vision and the other senses is extended in *Osmose* and needs to be more closely scrutinized. In order to explore this sensory experience, it is useful to turn to a clinical research case study by experimental psychologist George M. Stratton. Stratton experimented with inverting upright vision at the University of California in 1895/96 (Schuler 2015, 152). The experiment performed by Stratton used prism goggles to invert one's perception of their visual field. In other words, the actual visual image of the world in this experiment was rotated by 180 degrees. As Jonathan Hale

writes, “[t]his is technically a ‘correction’ of what happens in normal vision, in the sense that the image on the back of the retina is normally already inverted” (Hale 2017, 40). Through such an experience, the cognitive understanding of the body is confused, as what is usually organized according to an “upright” vision is reversed. Hence the tactile sense, will confuse right with left. For example, if one tries to shake someone’s hand whilst wearing the goggles, they will “perceive” the image of the hand as being on the opposite side of their visual field. With extended use, the brain and bodily motility will eventually adjust to this reversed image. The brain would thus “normalize the image by re-inverting back to normal” (Hale 2017, 40). But this correction or “normalization” of vision only worked “...for more distant views. But not so well when he looked at his own body...” (Hale 2017, 40).

In *Phenomenology of Perception* (1945), Maurice Merleau-Ponty refers extensively to Stratton’s inverse goggle experiment. What this experiment reveals for Merleau-Ponty are the proprioceptive and motility operations of the phenomenal body. Merleau-Ponty explains how this experiment reveals two “irreconcilable representations of the body” (Merleau-Ponty 2009 [1945], 286). This irreconcilability occurs between the inverted visual perception field and the motor-sensory tactile sensation. Following this inversion, the motor-sensory tactile sensation needs to respond to the change in the visual perceptual field. This produces a dissonance between the actual body’s sensori-motricity and the perception of the visual field. The dissonance between actual bodily motricity induces a de-automatized experience of the very mode in which the virtual becomes actualised – *i.e.*, where I sense I am positioned in the world through proprioception, and how I view the world is not aligned.

Despite the disorganization of the body from its environment, according to Merleau-Ponty the experiment shows how the body is geared towards its spatial re-anchoring onto the world. As Merleau-Ponty writes,

...we need an absolute within the sphere of the relative, a space which does not skate over appearances, which indeed takes root in them and is dependent upon them, yet which is nevertheless not given along with them in any realist way (Merleau-Ponty 2009 [1945], 289).

According to Merleau-Ponty, this shows how “everything throws us back to the organic relations between subject and space, to that gearing of the subject onto his world, which is the origin of space” (Merleau-Ponty 2009 [1945], 293). In Hale’s description of the phenomenal body in Merleau-Ponty, he writes “the way in which we construct our broader sense of three-dimensional space is the intermodal connection between vision and proprioception that develops as we learn to move our whole body around in the world” (Hale 2017, 40). The proprioceptive dimension between the senses in relation to movement inform the gearing towards space. As Merleau-Ponty writes: “it would appear then that it is the experience of movement guided by sight which teaches the subject to harmonize the visual and tactile data” (Merleau-Ponty 2009 [1945], 286). For

Merleau-Ponty these experiments reveal the gearing that re-aligns the actual body's sensori-motricity with its virtual field. In other words, for Merleau-Ponty there is always an anchoring of the subject in space. Hence Merleau-Ponty writes: "[t]his maximum sharpness of perception and action points clearly to a perceptual *ground*, basis of my life, a general setting in which my body can co-exist with the world" (Merleau-Ponty 2009 [1945], 292). And, according to Merleau-Ponty, this applies to Stratton's experiment as the subject becomes geared towards an actual perceptual field (the upright view of the world) during the course of the experiment, *i.e.*, the tactile body becomes re-wielded to the visual perception of the world.

In another interpretation of the phenomenal body Drew Leder claims that "the body is not a point but an organized field in which certain organs and abilities come to prominence while others recede" (Leder 1990, 24). Here again it becomes important to reconsider how the technical object's relation to the body increasingly affects the bodily schema. Leder, echoing Merleau-Ponty, calls attention to "the self-effacement of bodily organs when they form the focal origin of a perceptual or actional field, an example of this is the invisibility of the eye within the visual field it generates" (Leder 1990, 26). Leder's remark reveals how when an organ, such as the eye, is a focal origin of a perceptual field, its proprioceptive relation to other senses is automatized. In the case of Stratton's experiment, the inability of the eye to be a clear focal origin, due to the reversal of the perceived image, meant that it entered a state of de-automatization whereby its relationality to the tactile sense must then become re-anchored in the world.

Here however it becomes possible to consider this experiment not as a "gearing of the subject onto his world" but as the un-gearing of the participant from oneself. In Stratton's experience of the device, he claims: "I had the feeling that I was mentally outside my own body" (Gregory 1997, 205). As such, the object may be considered in a different manner; the technical object, the prism goggles, actively affect the self by producing a dissonance between the sensing body and its virtual field. This experiment was made possible after developments with light refraction through a glass prism, starting from Sir Isaac Newton's prism experiments in *Opticks*. As art historian Jonathan Crary states when referring to these experiments: "Newton is less the observer than he is the organizer, the stager of an apparatus from whose actual functioning he is physically distinct" (Crary 1991, 40). The "observer is disjunct from the pure operation of the device and is there as a disembodied witness to a mechanical and transcendental re-presentation of the objectivity of the world" (Crary 1991, 41). The technical object and its connection to the organic body informed novel ways of seeing the world. The experiment presupposes a hybrid relation between technical prism and organic eyes. The complexity of the organic eyes which is usually overlooked in relation to the unity of its function is called into focus through this experiment (Themistokleous 2021, 144). Hence, in Stratton's experiment relations between the virtual field and the sensing body cannot be easily distinguished from one another. In this case the visual device becomes an active agent that affects the behaviour of the participant. The technical object and its wiring with the body

produces a de-automatized experience. By focusing on this relation, between a technical object like the prism and its attachment with the sensing body, we can better understand the de-automatized experience in *Osmose*.

The ensuing de-automatized relation between human and the technical apparatus developed at this point need to be further considered because the technical object evolves and re-organizes itself beyond the will of the human. The de-automatized experience, as we shall see, also changes in relation to its broader technical and cultural milieu. And so, how do we chart a de-automatized experience within our current technical age? According to Bernard Stiegler "the technical object is no longer merely inert, but neither is it living matter... [it] transforms itself in time as living matter transforms itself in its interaction with the milieu" (Stiegler 1998, 49). Stiegler's non-anthropocentric position stresses that the technical object increasingly evolves in and of itself, *i.e.* beyond human intentionality or mastery. Yet, as Stiegler suggests, the human while no longer being the "intentional actor" is now the "*operator*" of the technical object, and of the broader technical system (Stiegler 1998, 66). Stiegler reveals the misunderstanding of the technical object and the "possible alienation of humanity (or of culture) by technics" (Stiegler 1998, 66). He observes that "[t]o know the essence of the machine, and thereby understanding the sense of technics in general, is also to know the place of the human in technical ensembles" (Stiegler 1998, 66). In *Technics and Time 1*, Bernard Stiegler explains how through automation certain possibilities are actualized within a variable system, therefore automation is made possible by eliminating many other possibilities. A better understanding of the technical object provides a grasp of the indeterminate virtual possibilities that the technical object could offer.

De-automatization developed in relation to the subject by Deikman can be superimposed with Stiegler's critique of automation. In the reading of *Osmose*, we can assume that there is a double act of de-automatization going on, *i.e.*, from the technical field of software-hardware, that to a certain degree evolve in and of themselves, to the intertwining of the sensory body of the participant experiencing the device. The nonhuman assemblage of software-hardware processes create a field of technical objects that in turn de-automatize the body of the viewer. The multiple entanglements between human and nonhuman agents further the de-automatized process. This this induces a particular understanding of virtuality. In order to expand what is meant by virtuality, we need to turn to Gilles Deleuze's reading of Henri Bergson's notion of the virtual in *Bergsonism* (1966).

According to Deleuze, the virtual is not distinct from the real, but from the actual. He writes:

We know that the virtual as virtual has a reality; this reality extended to the whole universe, consists in all the coexisting degrees of expansion (détente) and contraction. A gigantic memory a universal cone in which everything coexists with itself, except for the differences of level (Deleuze 1991 [1966], 100).

Deleuze explains how “lines of actualization correspond to the levels or the virtual degrees of expansion (*détente*) or contraction” (Deleuze 1991 [1966], 101). However, “what coexisted in the virtual ceases to coexist in the actual and is distributed in lines or parts that cannot be summed up” (Deleuze 1991 [1966], 101). Through the technical intertwinement, the body in *Osmose* experiences the intervals between a mode of actualization that isn't as straightforward compared to habitual experience. Through this process of actualization one experiences the mnemonic intervals between virtual and the transition to actualization. Such a VR experience of the intersection between technical object and sensing body in *Osmose* is the ontological basis of de-automatization.

VR ENVIRONMENTS TODAY

According to Tom Gunning “the enthusiasm of the early avant-garde for film was at least partly an enthusiasm for a mass culture that was emerging at the beginning of the century, offering a new sort of stimulus for an audience not acculturated to the traditional arts” (Gunning 1990, 58). Today, we are witnessing an emergence of a new sort of mass stimulus through the plethora of VR environments that are being applied within different (often overlapping) commercial, scientific and artistic contexts. It is argued that in most cases the VR experience still remains limited to Hansen's critique of VR environments. This point can be observed in Anish Kapoor's *Into Yourself, Fall* (2018). Presented by the Taiwanese company HTC at Art Basel, Hong Kong, *Into Yourself, Fall*, offers a “journey through the human body, promising a ‘disorienting sensation of radical introspection’ as the viewer negotiates vertiginous twists in a world that is both abstract and uncomfortably familiar” (Aspden 2018). Kapoor focuses solely on the VR image to produce exaggerated visual effects of forests, viscera of a human body and deep space (Aspden, 2018). In this case, one can follow what Hansen explained as “the deployment of virtual environments being ‘piecemeal and premised on an unthematized... and wholly implausible hope that vision can by *itself* reconstitute the richness of human perceptual function” (Hansen, 2001). But as Hansen and others have noted Davies' *Osmose* moves beyond these limitations in VR environments. In the article ‘Body Editing: Dance Biofeedback Experiments in Apperception’ the authors observe that:

Davies' work is thus deeply informed by the theoretical problematics of rendering virtual and digital space into a Cartesian grid that is often anything but immersive. Davies finds that the realist, visual aesthetic common to Virtual Reality and computer graphics recreates a false (Cartesian) dichotomy of subject/object (Paula Gardner et. al 2016, 52).

Whilst today with more advanced computational power, the commercialization of VR media is thriving, it becomes crucial to speculate as to how the experience within VR media can continue to offer possibilities of de-automatization. The

project *We Live in an Ocean of Air* created by Marshmallow Laser Feast, comprised of the London-based Barney Steel, Ersin Han Ersin and Robin McNicholas, is a project that utilizes VR environments in a way that, to a certain extent, de-automatizes the participant's experience. The installation opened at the Saatchi Gallery in London (2018). In the article 'Nature Meets Technology in this Mind-Blowing Virtual Reality Experience', Nicholas Yong writes:

through the power of virtual reality (VR), the experience transports you not only to the base of a giant sequoia (these massive redwoods make up some of the world's largest and tallest trees and can reach a height of 115m - almost twice the height of the ArtScience Museum), but also into the tree and into a virtual realm beyond imagination, description and understanding (Yong 2022).

In addition to the VR simulated image, the experience integrates binaural sound, scent dispersal systems, wind machines, motion trackers, heart-rate monitors and a breathing sensor. Participants had to wear a backpack with a battery in it, a clunky piece of hardware to make this multi-sensory experience work. Yong states that "as you explore the space (virtual grid walls serve as your boundaries), the outside world and even the floor and ceiling disappear completely" (Yong, 2022). In the VR experience breathing is relayed into the image, when one takes their first breath "the cycle of air is ignited" and a "sudden flow of particles invade the area, participants realise their hands are visually pulsing with red oxygenated blood" (Segreto, 2019). The participant's breathe and body-image become represented in the VR digitized space. As material surfaces become converted into re-presented information the distinctions between the simulated "natural" world and bodily experience become blurred. This experience is comparable to the reading of *Osmose* that has been traced thus far.

In *Osmose* the participant's breathing contributes to the multiple entanglements of internal and external bodily stimuli that produce a dissonance between one's actual tactile body and their visual field. Such a dissonance emphasizes how the participant is experiencing a mode of actualization. Similarly, the multi-sensory experience implicated in *We Live in an Ocean of Air* moves beyond the usual excessive reliance on the visual image in VR applications, such as the one in Kapoor's *Into Yourself, Fall*, by enhancing the multiple entanglements between one's sensation, the intricate technical apparatus and the incommensurable relation to the virtual image of oneself.

In the article "Why Virtual Reality is a Medium still in need of 'Cradling'", Ben Luke makes this point by emphasizing that VR experiences focus mostly on the software rather than the hardware (Luke, 2022). *We Live in an Ocean of Air* provides an exception in this respect, but also shows how the hardware is less a site for experimentation in VR experience. And Luke explains how, "corporate gatekeeping of the technologies may limit the potential for artistic interventions" (Yong, 2022). However, there are cases, as the author shows, where artists re-appropriate and subvert existing technologies. Case in point

being the Kinect add-on motion-sensor for Microsoft's X-box, that, as Luke writes, "digital artists were hacking" (Yong, 2022). Looking back at Davies' *Osmose*, the intricate intertwining of the software, hardware with the physical body, are what produced de-automatized affective experiences. The corporations driving the practices and institutions involved in the making of certain VR applications are – to a certain extent – "black boxed". Joanna Zylinska elaborates on the software driven "black boxes" (Zylinska 2017, 66) that are part of VR headsets, showing how the software used in such VR products is owned by tech-corporate giants, and hence is copyright protected. That is not to say that there are not slippages between profit-oriented, and more experimental applications of media, but in general the control of software applications developed by corporations, such as Microsoft, assumes that VR experience will, to a certain degree, assume a mode of automated control of bodily experience. A step towards achieving such de-automatized experiences is also to overcome the corporate gatekeeping that is part of the development of VR technologies.

CONCLUSION

The de-automatized experience that informs Char Davies' *Osmose* art installation was explored by looking at how Arthur Deikman's develops the notion of de-automatization in his own writings. This then led to a reading of what constitutes the de-automatized experience in the *Osmose* project. By referring to Maurice Merleau-Ponty's reading of George M. Stratton's inverse goggle experiment, the notion of de-automatization becomes re-articulated, and re-framed. The un gearing of the subject from itself allows a re-conception of the de-automatized experience that involves the dissonance between actual and virtual. Finally, the *We Live in an Ocean of Air* by Marshmallow Laser Feast has been analysed as an example of a contemporary VR environment that marks the possibilities of current VR spatial environments.

The indeterminate virtual possibilities unravelled in *Osmose* due to the nuanced and indeterminate overlapping between organic and inorganic bodies inform the de-automatized experience. Paradoxically, the drive for increasingly automatized technologies restricts the virtual possibilities of VR. Following Stiegler, we can infer that through the act of automation certain possibilities are actualized within a variable system, therefore automation is made possible by eliminating many other possibilities. Kapoor's *Into Yourself, Fall* (2018), is an example of a more straightforward automated VR experience.

Returning to Deikman account of de-automatization, the author writes:

...under special conditions of dysfunction...the pragmatic system of automatic selection are set aside or break down, in favor of alternate modes of consciousness whose stimulus processing may be less efficient from a biological point of view but whose very inefficiency may permit the experience of aspects of the real world formerly excluded or ignored (Deikman 1972, 45).

If the de-automatized experience leads to experiences of the real world that are often excluded, how can VR simulate such experiences using today's technical systems? This article wants to highlight a de-automatized experience that unlike Deikman's account is driven by the technical apparatus and its entanglement with the human body. Following Stiegler's articulation of automation and Deleuze's notion of virtuality, a double act of de-automatization happens on the side of inorganic matter on the one hand, and its intertwinement with the organic body on the other. Hence, actualization and its relation to the virtual becomes more nuanced for the participant in such readings of VR.

In both *We Live in an Ocean of Air* and *Osmose*, the process of de-automatization can be further understood by looking at Deleuze's interpretation of the virtual. In Deleuze's reading of Bergson, he writes: "the way in which we understand what is said to us is identical to the way in which we find a recollection" (Deleuze 1988 [1966], 57). This for Deleuze, is a "leap into being, into being-in-itself, into the being in itself of the past" (Deleuze 1988 [1966], 57). This assumes that we place ourselves in the past through a "kind of transcendence of sense" because we cannot actually "recompose the past with presents" (Deleuze 1988 [1966], 57). According to Deleuze [and Bergson] the past coexists with the present. Now if "we place ourselves in a particular region" of the past that "corresponds to our actual needs" (Deleuze 1988 [1966], 62), the experience within these installations challenges this mode of habitual recollection. "The recollection-becoming-image enters into a 'coalescence' with the present", it therefore "passes through 'planes of consciousness' that put it into effect" (Deleuze 1988 [1966], 65). But this very mode of "becoming image" does not apply in the two VR installations that have been explored thus far. The very aspect of the de-automatized moment as developed here through these installations can be considered in the following passage:

We begin from this undivided representation (that Bergson will call the 'dynamic scheme'), where all the recollections in the process of actualization are in a relationship of reciprocal penetration; and we develop it in distinct images that are external to one another, that correspond to a particular recollection (Deleuze 1988 [1966], 66).

The move towards becoming a distinct image in this case is not clear, instead there is a move towards extending one's awareness of the processes of actualization. This is because the technical objects in *We Live in an Ocean of Air* and *Osmose* are entangled with the body in a way whereby the proprioceptive relationship between senses is de-automatized. Consequently the images are not made distinct, they become indistinct... as one bursts into the -virtual- image.

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Pour une archéologie cinématographique de la condition immersive:

La Jetée (Chris Marker, 1962)

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Today we tend to emphasise the technological dimension of immersive devices, insisting on the notions of interactivity, virtual reality or augmented perception—all of which promise to intensify museum experience or the film experience. But it must be recognised that the principle of immersion is older than the more or less recent definitions of immersive devices or museography. Certain primordial forms of scenarisation, of staging and of dramatisation were able to play an immersive role very early on, foreshadowing the installation of the subject of perception in an attitude of adhesion, which can go as far as subjugation. Scripting, staging, psychic projection: if an archaeology of immersion is required, it must include an account of the role of cinema in the formation of the immersive condition. Our hypothesis is that an archaeology of immersion must pass through cinema: not only through its device, but primarily through its fictions, narratives, and figurations. In this perspective, we propose to examine the historical contribution of cinema to the formation of the immersive condition, through an analysis of Chris Marker's *La Jetée* (1962). If this unique film has often been studied, its capacity to stage different fundamental aspects of an immersive experience, involving at the same time the interplay of memory, aesthetic relation, and the psyche, has not been considered yet.

Notre époque met volontiers l'accent sur la dimension technologique des dispositifs immersifs, insistant tour à tour sur les notions d'interactivité, de réalité virtuelle et de perception augmentée—autant de promesses d'intensification de l'expérience muséale ou cinématographique. Mais il faut reconnaître que le principe d'immersion est plus ancien que les acceptions plus ou moins récentes de dispositif ou de muséographie d'immersion¹. Certaines formes primordiales de scénarisation, de mise en scène et de dramatisation ont pu jouer très tôt un rôle immersif, augurant l'installation du sujet de la perception dans une attitude d'adhésion (appareillée ou non) qui peut aller jusqu'à la subjugation. Scénarisation, mise en scène, projection psychique: on admettra que si une archéologie de l'immersion s'impose, une prise en compte du rôle du cinéma dans la formation de la condition immersive s'impose dans le même temps.

Notre hypothèse est en effet qu'une archéologie de l'immersion doit en passer par le cinéma et, en première instance, par ses fictions et ses figurations, et non pas

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seulement par son dispositif. Qu'est-ce à dire? Il ne s'agira pas ici de considérer les effets déployés intentionnellement par des procédés cinématographiques contemporains, à l'instar de la grotte Chauvet filmée en 3D par Werner Herzog (*La Grotte des rêves perdus*, 2010). Notre propos est plutôt d'interroger la contribution historique du cinéma à la conception de l'immersion comme expérience psychique et perceptive, à partir de certains films exemplaires. À quel titre? Pour leur capacité à mettre en scène, figurer ou scénariser certains traits constitutifs d'une condition immersive que le médium—en vertu de ses facultés réflexives—aura ainsi contribué à édifier (longtemps après les explorations des tombeaux d'Égypte et autres déambulations souterraines supposées être au fondement de l'immersion²). Nous présumons que le cinéma, médium fondé sur la projection des images autant que sur celle du spectateur qui s'absorbe dans leur monde, et engageant à ce titre un régime identificatoire complexe³, a participé à sa manière au façonnage de cette condition.

Notons au passage que ce que nous entendons par condition immersive ne se laisse pas confondre avec tel ou tel dispositif particulier déterminant la position du visiteur du musée ou, autrement, du spectateur de film. Il s'agit davantage d'un état transitoire—de l'immersion, comme du rêve, on entre et sort—, d'une forme de *translocation* susceptible d'affecter indifféremment l'homme du cinéma, le visiteur du musée, ou encore le *video gamer*. Initiée dans les tombeaux et autres souterrains, l'empire (l'emprise) de la condition immersive investit désormais à peu près tous les lieux, régimes et dispositifs d'image. Stipulons, à cet endroit, que notre ambition est moins de spéculer sur la condition immersive contemporaine que de scruter les imaginaires singuliers auxquels le cinéma a donné forme (fictions, figures), alors que l'immersion n'était pas nécessairement désignée en tant que telle. Ce qui nous importe est que le cinéma a rêvé et figuré l'immersion à un moment où celle-ci n'avait pas encore trouvé sa pleine extension technologique dans l'espace muséal ou cinématographique.

Avant d'en venir au corpus choisi pour la présente étude, quelques précisions sont nécessaires quant au projet d'archéologie que ce texte entend initier. Tout en prenant en considération certains dispositifs comme le diorama ou le panorama, notre projet diffère, en premier lieu, de la plupart des travaux liés à l'archéologie des médias dès lors qu'il s'agit de reconstituer les origines *fictionnées* de l'immersion au moyen d'un repérage de schèmes ou de traits constitutifs de cette expérience figurés par les fictions du cinéma; et non, par exemple, d'établir une généalogie des dispositifs et des formes de médialité⁴ immersifs. En dépit d'une proximité avec le dessein de *L'Archéologie du savoir* (Foucault 1969), notre propos s'en écarte, en second lieu, car nous ne nous intéressons pas à l'émergence d'une formation discursive et aux énoncés qui la sous-tendent ou l'escortent. Notre archéologie sonde plutôt la formation d'une condition perceptive (perceptions internes et externes)⁵ impliquant une position de sujet, l'immersion engageant le triple jeu de la mémoire, de la relation esthétique et de la psyché. De toute évidence, notre archéologie n'implique au sens strict ni fouille, ni vestiges: elle est "purement descriptive⁶". Pour autant,

elle n'est pas sans terrain, ni sans objets: notre terrain ressortit à l'histoire du cinéma pré-numérique et, en particulier, aux fictions en prise avec l'expérience muséale. Et pour ce qui concerne les objets de notre archéologie, ils peuvent être qualifiés d'objets immatériels: ce sont autant de figures de l'immersion, d'ordre mi-esthétique, mi-théorique.

Enfin, nous nous focaliserons pour lors sur l'analyse d'un objet visuel singulier, soit l'emblématique "photo-roman"⁷ de science-fiction de Chris Marker. *La Jetée* (1962) nous permettra en l'occurrence d'interroger, à la faveur de trois lectures du film dont les préoccupations se croisent sans se confondre:

1°) la façon dont l'immersion met en jeu une fonction imaginative/mémorielle (lorsque le héros, déambulant dans des souterrains aux allures de musée et explorant les couloirs de l'image mentale, voit surgir, revivifié, le souvenir);

2°) son articulation avec l'objet et l'espace de la représentation (lorsque, au retour d'un voyage dans le temps faisant figure d'expérience immersive, ce héros bute sur une énigmatique clôture);

3°) le régime identificatoire complexe que l'immersion déploie, partagé entre fétichisme et narcissisme (lorsque, regagnant *La Jetée* à la fin du film, notre homme devient tout à la fois acteur et spectateur de la situation).

PARCOURS: S'IMMERGER DANS LE MUSÉE DE LA MÉMOIRE

Tout concourt pour que *La Jetée* soit un objet de premier choix pour élaborer une archéologie de la condition immersive: le protagoniste y demeure principalement les yeux bandés mais sa quête, contrainte, est celle de l'immersion dans un passé heureux disparu qu'il faut recapturer. En contrepoint de la jetée éponyme d'Orly, souvenir d'enfance du protagoniste et image de son humaine destinée, c'est à une plongée dans un monde enfoui que le film appelle: les souterrains de Chaillot, qui accueilleront ensuite les archives de la Cinémathèque (1963), dans une colline dont les carrières originelles rappellent la dimension stratigraphique, filent la métaphore même des couloirs du temps. De la grotte primitive, avec ses aspérités rocheuses, et plus encore des boyaux des sépultures, ils ont les atours: reviennent en boucle les images de visages spectraux auxquels se surimpose le masque inquiétant d'un crâne, avant qu'un fondu enchaîné ne laisse surgir des racks alignés comme des sarcophages disposés le long de la chambre funéraire d'un tumulus (la porte d'accès du tumulus apparaissait avant, entre les images du Paris détruit et celles de la survie dans les souterrains). De la matrice à la décomposition, ces corridors écrivent le destin de l'humanité, projet qui est aussi celui de leur partie émergée dans ses avatars historiques: le palais éclectique, néo-byzantin, du Musée d'Ethnographie du Trocadéro (depuis 1882), devint en 1937 le palais de Chaillot abritant le Musée de l'homme, où Paul Rivet souhaita montrer l'humanité comme "un tout indivisible, non seulement dans l'espace, mais aussi dans le temps", et

où aujourd'hui s'inscrit dans son parcours muséographique le cheminement métaphysique des origines (1), de l'identité (2) et du devenir (3).

Cette quête métaphysique dans les couloirs où survivants et expérimentateurs sont plongés et se perdent, se rejouera plus loin (ou plutôt avant), comme en diptyque, dans la visite au Muséum d'histoire naturelle, sur un mode plus optimiste: l'homme cobaye qui se remémore et la fille de ses beaux souvenirs s'absorbent dans les vitrines, face aux bêtes ("non pas mortes mais éternelles") de la Grande Galerie, questionnant l'évolution, la survie des espèces, l'Anthropocène.

L'immersion muséale, qui est aussi celle du spectateur, se fait dès avant la visite au musée, via un autre mode de visite, celui d'une succession d'images fixes, qui n'isole pas ce photo-roman comme un objet "para-cinématographique" singulier, mais le rattache à la pratique de la projection de diapositives qui exerça une fascination précoce sur Marker⁸. Inventé dans les années 1850 par les frères Langenheim, le dispositif du hyalotype n'est pas qu'un dispositif pré-cinématographique: dépassant rapidement le divertissement spectaculaire, il devint dès les années 1860 l'outil pédagogique des conférences illustrées, puis incarna aussi à travers l'avatar du diaporama, dans les années 1960, un incontournable de la leçon d'histoire de l'art, ainsi qu'une manifestation de la mémoire collective et intime à travers la projection familiale domestique (Lacoste, Boulouch, Lugon et Sandrin 2007). À cet enchaînement d'images⁹, la plongée dans le noir et le récit vocal qui l'accompagne apportent déjà une première visée immersive primitive, mais qui va s'approfondir et se densifier. Dès les premières images se prépare l'immersion au Muséum: dans l'expérience imposée à l'homme, choisi entre mille pour sa capacité de fixation sur une image du passé, se met en place une collection d'images mentales appelée à former un musée de la mémoire. C'est par le véhicule d'une projection de sculptures, ou plutôt de fragments sculptés recomposés, qu'éclot cette plongée dans ce qui pourrait être une quatrième dimension. Ce projet est presque annoncé par la voix d'un film antérieur de Chris Marker, *Les statues meurent aussi* (1953):

C'est que le peuple des statues est mortel. Un jour, leurs visages de pierre se décomposent à leur tour. Une civilisation laisse derrière elle ses traces mutilées, comme les cailloux du petit Poucet mais l'histoire a tout mangé. Un objet est mort quand le regard vivant qui se posait sur lui a disparu.

Dès lors, pour trouver remède à la disparition—reconquérir le passé disparu et empêcher sa propre fin—, l'homme de *La Jetée* doit, métaphoriquement et cognitivement, réunir les fragments dispersés, retrouver le regard vivant sur l'œuvre. Le leitmotiv que constitue le groupe du *Putto à l'oie* [Fig. 1], un marbre antique qui est lui-même par nature une reconstitution (une copie romaine exécutée vers 110-160 ap. J.-C. d'après un bronze hellénistique de Boéthos de Chalcédoine, conservée au Capitole), montre significativement ce travail à l'œuvre, comment le groupe statuaire recomposé l'aide dans la reconquête du souvenir. À une première apparition discrète, fantomatique, où l'animal illisible



devant l'enfant caché n'est qu'un bloc informe au milieu des débris lapidaires de la civilisation, s'ajoute ensuite une rencontre dans la pénombre avec l'enfant à l'oie, dont on discerne alors l'interaction. La recomposition visuelle est achevée par une apparition du groupe sculpté en pleine lumière, qui redonne aux deux protagonistes toute leur lisibilité. Au terme de ce travail de suggestion des images émerge enfin et renaît le souvenir réel avec deux photogrammes qui conjuguent, dans le paradis retrouvé du monde pacifique, la tête d'un enfant blond et un vol d'oiseaux (comme si leur envol accompagnait l'immersion dans le souvenir)¹⁰.

Partie du diaporama, cette entreprise de fabrication d'images mentales devient visite immersive dans le musée de la mémoire. Le processus se répète, s'affine plus loin. Après que l'homme cobaye l'ait croisée sur *la jetée* d'Orly, le souvenir de la fille aimée rejaillit progressivement des têtes de statues; un fondu-enchaîné entremêle les ruines, la fille, une statue allongée à la tête mal raccordée, une statue acéphale, un buste sans tête, enfin une tête sculptée: "D'autres images se présentent, se mêlent dans un autre musée qui est celui de sa mémoire", précise la voix.

L'image rémanente est au service de cette fabrique de l'imaginaire et prolonge la projection en immersion. Une série d'images, toujours avant la visite muséale, relie projection et statues juste avant le fameux "battement d'œil"¹¹ de la jeune endormie qui anime le photo-roman. L'immersion dans le souvenir de la femme aimée rendue à la vie semble facilitée, consolidée, et même produite par la présence comme en filigrane, dans son visage assoupi sur son bras replié, de la statue de *Ariane endormie* (antique du Vatican, à la gestuelle mille fois reprise), et partant de la *Vénus* de Giorgione (Dresde) qui en est l'écho [Fig. 2].

L'efficacité visuelle de *Ariane* antique et ses avatars, qui avait frappé Aby Warburg par son aptitude à la survivance (*Nachleben*)¹², est un moteur de réminiscence: elle infuse le visage somnolent de la jeune femme et bientôt le réactive. En cela, le battement d'œil que la belle adresse au spectateur marque son triomphe sur la disparition, sa survie dans la mémoire de l'homme cobaye et le succès de l'entreprise d'activation des souvenirs à l'œuvre pour le salut

Fig. 1
Six photogrammes de *La Jetée* avec le groupe statuaire du *Putto à l'oie*, d'après le marbre antique (copie romaine exécutée vers 110-160 ap. J.-C., d'après un bronze hellénistique, Rome, Musei Capitolini).

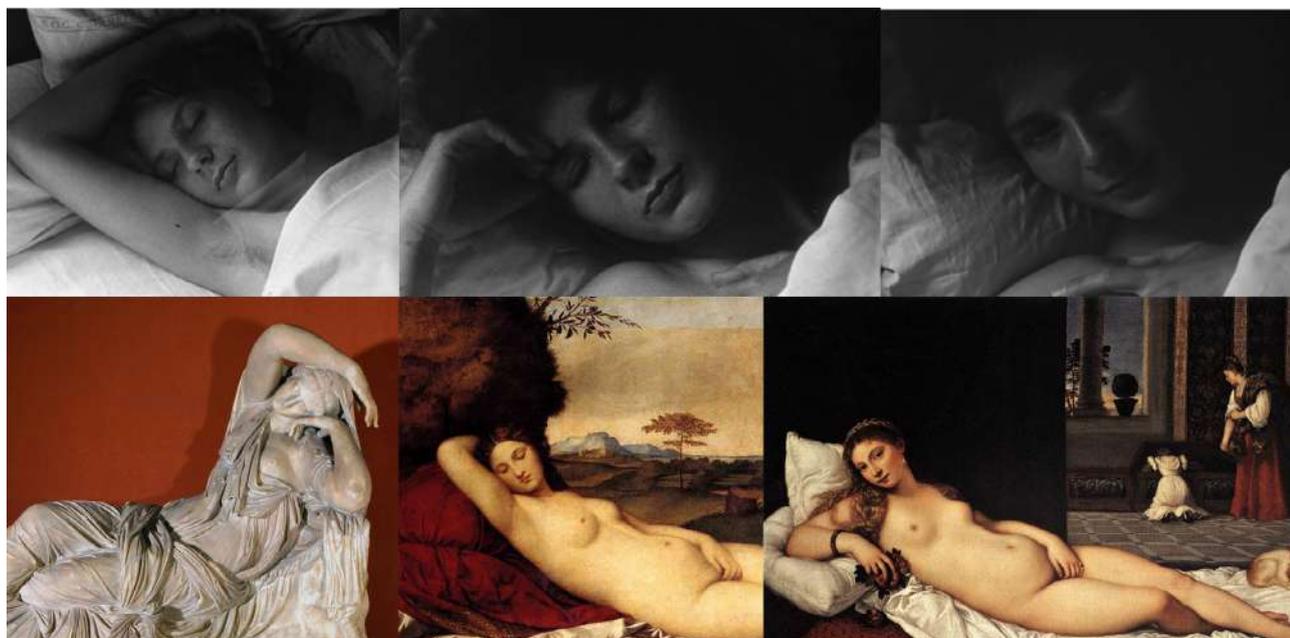


Fig. 2
Trois photogrammes de *La Jetée* avec *l'Ariane endormie* (marbre antique, Vatican), la *Vénus* de Giorgione (huile sur toile, 108 x 175 cm, Dresde, Gemäldegalerie, 1509-1510) et la *Vénus d'Urbino* de Titien (huile sur toile, 119 x 163 cm Firenze, Uffizi, 1538).

de l'humanité. Ici, au stade de maîtrise avancé de la gymnastique des images mentales atteint par le protagoniste, il n'est plus besoin de citation de source statuaire pour convoquer les fragments du passé. Le chant des oiseaux se fait entendre comme pour reprendre le fil noué plus tôt. Le diaporama fait apparaître et disparaître, surimpose plusieurs clichés du visage de chair vu en gros plan, la circulation fluide atteste une immersion accomplie dans le passé revenu à la vie. La longue persistance sur l'écran des images de la jeune femme dit bien qu'elles véhiculent en elles-mêmes d'autres charges, à la manière de ce que, pour le Swann de Proust, Odette porte en elle le souvenir de la Zéphora peinte par Botticelli (Proust 1913 [1989], 221). D'autres charges de belles endormies qui pourraient intégrer en finale, dans l'image clin d'œil, la *Vénus d'Urbino* de Titien, quant à elle bien réveillée du sommeil de la déesse de Giorgione [Fig. 2]. Convocation des images, reconquête du souvenir, le cobaye oscille entre invention ou rêve, mais son art de la mémoire semble bien s'appuyer sur un Musée imaginaire, tant personnel que collectif, moins savant que sensible, un lieu mental qui est celui des métamorphoses¹³.

Au cinquantième jour des expériences, après quelques promenades, le couple se retrouve enfin au Muséum. Dans ce musée au référent bien réel, qui extrait (arrache, dirait Quatremère de Quincy) les sujets, les spécimens de leur contexte naturel originel pour les taxidermiser, les rassembler et les projeter dans le monde nouveau de la Grande Galerie, l'immersion se réalise à nouveau, s'enrichit. Les visiteurs qui s'y emplissent d'images (comme dans tout musée) font l'expérience du déplacement topographique (la translocation dans la galerie, face à, dans la vitrine) et temporel (dans une nature primordiale, vivante et atemporelle), ils plongent, s'absorbent dans la vision. En un *continuum* (le "diaporama" est construit sur les passages, les oscillations de points de vue, l'échange des regards), l'homme regarde, il la regarde regarder, le spectateur voit les animaux, voit les visiteurs les regarder, ils observent la faune des

vitrines qui les observe en retour, il désigne, elle touche. "Elle aussi semble apprivoisée, elle accepte comme un phénomène naturel les passages de ce visiteur qui apparaît et disparaît." L'homme cobaye longuement plongé dans son image mentale ("maintenant le tir est parfaitement ajusté"), mais aussi le couple visitant, en abyme, sont désormais dans une disposition propice à l'adhésion sensible à une configuration spatio-temporelle détachée des conditions du réel (les modalités de cette "disjonction" conditionnant l'immersion seront analysées plus loin), qui passe par une adhésion avant tout visuelle: la succession des plans évoquée plus haut le confirme, en offrant une réflexion sur la nature des échanges et des projections du regard, sur la dialectique des rapports entre les images et entre les dispositifs (incluant également le diorama). Si la bande sonore aide à cette immersion, c'est le contact distancié avec un oiseau derrière une vitre, après un plan sur un envol, qui ramène à la salle d'expérience. Sitôt l'oiseau cloué sur son perchoir derrière la vitre, l'énergie migratoire des images a pris fin.

LE COMBLE DE LA REPRÉSENTATION

"Projeté sur l'instant choisi, il peut y demeurer et s'y mouvoir sans peine¹⁴." Cette phrase issue du commentaire de *La Jetée* ouvre la séquence de la visite au Muséum—où les personnages évolueront, on le sait, au beau milieu des dioramas. On se souvient que le héros du film est soumis à des expériences visant à propulser dans le temps des prisonniers "établis dans le réseau des souterrains de Chaillot", après qu'une guerre atomique ait rendu inhabitable la plus grande partie de la surface de la terre. Associé à la visite muséale, le voyage dans le temps constitue la forme (à peine) métaphorique¹⁵ conférée par Marker à une expérience immersive dont le principe implique, en première approximation, de "couper le visiteur de son monde quotidien pour le plonger dans le sujet muséal" (Courvoiser et Jaquet 2010, 68)—le sujet est alors disjoint du réel de ses perceptions. Dans les expérimentations de la fiction aussi bien que dans l'expérience immersive, il s'agit, selon les termes du narrateur, "de s'arracher au temps présent" pour se "réveiller dans un autre temps". Soulignons que les voyages du héros de *La Jetée*—dont la destination varie: là, un musée "plein de bêtes éternelles", plus tard, le monde pacifié de l'avenir et l'humanité du futur—dépendent d'injections réalisées par un inquiétant "chef des travaux", d'une part, et de la fixation du personnage central sur des images mentales "très fortes", d'autre part. Le voyage dans le temps prend alors l'allure d'un *trip*¹⁶ ayant trait à l'activité psychique et à une faculté imageante afférente à celle-ci, le film alléguant sans distinguer l'atelier du rêve et l'imagination créatrice: "capables d'imaginer ou de rêver un autre temps, [les sujets de l'expérience] seraient peut-être capables de s'y réintégrer". À cela s'ajoute le fait que ces expérimentations, au terme desquelles les cobayes risquent de devenir "morts, ou fous", supposent un sujet aveuglé—un bandeau est apposé sur son regard¹⁷—, et mené dans un espace au statut indéterminé dès lors que

l'homme "ne sait jamais s'il se dirige [...], s'il est dirigé, s'il invente ou s'il rêve".
De manière assez comparable,

L'immersion renvoie à une expérience envoûtante, de "forte" intensité, qui se caractérise par une augmentation de l'émotion et une diminution de la distance critique (Grau, 2003). Elle se traduit par une absorption mentale du sujet qui le conduit d'un état à un autre, avec le sentiment d'être dans "un temps et un lieu particuliers" (Bitgood, 1990). L'expérience d'immersion est intimement liée à un phénomène de capture, à un effet de suspension qui peut aller jusqu'à une perte momentanée de soi-même. Ces "symptômes" rejoignent ceux repérés dans l'expérience esthétique qui provoquent également chez le sujet une expérience de "flux", de ravissement. (Belaën 2005, 93)

Il ne fait aucun doute que l'expérience immersive figurée et scénarisée par Marker excède la seule visite au Muséum: plusieurs voyages dans le temps se succèdent, en amont et en aval d'un présent réduit au temps des expériences sur l'homme dont l'histoire nous est racontée. Lors d'un voyage précédant de peu la découverte des dioramas et autres taxidermies sous verre—la vitre formant un *leitmotiv* dont on comprendra plus loin la raison—, le héros de *La Jetée* flâne aux abords du Muséum, dans le Jardin des Plantes, en compagnie de cette femme qui réside dans le passé et vers laquelle il ne cesse d'être relancé. Ensemble, l'homme et la femme effectuent "une infinité de promenades semblables [...] *Jusqu'au moment où il sent, devant eux, une barrière*". Interposée entre le film et le spectateur, la barrière en question prend l'aspect d'une paroi invisible révélée, si l'on peut dire, par des taches noires (autant de branchages

Fig. 3
Photogramme de *La Jetée*
(Chris Marker, 1962).





commués en ombres floues flottant dans le plan), qui se détachent en avant des personnages photographiés de face—accusant, en somme, la transparence de la cloison en l’annulant partiellement [Fig. 3]. Cette paroi qui signe la fin de la visite dans les jardins du Muséum—et, selon nous, de l’expérience immersive figurée par le voyage dans le temps—s’avère fondamentale. Outre qu’elle marque la séparation entre les divers espaces-temps du récit [Fig. 4], la cloison transparente peut incarner la séparation, autrement primordiale, qui opère entre l’espace de la représentation et celui du spectateur¹⁸: le quatrième mur. C’est notamment à cet endroit que le film entreprend de penser (et non pas seulement de figurer et de fictionner) l’immersion: en la confrontant à la représentation, et à une position de sujet historiquement instituée par celle-ci.

Bien avant Diderot, dès la Renaissance et les ambitions composées par la perspective linéaire, une paroi transparente, plus ou moins théorique, structure en effet la relation entre l’objet et le sujet de la représentation. Un tel rouage a pu prendre plusieurs formes. Considérant le bouleversement opéré par la “véritable vision perspective”, Panofsky émet, au cours des années 1930-40, l’hypothèse d’un “plan transparent” ajustant imaginativement la relation entre le tableau et son spectateur—soit, en substance, un déni du support de la représentation favorisant la plongée du regard dans le monde représenté (et son illusion de profondeur)¹⁹. Louis Marin le résume de la sorte: “C’est l’invisibilité de la surface-support qui est la condition de possibilité de la visibilité du monde représenté” (Marin 1994, 305). Fiction théorique, le plan transparent de Panofsky est un ressort primordial de ce que l’on ne qualifiait pas expressément d’immersion. Il faut stipuler que la fable de l’historien d’art

Fig. 4
Photogramme de *La Jetée*
(Chris Marker, 1962).

n'implique pas seulement le déni du médium, mais encore l'invention d'une transparence incarnant symboliquement ce déni.

D'autres parois transparentes scandent l'histoire des arts et des dispositifs, interposées entre le sujet et le monde de la représentation comme autant de rouages réglant distinctement leur relation²⁰. Ainsi la vitre du diorama, qui sert l'institution de chaque chose située derrière la paroi de verre en objet de représentation, tout en accusant la différence entre l'espace-temps du microcosme reconstitué et celui du sujet qui campe de l'autre côté de la vitre.

Outre la cage en verre du Muséum, il faut pour lors (re)convoquer le quatrième mur érigé par le classicisme cinématographique, cette autre cloison invisible qui, à l'instar de la vitre du diorama, délimite les espaces respectifs de la représentation et du spectateur, et façonne leur articulation. Imaginaire, un tel mur est susceptible de se matérialiser (par le regard d'un personnage que le spectateur prend "pour lui" avant de se rendre compte qu'il est adressé à un autre personnage sis en contre-champ), manière de rendre sensible la paroi transparente en laquelle il consiste. Le cas échéant, l'adhésion du spectateur à la fiction se trouve remise en question.

Autant qu'un rappel du quatrième mur—et un moment où la représentation, brisant la fiction, s'affirme comme telle—, la paroi transparente de *La Jetée* est une élaboration figurative qui reprend, déplace et accuse le jeu de la vitre du diorama, dès lors qu'elle forme à la fois un seuil temporel où s'effectue le partage entre des espaces-temps distincts, et un seuil perceptif où le regard se définit comme traversée (sauf à sentir, devant lui, une barrière...). En tout état de cause, *La Jetée* compose une fable esthétique singulière: l'immersion du personnage est déjouée au moment même où la représentation se donne pour ce qu'elle est au spectateur de la fiction.

On admettra, en fin de compte, que la relation esthétique entre le sujet et l'objet de la représentation s'est historiquement édifiée selon le principe de ces parois transparentes sur lesquelles *La Jetée* attire notre attention—qu'elles structurent l'espace de la représentation ou traduisent l'effacement du médium²¹ auquel est appendue l'immersion du sujet dans le monde de l'*istoria*. Quand bien même les jeux et les enjeux de ces transparences, tantôt abstraites tantôt concrètes, ne se laissent pas amalgamer, dans la théorie panofskienne comme dans la théorie du cinéma ou le dispositif du diorama, la paroi transparente est une médiatrice qui articule la relation du sujet et de la représentation, déterminant son adhésion (tableau) ou son identification (cinéma) à celle-ci.

Si la vitre transparente forme ainsi la condition première d'une représentation dont elle garantit le jeu dialectique—entre "transparence transitive" et "opacité réflexive", pour reprendre Louis Marin (1994)—, il faudrait en suivre le destin (les mutations) dans les architectures immersives contemporaines. Pour notre part, nous suggérerons ceci: loin de former un paradigme distinct, l'immersion contemporaine constitue sans doute une intensification—jusqu'à l'excès: un comble—de l'adhésion programmée dès l'origine par la représentation. À quoi s'ajoute ceci: jusqu'à quel point ce comble permet-il le maintien de la dialectique qui, selon Marin, définit la représentation?

ORLYRAMA: FÉTICHISME ET NARCISSISME DU SUJET DE L'IMMERSION

La Jetée, film-tombeau, s'achève sur l'image d'un homme gisant, face retournée contre les dalles de béton des terrasses de l'aéroport d'Orly [Fig. 5]. Quelques secondes plus tôt, le commentaire annonçait que cet homme "n'attendait plus que d'être liquidé, avec quelque part en lui, le souvenir d'un temps deux fois vécu". Avant cette ultime chute, l'homme—"marqué par une image d'enfance"—revient à elles une dernière fois (elles: l'image, la jetée, la jeune femme qui l'attend, tout cela à la fois) et "pense que l'enfant qu'il avait été devait se trouver là aussi, à regarder les avions". Au début des années 1960, les promeneurs du dimanche se pressent, comme lui mais le plus souvent en famille, à Orly [Fig. 6 et Fig. 7]. L'aérogare inaugurée par Charles de Gaulle en février 1961 est l'un des tout premiers emblèmes français de la modernité architecturale (Damm 2017). Orly est une attraction, un spectacle où l'on vient admirer les Caravelles, les Alouettes, les Mirages et les Boeing, dans un vacarme étourdissant mêlé aux voluptueuses "voix d'Orly" (comme celle que nous entendons au début de *La Jetée*) égrenant les noms de destinations exotiques. Plusieurs millions de visiteurs s'y rendent chaque année. Le site est alors plus fréquenté que la Tour Eiffel et figure dans l'Officiel des Spectacles²². C'est une véritable attraction à ciel ouvert, une féerie propre aux Trente Glorieuses, multisensorielle et déjà puissamment immersive.

Le promeneur d'Orly se tient sur une plateforme depuis laquelle, parmi la foule, agrippé à la rampe, il contemple à perte de vue le ballet des avions à

Fig. 5
Photogramme de *La Jetée*
(Chris Marker, 1962).



Fig. 6-7
Photogramme de *La Jetée*
(Chris Marker, 1962).



réaction, sur le tarmac et dans les airs ("le décor planté au bout de la jetée", dit le commentaire). Or c'est depuis un semblable promontoire que, sous un éclairage zénithal, les spectateurs des panoramas du XIX^e siècle—dont on se souvient assurément depuis la terrasse panoramique du terminal sud d'Orly et qui préfigurent également le dispositif cinématographique, formant sans conteste un prélude aux expériences immersives contemporaines (Grau 2003, 52-122)—admiraient des toiles cylindriques, fixées contre les murs d'une rotonde et déroulant en trompe-l'œil les champs de bataille des campagnes napoléoniennes et de la guerre franco-prussienne [Fig. 8 et Fig. 9]²³. Au sol, sur un faux-terrain destiné à dissimuler les limites de la toile peinte et à augmenter l'illusion, étaient souvent disposés des objets réels et des mannequins en papier mâché. Au Panorama de la Bataille de Waterloo de Braine-l'Alleud, on aperçoit ainsi les corps gisant de soldats, face retournée contre le sol, comme le protagoniste de *La Jetée*.

Au début du film, après nous avoir introduit une première fois au milieu de

la foule sur la terrasse d'Orly, *La Jetée* fait défiler des images d'après-guerre: "quelques temps après, vint la destruction de Paris" [Fig. 10]. Paris, mais aussi Dresde ou encore les villes détruites sous les bombardements au Japon. L'homme de *La Jetée* est lui aussi un soldat (un partisan, un résistant?²⁴), un rescapé de la Troisième Guerre mondiale. C'est même, littéralement, un prisonnier de guerre "soumis à des expériences". L'espace (en surface) est fermé aux survivants et, dans ce monde dévasté, la seule liaison possible avec les moyens de survie passe désormais par le temps. On l'a noté, l'homme est choisi entre mille pour sa fixation sur une image du passé. À mesure que des "vague[s] de temps le soulève[nt]", les images "se mêlent dans un musée qui est peut-être celui de sa mémoire". Le voilà une première fois "dédoublé", ici et ailleurs: son corps est aux mains de l'ennemi, captif des souterrains de Chaillot et plongé dans un sommeil hypnotique; parallèlement, l'homme est projeté dans le temps d'avant-guerre, "sur l'instant choisi, [où] il peut demeurer

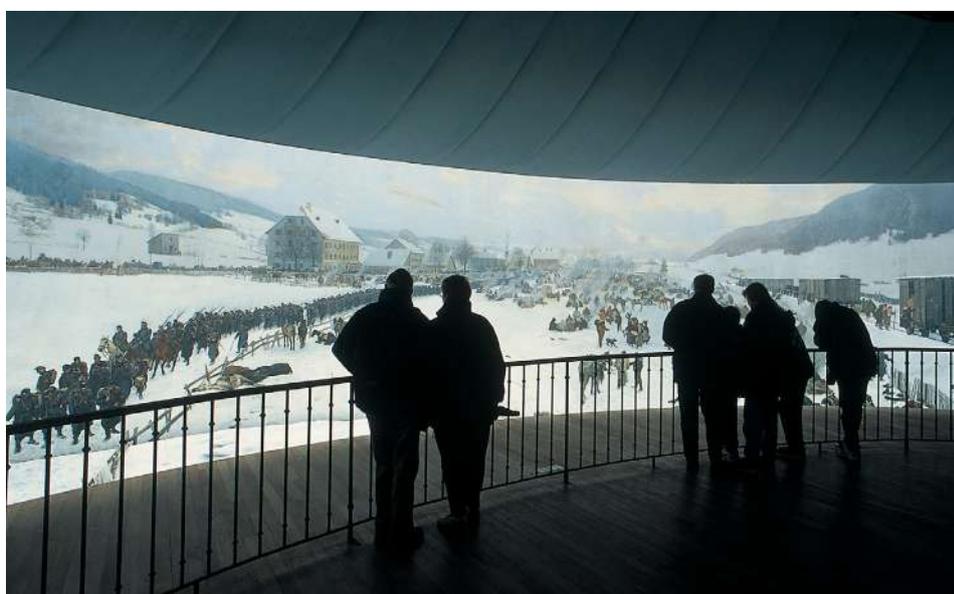


Fig. 8
Edouard Castres,
Panorama Bourbaki
(1881) à Lucerne (Suisse).



Fig. 9
Louis Jules Dumoulin,
Panorama de la bataille de Waterloo (1911) à Braine-l'Alleud.

Fig. 10
Photogramme de *La
Jetée*.



et [se] mouvoir sans peine". Aussi le "temps deux fois vécu" par cet homme, nous apparaît-il ici littéralement comme un temps "circulaire" au sens où l'était celui des panoramas. Il n'était pas rare en effet, sur les toiles cylindriques des panoramas, de représenter dans la continuité deux temps distincts, agençant par exemple le moment de la bataille faisant rage et, quelques mètres plus loin, celui de la déroute de l'ennemi. À la faveur d'un semblable paradoxe temporel, à quelques mètres du corps de l'homme qui gît sur la terrasse d'Orly, se tient ainsi l'enfant qu'il fut, comme devant un miroir paradoxal, tout à la fois acteur et témoin, par anticipation, de sa fin ("Plus tard, il comprit qu'il avait vu la mort d'un homme").

Dans un texte intitulé "En sortant du cinéma" (1975), Roland Barthes après avoir considéré les vertus hypnotiques du dispositif cinématographique et le noir de la salle comme "substance de la rêverie" où "gît la fascination du film", se demande dans quelle mesure le spectateur de cinéma pourrait se laisser fasciner par deux fois:

Comme s'[il] avai[t] deux corps en même temps: un corps narcissique qui regarde, perdu dans le miroir proche, et un corps pervers prêt à fétichiser, non pas l'image, mais précisément ce qui l'excède: le grain du son, la salle, le noir, la masse obscure des autres corps, les rais de la lumière, l'entrée, la sortie.

Quand le leurre est parfait, le "tir parfaitement ajusté" et l'immersion prégnante, "je suis enfermé avec l'image—écrit Roland Barthes—comme si j'étais pris dans la relation duelle qui fonde l'Imaginaire" (au sens psychanalytique). Cette relation spéculaire ou fusionnelle, qui ignore la ségrégation entre l'espace du spectateur et l'espace du spectacle, c'est celle qui identifie strictement le combattant engourdi (*Nárkissos*, en grec ancien, dérive de *narkê* et renvoie au sommeil) et le visiteur fasciné du Jardin des Plantes ou du Muséum

d'histoire naturelle, mais aussi l'homme et l'enfant de la jetée d'Orly. Ce rapport "narcissique" fait image, à l'écran, de celui que nous entretenons avec le film et son dispositif:

Dans la salle de cinéma, si loin que je sois placé, je colle mon nez, jusqu'à l'écraser, au miroir de l'écran, à cet "autre" imaginaire à qui je m'identifie narcissiquement (on dit que les spectateurs qui choisissent de se placer le plus près possible de l'écran sont les enfants et les cinéphiles): l'image me captive, me capture: je colle à la représentation, et c'est cette colle qui fonde la naturalité (la pseudo-nature) de la scène filmée.

Et pourtant, suggère Roland Barthes, le spectateur de cinéma "décolle du miroir", ("au sens aéronautique et drogué du terme", précise-t-il, par une coïncidence qui noue fort étroitement son propos à notre objet d'étude). Si le dispositif cinématographique n'est pas seulement immersif, c'est en effet que cette relation fusionnelle et narcissique est compliquée d'une situation matérielle non substitutive, mais fétichiste. Dit autrement, il y a une scène ou un site de l'immersion (une jetée?):

Pour distancer, "décoller", je complique une "relation" par une "situation". Ce dont je me sers pour prendre mes distances à l'égard de l'image, voilà, en fin de compte, ce qui me fascine: je suis hypnotisé par une distance; et cette distance n'est pas critique (intellectuelle); c'est, si l'on peut dire, une distance amoureuse.

Ainsi le spectateur du cinéma brillerait-il de tout son désir, paradoxalement "hypnotisé par une distance", corps dédoublé comme celui de l'homme de la jetée d'Orly, fasciné par une image à laquelle il adhère, mais rappelé simultanément à ses entours, traversé par un clivage fondamental qui fait de lui un corps narcissique doublé d'un corps fétichiste²⁵.

Enfant, Chris Marker a intimement éprouvé ce clivage. En possession d'une petite visionneuse portable, il s'étonne:

Ce bidule aujourd'hui oublié s'appelait Pathéorama [...]. Alors que je ne pouvais même pas imaginer avoir quoi que ce soit en commun avec l'art de filmer (dont les principes de base étaient naturellement bien au-delà de ma compréhension), voilà que quelque chose du film lui-même était à ma portée, un morceau de celluloïd pas tellement différent de la pellicule des négatifs photos quand ils revenaient du laboratoire. Quelque chose que je pouvais sentir et toucher, quelque chose du monde réel [...]. Ainsi, avec des ciseaux, de la colle et du papier cristal, je confectionnai une copie fidèle de la vraie bobine Pathéorama. Après quoi, cadre par cadre, je commençai à dessiner une suite de poses de mon chat (qui d'autre?) en insérant quelques cartons de commentaire. Et d'un seul coup, le chat se mettait à appartenir au même univers que les personnages de Ben Hur ou de Napoléon. J'étais passé de l'autre côté du miroir [...]. Trente ans passèrent. Puis je réalisai La Jetée. (Marker 2003b)

Fétichisme de l'appareil que l'on peut sentir ou toucher et narcissisme du miroir de l'autre côté duquel passe l'enfant, fasciné. Panorama, pathéorama, cinéma installent le sujet—"hypnotisé par une distance" et dont la psyché ainsi se "dédoublent"—entre ici (l'enfance, le "bidule") et ailleurs (le soldat, "l'univers [...] de Ben Hur ou de Napoléon"). À l'équilibre? La condition immersive, dans le prolongement de la condition spectatorielle, expose assurément son sujet à de singuliers équilibres psychiques en redistribuant la part du fétichisme et du narcissisme. À moins qu'il ne s'agisse en définitive de basculer, suivant la pente qui entraîne le héros de *La Jetée* dans sa chute [Fig. 11].

CONCLUSION

Que retenir de ce premier mouvement—ou coup de sonde—d'une archéologie assurément inachevable? Si la condition immersive, telle que Marker la met en scène et la figure au début des années 1960, implique bien le triple jeu de la mémoire, de la relation esthétique, et de l'activité psychique—interactions comprises—, l'analyse a permis de préciser à quoi tient son sujet, c'est-à-dire, à quoi la fiction permet de le rapporter. En l'occurrence, la condition immersive s'est vue rattacher respectivement: au musée imaginaire et à la mémoire comme faculté d'association, de reconstitution, de revitalisation de l'enfoui; au dessein illusionniste qui est au fondement de la représentation depuis plus de six siècles, en particulier, à l'architecture d'un leurre puissant mais toujours susceptible d'être battu en brèche par le dispositif matériel qui l'orchestre et, parfois, reprend ses droits; enfin, au clivage d'un corps simultanément narcissique et fétichiste: capable d'adhérer à l'image puis de s'en décoller, en un jeu d'identification et de déprise dont le dispositif cinématographique a pu constituer l'emblème.



Fig. 11
Photogramme de *La Jetée*
(Chris Marker, 1962).

Notes

¹ Selon le *Dictionnaire de l'image* (Paris: Vuibert, 2006, 194): "Certains dispositifs (écrans larges, *sensurround*—bruit infra sonore émis à puissance élevée inauguré en 1974 dans *Tremblement de terre* de Mark Robson—, relief, son stéréophonique [...]) favorisent la captation sensorielle du spectateur et, peut-être, les phénomènes d'identification et de 'croyance' (Schaeffer, 1999)". Pour ce qui est de la "muséographie d'immersion": "La dénomination [...] est relativement récente, même si les premières réalisations qui peuvent être qualifiées 'd'immersives' datent de l'Antiquité (Grau, 2003). En effet, au moyen d'un système de fresques qui englobait physiquement le visiteur en jouant par un travail de perspective avec son regard, les salles de la Villa dei Misteri de Pompéi répondaient déjà à une logique de 'captiver' celui qui les pénètre." (Cf. Belaën, 2005, 92-93). Andrea Pinotti a proposé une réflexion dense sur les images immersives, dont l'absence de cadre et de référentialité, ainsi que l'effacement de toute médiation fondent selon lui un régime d'image an-iconique (Pinotti 2020).

² Sur les formes et enjeux de telles déambulations cf. Terrin 2008.

³ Sur ce régime identificatoire, voir Metz 1993, 61-81.

⁴ Laquelle constitue en revanche l'un des aspects du projet d'Andrea Pinotti (Pinotti 2020) qui évoque dans cette optique divers appareils stéréoscopiques, dont le *KaiserPanorama*. Précisons que si l'archéologie des médias peut prendre diverses formes, et par conséquent, ne se laisse pas réduire à la seule généalogie des dispositifs, elle se fonde la plupart du temps sur d'autres objets que des fictions. Sur les différentes «branches» de l'archéologie des médias, voir Strauven 2013.

⁵ Autrement dit, elle embrasse toutes les dimensions de ce que la phénoménologie nomme «vie intentionnelle». Perceptions internes et externes correspondent à des modes de spécification des états de consciences—perception, imagination, rêve, souvenir, etc...—que les travaux d'Edmund Husserl considèrent conjointement. La démarche du phénoménologue repose en effet sur un préalable exigeant que le sujet de l'expérience s'abstienne de porter un jugement sur l'existence ou l'inexistence des "objets intentionnels" (ou "cogitatum") qu'il vise. Ceux-ci peuvent ainsi relever—comme c'est notamment le cas des objets intentionnels qui apparaissent au sujet de l'immersion—de ce qu'il nomme "quasi-expérience" ("*Erfahrung als ob*"). Voir Husserl 2001.

⁶ "Il y a des archéologies purement descriptives qui n'exigent pas cette opération toute particulière qu'est l'extraction de l'objet." (Schnapp 2020, 20).

⁷ C'est ainsi que Chris Marker nomme son film, quand l'album photographique qui en est issu se présente sous l'intitulé de "ciné-roman" (Marker 1992). Précisons qu'un tel choix d'objet n'ignore pas par ailleurs la relation entretenue ultérieurement par l'auteur avec la réalité virtuelle (de *Level Five* 1996 à *L'Ouvroir* sur *Second Life*, 2008).

⁸ Voir sa jeune passion pour le Pathéorama qu'il place aux sources de sa réflexion: Chris Marker, "C'était un drôle d'objet", texte paru dans le livret du DVD *La Jetée – Sans Soleil*, 2003.

⁹ Ce "feuilletage" répond en un sens à celui du visiteur de musée devant la collection d'images exposées, passant en revue les œuvres extraites et arrachées à leur contexte originel, rassemblées et projetées dans un monde nouveau.

¹⁰ Le motif de l'oiseau, récurrent dans *La Jetée*, plane parfois en filigrane dans d'autres formes. Dubois y voit une forme migratoire qui joue des va-et-vient de l'entre-image. C'est en effet un véhicule visuel idoine cf. Dubois 2002, 37.

¹¹ Chris Marker préfère cette expression à "clignement" (Lettre à Jean-Luc Alpigiano du 3 janvier 1997: <http://www.chrismarker.ch/courts-metrages-de-chris-marker.html#2dbDpm6H>).

¹² Il l'insère en planche 4 de son *Atlas Mnemosyne*, quoique le montage ne dévoile pas directement les résurgences: <https://warburg.sas.ac.uk/archive/bilderatlas-mnemosyne/final-version>. Pour un rapprochement des démarches de Marker et Warburg sur un autre corpus, voir Laborde 2009.

¹³ André Malraux rappelle: "Picasso savait qu'il n'y était pas question du musée des préférences de chacun, mais d'un musée dont les œuvres semblent nous choisir, plus que nous ne les choisissons. Le Musée imaginaire, qui ne peut exister que dans notre mémoire, n'est pas non plus un Louvre développé. [...] Les dieux et les saints sont devenus des statues; la métamorphose est l'âme du Musée imaginaire." (*La Tête d'obsidienne*, Paris, 1974).

¹⁴ Toutes les citations du commentaire du film sont tirées de l'ouvrage *La Jetée ciné-roman* (Marker 1992) non paginé. C'est nous qui soulignons.

¹⁵ *À peine*: sur la base d'expériences immersives initiées dans des musées de sciences, Florence Belaën conclut: "La visite prend pour certains les allures d'un voyage dans le temps" (Belaën 2005, 103).

¹⁶ À diverses reprises, le film donne à entendre l'accélération du rythme cardiaque du héros.

¹⁷ Ce bandeau semble une forme anticipée du casque porté par le visiteur de certaines expositions immersives: en effet, bandeau ou casque président à la séparation du sujet du monde de ses perceptions actuelles, condition impérative pour accéder à cet autre monde que l'on pourrait dire de ses perceptions virtuelles.

¹⁸ Deux types de cloisons semi-transparentes se manifestent dans le film, chacune marquant une délimitation spatio-temporelle. La première, celle du Jardin des plantes, forme une frontière entre le passé et le présent, quand la seconde, liée aux retrouvailles du héros avec l'humanité future, signe la séparation entre le présent et l'avenir [ainsi sur la Fig. 4]. Seule la première cloison matérialise le quatrième mur, la seconde étant rabattue à l'intérieur de l'espace diégétique.

¹⁹ Panofsky 1975. L'auteur spécifie: "nous parlerons donc de vision perspective quand, dans une œuvre d'art, la surface (c'est-à-dire ce qui sert de support à l'art pictural ou à l'art plastique et sur quoi l'artiste, peintre ou sculpteur, rapporte les formes des objets et des figures) est niée dans sa matérialité et qu'elle se voit réduite à n'être plus qu'un simple 'plan du tableau' sur lequel se projette un ensemble spatial perçu au travers de ce plan" (Panofsky 1975, 38).

²⁰ Ceci résume certains éléments développés dans le texte de Barbara Le Maître: "Fiction de dispositif. Notre ethnographie: *La Jetée* (Chris Marker, 1962) et le diorama" (Le Maître 2019).

²¹ La dématérialisation du support de la représentation est une donnée princeps du dispositif cinématographique, comme l'a magnifiquement écrit Jean Louis Schefer: "L'image filmée [...] n'a pas de support fixe: je la vois parce que quelque chose (un écran coupant un faisceau) l'empêche de disparaître; elle n'est cependant ni tout à fait sur la pellicule, ni définitivement sur l'écran, ni réellement dans les rayons que projette la lanterne: je suis aussi l'assurance d'une transition des images, je suis donc autre chose que leur spectateur" (Schefer 1980, 117).

²² En outre, les tournages s'y multiplient à l'époque, on se souviendra, notamment d'*À bout de souffle* (1960) de Jean-Luc Godard, de *L'homme de Rio* (1964) de Philippe de Broca, ou encore du film de Gilles Grangier, *Le cave se rebiffe* (1961).

²³ Avec les sujets topographiques (les vues d'ailleurs comme Le Caire ou le Congo) la guerre est le principal sujet des panoramas. On peut ainsi encore visiter le Panorama de la bataille de Waterloo (1911) à Braine-l'Alleud, dans la province du Brabant wallon ou le Panorama Bourbaki (1881) à Lucerne (Suisse).

²⁴ Peter Wollen rapproche l'image de l'homme qui s'effondre les bras en croix de la photographie de Robert Capa, "Mort d'un soldat républicain", qui montre un soldat tomber, en arrière, touché par une balle ennemie en 1936, pendant la Guerre d'Espagne, in Wollen 1984.

²⁵ Dans *Un souvenir d'enfance de Léonard de Vinci* (Freud 1987), Sigmund Freud ne parvient pas non plus à départager la part de narcissisme et de fétichisme à l'œuvre dans le "souvenir d'oiseau" du peintre.

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Transculturality of the Alps: The Role of Image and Sound in a European “Multiple *Bergfilm*” of the 1930s

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The discovery of the Alps in the specific genre of the mountain film was originally a German answer to the Westerns from the USA in the late 1920s. This brought a number of important personalities such as Fanck, Riefenstahl and Trenker onto the German film market, though the genre developed in different ways in other contexts, too. The mountain film *Der Sohn der weißen Berge / Les Chevaliers de la Montagne* by Trenker and Bonnard was coproduced as a German-French multiple version (MV) in 1930 and represents the beginning of a longer series of ‘multiple’ coproductions by Trenker. During the generalization of sound, MVs are meant to create the ‘same’ film for each country interested in it. In order to make the versions successful in their contexts, each of them is shaped according to early audio-visual techniques and adapting elements such as cast, fictional nationalities, music, dialogues or gestures. This article aims to approach the two MVs from a comparative, transcultural perspective in order to highlight their specificities. The aim is to investigate the transcultural character of the Alps arguing that, due to their semantic openness, the Alps provide an ideal setting for transcultural communication and for the nationalization process essential to the MVs. As a territory at the crossroad of several countries and cultures, the Alpine environment proves through *Der Sohn der weißen Berge / Les Chevaliers de la Montagne* to be a privileged territory for multiplecinematic cultural transfers that contribute to the establishment of European cinema.

Keywords
Mountain films
Multiple Versions
Luis Trenker
Transculturality
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INTRODUCTION

The discovery of the Alps in the specific genre of mountain film is generally considered a German cinematic answer to the U.S. Western in the 1920s (Stern 2001) which famously produced several important protagonists of the German-language film market, such as Arnold Fanck, Leni Riefenstahl, and Luis Trenker. As the geographical centre of Western Europe, the Alps are par excellence charged with various meanings and functions in Western modern imagination. The numerous historical and natural philosophical conceptualizations of this landscape bear witness to this. The culturally charged semantics of the Alps, which have been rediscovered in mountain films since the first hours of cinematography, range from the imagination of a natural recreational space (von Haller 2006; Rousseau 1978) to the sublime version of the mountains (Kant

1974) to the imagined experimental space of human experience (Felsch 2007).¹ Thus, even in Fanck's films, nature appears as the dominant actor in the form of untouched mountains, terrifying storms, or avalanches, with the camera serving as a mediator of the seemingly unmediated, spectacular experience in the Alps.

Fanck's mountain films made the Alps accessible to a mass audience at the beginning of the 20th century, while the popularization of this 'unspoiled' landscape contributed to its very destruction.² The media penetration of the Alps in early mountain films was finally able to tie in with the audience's direct experience of this landscape, since alpinism had developed into a mass phenomenon since the beginning of the 20th century. And just as the popularity of alpine sports soared in Europe and North America in the 1920s and 1930s, so too would mountain film, as a medium conducive to alpine tourism, become a multinational, popular phenomenon very early in the history of European cinema. A closer look at the early film history of this genre reveals that mountain film productions are by no means limited to the German film market or as the German answer to the U.S. Western.

With the emergence of multiple versions (MVs)³ in the transitional phase from silent film to sound film, a viable, transnational as well as transcultural cinematic subject was recognized in the multinational projection space as well as sporting-real experience world of the Alps, which was to contribute to the establishment of European cinema. MVs had emerged in the highly innovative phase of sound film generalization in the early 1930s as part of most national film industry's internationalization strategy. Today dubbing seems to be a natural practice for exploiting films internationally. But at least until 1933, dubbing was far from accepted or widespread, and MVs played a central role in film production in the early 1930s. In the European context they were mostly coproduced for the French, German, English and Italian film markets, with transnationally successful titles such as *Der blaue Engel* (Josef von Sternberg 1930, D/E) or *Der Kongreß tanzt* (Eric Charell 1931, D/F/E) (Garncarz 2013).

MVs aimed to produce a 'same' film for each country interested in the production, using different cultural adaptation strategies and techniques depending on the case. In order to make the versions successful in their respective contexts, each version was designed to adapt elements such as cast, fictional nationalities, music, dialogue, and gestures, in a process that also incorporated strongly national production aspects such as (trans)cultural identifications.⁴ Each MV thus resulted in a product that could be considered a single film or several different ones. In this sense, we tend to stick to the idea that there is no truly original version or MV of the same title. Each MV is at the same time an independent film as well as interdependent from the other versions of the same title.

In this article we would like to take a closer look at the 1930 German-French coproduced MV *Der Sohn der weißen Berge/Les Chevaliers de la Montagne*⁵ by Luis Trenker and Mario Bonnard. By comparing the two versions we aim to show that the Alps as a transcultural carrier of meaning as well as a transnational, sportive space of experience also gained an important status in the European

cinema of the 1930s through the MVs. Our main argument is that mountain films were predestined for internationalization, if not Europeanization through MVs. Indeed, due to their multinational character, the Alps offer the ideal setting for transcultural communication as well as for the nationalization processes necessary for MVs. A process which appears to be enclosed in the title of the two versions already. Their difference in both content and graphic testifies of the efforts and cultural adaptation processes through which *Der Sohn/Les Chevaliers* went [Figg. 1 - 2]. In this sense, the MVs directly contribute to the progressive internationalization and popularization of Alpine landscapes and narratives, which corresponded to a longer cultural imagination in Western cultural history.

The setting of our case study, *Der Sohn/Les Chevalier*, is the ski resort of Zermatt on the Matterhorn, which lies at the border between Swiss and Italian territory. This is why the alternative title of the film, sometimes used as a subtitle, is *Das Geheimnis von Zermatt*. The film takes place during an international ski championship. Next to being a sport film, though, it also negotiates a love and crime story, with a mountain and ski guide as the main character, interpreted by Luis Trenker and named Turri in *Der Sohn* and Charlier in *Les Chevaliers*. When Turri/Charlier meets a young Parisian woman, Mary, he too gets into troubles and ends up being suspected of murder. But the film's hero is

Fig. 1
Ending of the first
sequence of *SwB* (links)
and *CdM* (right).

Fig. 2
Beginning of *SwB*
and *CdM*.



determined to uncover the trap he had fallen into and help his teammates win the championship...

Although this film by Trenker and Bonnard is an important case study both for the early audiovisual translation strategy of MVs and for the transcultural significance of the Alps for a rapprochement of European cinema in the 1930s, a scholarly examination (as well as other MVs of this genre) has been lacking to date. In order to highlight the (trans)cultural specificities of this French-German coproduction, we will analyse the visual, textual and musical levels separately and comparatively. As we will show, on the one hand, the interpretation of the joint script cannot be separated from the national and cultural contexts in which the films were seen; on the other hand, the alpine environment proves to be a privileged territory for a multifaceted cinematic cultural transfer.

MVs have so far been studied mainly in terms of the linguistic aspects and the visual components of the films. However, our case study allows us to pay special attention to the soundtrack in the different film versions, which in MVs constitutes a particularly important element in (trans)cultural translation.⁶ Thanks to the availability of both copies of the French and German versions of Trenker and Bonnard in the Mountain Museum of Turin, our comparative audiovisual analysis is possible, which is a rare case in the history of MVs.⁷

In addition to a French and German film version, an Italian edition of the film circulated, with the French version as its visual basis. At that time, the Italian film industry was probably still too young to compete in the market and could probably not afford a national MV. Since we could not find the Italian film version, we include it only marginally in our comparative analysis on the basis of a few archival materials we could find about it.

Before we compare the visual, textual, and musical aspects of the two film versions to better highlight their variations and implications, we briefly contextualize mountain films and specifically *Der Sohn/Les Chevaliers* in relation to the MVs.

MOUNTAIN FILMS AND *DER SOHN DER WEISSEN BERGE/LÉS CHEVALIERS DE LA MONTAGNE* IN RELATION TO MVs

Mountain films set in different mountainous regions of the world have existed since the dawn of cinema. The publication *Cinema delle Montagne* of the Mountain Museum in Turin, which lists nearly 4,000 feature films in the history of mountain cinema, largely testifies to the history of this genre (Audisio 2004; Mantovani 2020). Generally acknowledged as the first preserved mountain film to feature the Alps as its setting, *Cervino* is an Italian film production from 1902, which in six minutes deals with the ascent of three mountaineers and a cameraman to the top of the Matterhorn.

The process of 'gentrification', by which Rick Altman (1999) refers to the

procedural and dynamic nature of a film genre, seemed to have arguably contributed to asynchronous developments of the mountain film genre in the respective countries. While *Der Sohn* had long been recognized and marketed as a mountain film in Germany in 1930, *Les Chevaliers*, on the other hand, faced a different genre development in France, where the film was promoted as a sport film in view of the skiing subject. Its reception as a sports film emerges, for example, in *Le Cinéopse* on the occasion of the film's premiere ("Chez Vandal", 1930).

The early mountain films of German production, which emerged from the genre of documentary sports and nature films of the 1910s and 1920s, are closely associated in with the geologist and photographer Arnold Fanck and the so-called Freiburg Camera School. Mountain films of that period of German film production has also been the most thoroughly studied to date, which may be related in part to its reception by well-known film critics and theorists (such as Siegfried Kracauer). For many decades, mountain films were characterized as a manifestation of a reactionary anti-modernism, 'similar to the back-to-the-land philosophy and health cults that characterized interwar Germany in the run-up to Hitler's takeover' (Bush 2019, 2).⁸ As Alex Bush correctly recognized, Kracauer's reading of the German mountains films of that historical period was not only politically motivated, but tied to a long tradition in German visual culture that understood the Alps as an 'absolute 'unhistorical' landscape'(Bush 2019, 2; Simmel 1919, 138) and created a canon beginning with the romantic paintings of Caspar David Friedrich. It was not until later readings that the 'romantic rhetoric of the Alps' (von Moltke 2002) in German mountain film was based on 'manifestations of modernity' (Haver 2005, 136).⁹ In the 1930s, German mountain film was shaped by Fanck's student Luis Trenker. Born in 1892 in South Tyrol, Trenker worked as a mountain guide in addition to being an architect. He first came across mountain film in 1923, when he was hired as an alpine consultant during the shooting of Arnold Fanck's film *Der Berg des Schicksals* (1924), and later as an actor.

National highlights of the mountain film genre in France, on the other hand, did not occur until the 1940s and 1950s with the films by director and professional alpinist Marcel Ichac. In reaction to the German approach to the genre, 'the French mountain film was to impose a new version freed from any pathos and giving its place to the gesture and the pure relationship of man to the mountain' (Fenoli 2009, 3). Before that, mountain films from Germany were shown in France. Although he then distanced himself from the German conception of mountain films, Ichac had surely seen most of them, including *Les Chevaliers* (Ichac 1960, 12-13).

In Italian cinema, as mentioned at the beginning, mountains played a central role very early on, in the 1910s mainly with directors such as Giovanni Vitrotti and Mario Piacenza. Piacenza, who was also a professional alpinist like many directors of this genre, once again filmed the ascent of the Matterhorn with *Ascensione al Cervino* (1911) – this time the cinematic event lasts 14 minutes. The Alps were also to become a setting in an episode of the *Maciste* (1915–

1926) series. In *Maciste alpino* (Maggi-Borgnetto, 1916), the Italian film hero, Bartolomeo Pargano, with his masculinist, heroic character roles may have later found a continuation in the figure of Trenker (Schrader and Winkler 2018).

In the history of MVs *Der Sohn/Les Chevaliers* is a special case. For one thing, this German-French coproduction was the first of a series of MVs of the mountain film genre 'made by Trenker'. It was followed by *Berge in Flammen* (1931, D/F/E), *Der Rebell* (1932, D/E), *Condottieri* (1937, D/I) and *Der Berg ruft* (1938, D/E) (Haque 2013).¹⁰ These 'multiple *Bergfilme*' or 'multiple mountain films' have received little attention from film scholars despite their quantitative and qualitative relevance to European cinema in the 1930s, which we wish to highlight here.

In research on the mountain film genre, this is probably due to the tendency to focus on Trenker's German titles, since for the cultural history of the Alps in German-speaking countries, the South Tyrolean 'mountain legend' even has a mythical function.

As for the MVs, the lack of attention in academic literature could be attributed to the fact that none of these titles were produced by UFA, that is, that major German film production company of the time. Film history itself also lacks the connection between MVs and mountain films. For example, although Siegfried Krakauer's proto-fascist reading of Trenker's films is well known, Krakauer (2017) never mentions its MVs. Even in the chapter Corinna Müller (2003, 339 – 350) devotes to *Der Sohn*, specifically exploring how revolutionary its dubbing technique was for the early 1930s, there is no mention of *Les Chevaliers*.

REGIONAL, NATIONAL, EUROPEAN IDENTITIES (AND WHERE TO FIND THEM)

Der Sohn/Les Chevaliers fosters the establishment of the career of Trenker as a sound film professional; together with him, also Renate Müller and Mary Glory have been positively favoured by their roles in the two MVs. The case of Glory is particularly striking, for Trenker was not that famous in France in 1930 and therefore she gets to emerge as the main star of *Les Chevaliers*. This is often highlighted in the press, for instance by Maurice Bessy in *Cinéma*, who says that *Les Chevaliers* is one of the films that established Glory among 'our first stars' (Bessy 1931), but is also evident in the graphic of the several film posters [Fig. 3 and 4], as well as in the film credits: Luis Trenker is always in the foreground of the German material, whereas the prominent star in the French material is definitely that of Mary Glory, and in film credits of *Les Chevaliers* the first mentioned is Glory, followed by Trenker.

MVs often play on the adaptation of the nationalities on a double level: the nationalities of the cast involved in the film, and the nationalities of the fictional characters. In the case of *Der Sohn/Les Chevaliers*, a significant part of the cast remains unchanged. Luis Trenker as main character, a professional skier

Fig. 3 (next page)
Poster of *SwB* (1930),
provided by Museo
Nazionale della
Montagna di Torino.

**LUIS
TRENKER**

**DER
SOHN
DER
WEISSEN
BERGE**

› Das Geheimnis von Zermatt ‹

VERLEIH
DEUTSCHE FILM  COMMERZ GMBH

ÉDITION OMNIUM-CINÉ

JACQUES PATHÉ présente:

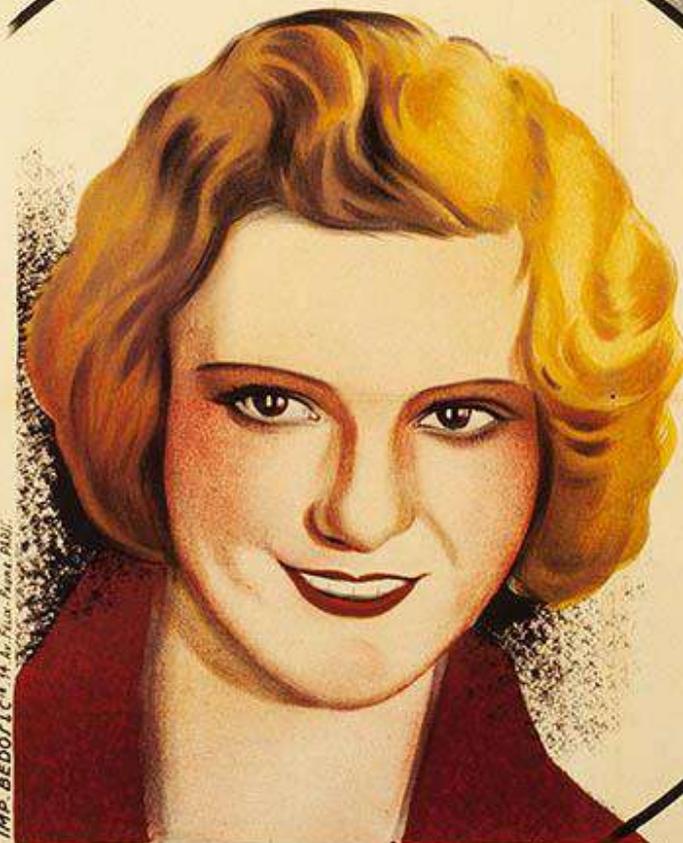
LES CHEVALIERS DE LA MONTAGNE

COMÉDIE
DRAMATIQUE
SPORTIVE

Une production MARCEL VANDAL, CHARLES DELAC,
JEAN DE MERLY & ITALIA FILM
Réalisation de MARIO BONNARD

Interprétée par

MARIE GLORY
LOUIS TRENKER
JIM GÉRALD
PIERRE MAGNIER



IMP. BÉDOT & Co. Au Puy-François 69001

LE VAUCLUSE

(Documentaire)

LA DEMOISELLE
DE LA RADIO

(Dessin Animé)

OMNIUM-MAGAZINE

(Revue documentaire)

	<i>Der Sohn der weißen Berge</i>	<i>Les chevaliers de la montagne</i>
Language	German	French
Director	Trenker, Bonnard	Bonnard, Trenker
Producers	Itala-Film	Vandal & Delac
Distributors	several all over DE	Gaumont-Franco Film-Aubert
Screenwriters	Trenker, Schmidkunz (book/story) Bonnard, Malasomma, (screenplay) Schulz (dialogue)	Trenker, Schmidkunz (book/story) Bonnard, Malasomma, (screenplay) Schulz (dialogue)
Actors / Characters	Luis Trenker (Hans Turri) Renate Müller (Mary Dulac) Maria Matray-Solveg (Anni) Michael von Newlinsky (Gregor Milacs) Karl Steiner (Koste) Emmerich Albert (Morel) Leo Peukert (father) Jim Gérald (desk clerk)	Luis Trenker (Georges Charlier) Mary Glory (Mary) Yvette Beschoff (Christine) Michael von Newlinsky (Ing. Milacs) Charles Steiner (Coste) Emmerich Albert (Sorel) Pierre Magnier (father) Jim Gérald (desk clerk)
Release	12 August 1930	07 November 1930
Composer	Giuseppe Becce	Giuseppe Becce
Lyrics	Heddy Knorr	Pol Varenge
Format	35mm, 1.20:1	1.33:1
Duration	64,04 min	57,56 min ³⁶
Locations	Matterhorn, Zermatt, Grindelboden	Matterhorn, Zermatt, Grindelboden

Fig. 4 (next page)
Poster of *CdM* (1930),
provided by Museo
Nazionale della
Montagna di Torino.

and mountain guide; Michael von Newlinsky as the antagonist, engineer Milacs; Karl Steiner and Emmerich Albert as friends and other team members of the German ski national team; Jim Gérald as desk clerk.

As shown in the table above, the names of all these characters have been changed in *Les Chevaliers* to better fit the French linguistic and cultural system, starting from the adaptation of 'Hans Turri' as 'Georges Charlier'. Also, this part of the cast that remains in both versions is exclusively Austrian or Austro-Hungarian, exception made for Gérald, who is the only French actor acting in both films – something that the French press did not hesitate to stress.

Then, two are the relevant characters played by different roles in the two versions, starting from the character of Mary, played by German Renate Müller and by French Mary Glory respectively. The same for the character of Anni/Christine who is the cousin of Turri/Charlier and has tender feelings for him; she is also played by a German actress in *Der Sohn* and a French one in *Les Chevaliers*.

Consequently, we have observed that all characters that change between the two versions are of German and French nationalities accordingly. But the core part of the cast is of Austrian origins, and while the 'foreign' stars change between *Der Sohn* and *Les Chevaliers*, the Austrian ones remains unchanged. This has an impact on the acting and presence on the screen, for the Austrian cast obviously acts very similarly and is dressed in the same way in the two versions, though the same cannot be said for the German and French actors. If we consider the *Doppelgänger* Müller and Glory, for instance, we observe a difference already in their clothes. Müller has a stronger impact, and her physical stature, her way of speaking and dressing mirrors a resolute, strong-willed style, while Glory has a more modest and delicate presence. The fact

Fig. 5
 In this scene, when the German/French team greets Mary and her father, only the dressing style of Müller (links) and Glory (right) variates.



Fig. 6
 In this scene with the two female characters of Mary and Anni/Christine, both dresses variate. Especially the fur that Müller wears (links) imposes itself visually during the scene.



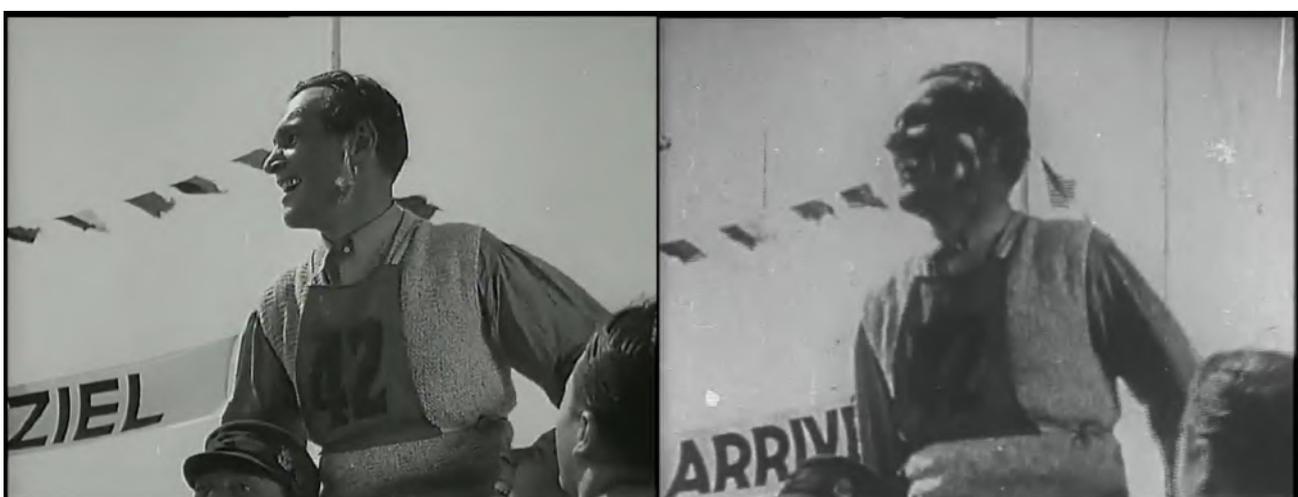
that the clothes used were so different could, in the context of MVs, testify to a detailed plan of cultural adaptation [Figg. 5-6].

Also, as we will see in a few lines, the production took care of details such as having two different banners advertising the finish line once in German 'Ziel' and once in French 'Arrivée' [Fig. 7].

As shown, the majority of the cast in both versions is of Austrian origins, and the fictional film character Turri has Austrian origins in the film, too, though Turri and his teammates run for the German ski national team in *Der Sohn* and for the French one in *Les Chevaliers*.

The trio gets to meet Mary at the beginning of the film, who immediately recognizes them as famous skiers and is thrilled to meet them: this shows how each version gives to its own national audience not only its own national star, but also its own fictional champions (French champions in *Les Chevaliers*

Fig. 7
 Detail of two different banners advertising the finish line. The shot is almost identical, but the banner is written in German in *SwB* (links) and in French in *CdM* (right).



and German ones in *Der Sohn*). Also, it is in this same scene that another important variation manifests. In the German version, Turri states that they run for Germany for the *Europa Meisterschaft in Skilaufen*, while Charlier, in the French version, says that they represent France for the *Championnat de ski*. In the French version, the general European background is not kept, as also confirmed by the analysis of the textual level of the films. After the aforementioned misadventures, and with the help of his ski-comrades, then, Turri/Charlier will finally succeed in making Germany win the race in *Der Sohn* – France in *Les Chevaliers*, spectacularly joining his teammates at the very last moment.

If one looks at the main character, then the issue goes even further. Turri is competing for Germany, though from his accent and his way of expressing we understand he comes from South Tyrol (as Trenker himself). In addition, his friend Anni, who also has a crush on Turri like Mary and lives with him and his mother in the hotel, prepares Turri's favourite dish: '*Tiroler Knödel*'.¹¹ Interestingly, Charlier is depicted as French because of his language, first of all, but also due to a quite peculiar culinary adaptation; also in the French version, his cousin Christine prepares for her beloved Charlier his favourite dish: a '*soupe au fromage*'. This reference could have been avoided easily, or even cut; instead, the dish is kept, and it is adapted to the new targeting context. The *Knödel* are a cultural vehicle and, as such, they are kept and adapted accordingly. The attention to such a detail is enough to show how attentively these versions have been constructed to make their respective national identifications possible [Fig. 8].

To sum up, the most important consequences of these choices related to nationalities and cultural elements is that in the German-speaking version there are three nationalities interacting (Germany, Austria, France), while in the French version all happens within France and French culture. In this sense, it is quite emblematic the fact that, in one of the first scenes, the friends of Turri refer to Mary as the '*Französin*', while the friends of Charlier refer to her as '*la fille Parisienne*'. To the internationalism of *Der Sohn*, *Les Chevaliers* answers with an intra-national structure, where the main opposition kept is that of being

Fig. 8
Christine serves 'Tiroler Knödel' to Turri (links)
and Anni serves 'cheese soup' to Charlier (right).



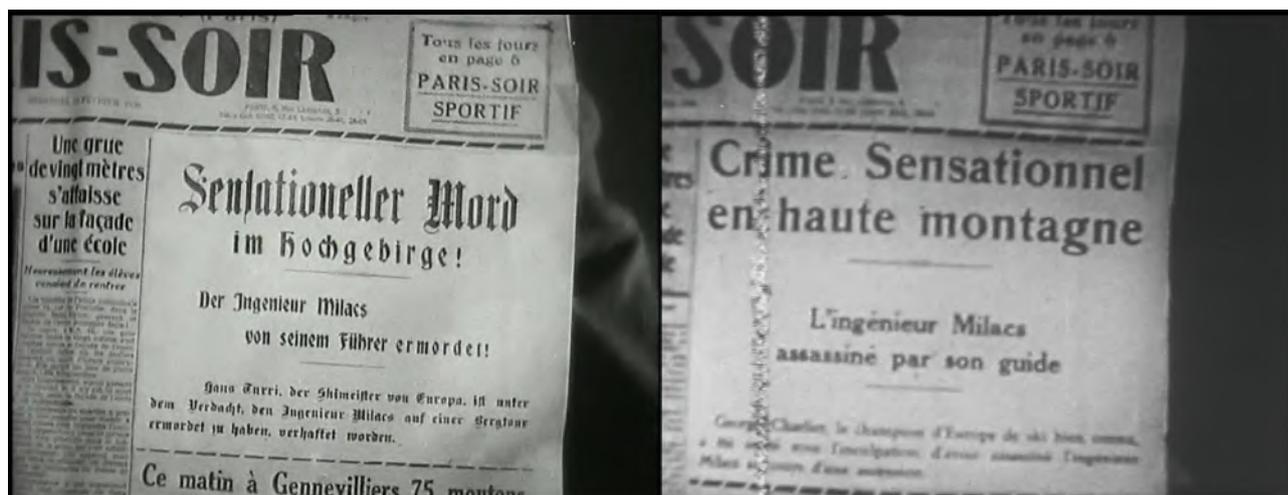
French from Paris instead of French *not* from Paris. Again, it would have been easy and more consistent to switch the two nationalities instead, having Mary coming from Germany. In a production where much attention is given to the kind of dish the actors are eating, one can assume that the choice of the nationalities must have been well thought, too.

On a side remark, it is worth noting a specific aspect of the Italian edition of the film. Here the ski-team is not German, nor French (as one could have expected, since the visual version that circulated in Italy was *Les Chevaliers*), and, surprisingly, it is not even Italian. The team in the Italian film edition is Swiss. So, in this case the aim was not to nationalize the team to better fit the new target context, but rather to renationalize it in a more neutral way, which was more consistent with the Swiss setting of Zermatt and the Swiss protagonists. This renationalisation strategy could also be related to the lip-synching constraints when revoicing the dialogues in Italian, since the French pronunciation is closer to the Italian one than the German one. Altogether this choice was allowed by the multinational Alpine context, which makes all these combinations plausible and legitimate.

THE TEXTUAL DIMENSION AND (MULTI) NATIONAL ENVIRONMENTS

The important role given to the text, in several forms, is a peculiarity of this film and therefore deserves special attention, especially due to the way it gets to be connected to identity issues and transnational variations. In fact, many scenes of both versions display textual elements such as posters, geographical signs, press articles, telegrams, notes and letters, which all together contribute to introduce a further level of complexity.

Let us begin with the most prominent of these multiple textual elements, namely the press articles. Right after Turri/Charlier is accused of murder, the news spreads in the press. In one of the very few sequences of both versions set in Paris, we first see some shots connoting the urban environment and, right afterwards, we see that the journal *Paris Soir* is being distributed in the streets. In the first page, one clearly reads the title 'Sensational murder in high mountains. Engineer Milacs was assassinated by his mountain guide', in German and in French respectively. One element is immediately striking: while *Les Chevaliers* is linguistically consistent, in *Der Sohn* one sees that this article, written in German, has been attached over a journal otherwise all written in French [Fig. 9]. Also, in the few seconds before this textual scene, the Parisian environment is symbolized in both versions by some images of fireworks and of the '*Galeries Lafayette*' (which appears in textual form, too), though only in *Der Sohn* we see a short shot with the Tour Eiffel right before the press' sequence. Supposedly, for *Les Chevaliers* there was no need to take care of the shot with the Tour Eiffel, for the French audience would have been already familiar with



Paris and would not have needed any further symbol to identify it.

There is another element that reconnects to the metropolitan Parisian environment in *Der Sohn*: the character of Milacs' wife, who in the German version appears in a couple of scenes, for example through phone calls or a telegram mail. In *Der Sohn*, one of these scenes follows the sequence with the said press article: we are in Paris, in a luxurious café, and we see the shocked reaction of Milacs' wife apprehending the tragic news of her husband's (fake) death. Therefore, this scene not only brings us to the urban environment, but let us meet an additional, quite important character (indeed, the trap to Turri has been planned together by her and Milacs, as we will learn later in the film). So, the existence of Milacs' wife in Paris is filtered by phone calls, a telegram and by the reading of the press, but is still present and carries with her an urban environment which, even though briefly, contrasts with the otherwise omnipresent mountainous environment.

In *Les Chevaliers*, this is all very different. At the beginning of the film the wife does not call to the hotel, she just sends the telegram to Milacs and, more importantly, she never really appears on the screen. In fact, also in the credits, her character is not mentioned at all. In the French version, Milacs' wife only exists through her telegram – the textual level – and the verbal references of her husband. The plot stays the same but her physical presence is cut and, with her, the scene in the Parisian metropole, too. This way, also Paris (and, with it, the urban environment) gets to be partially erased, so that *Les Chevaliers* reduces its openness even further, especially when comparing it with the multi-national and multi-environmental *Der Sohn*.

A final example is the posters advertising the ski competition. At the encounter with Mary, Turri tells that his team runs for the '*Europa Meisterschaft in Skilaufen*', while Charlier mentions a '*Championnat de ski*'. This variation is confirmed by the posters of the competition. They appear several times in the background, for instance at the reception where the desk clerk works. They both display the same image of a skier, the location indicated is also the same (Zermatt), though the poster in *Der Sohn* says/indicates '*Europa Meisterschaft*'

Fig. 9
Scene displaying the articles 'Sensationeller Mord im Hochgebirge. Der Ingenieur Milacs von seinem Führer ermordet!' in German in *SwB* (links) and 'Crime Sensationnel en haute montagne. L'ingénieur Milacs assassiné par son guide' in French in *CdM* (right), though both are framed in the same first page of the magazine 'Paris-Soir'.

and that in *Les Chevaliers* only 'Championnat'. This testifies of a different attitude towards the otherwise identical event, the ski competition, which is presented as European only in *Der Sohn*. Our suggestion is that German productions were already relating to a European ideal, while French ones might have been less interested in stressing this aspect.

THE MUSICAL DIMENSION OF MOUNTAIN LANDSCAPE BY GIUSEPPE BECCE

Film music is crucial, both for the aesthetic experience of the early mountain film and for the transcultural identification of the Alps in the genre, as we show with the example of *Der Sohn/Les Chevaliers*. It was the Italian composer Giuseppe Becce who particularly shaped the soundtrack of the mountain film genre. *Der Sohn/Les Chevaliers* was to mark the beginning of a collaboration between the Becce, Trenker and the French film producer Vandal et Delac, which had not yet been consolidated. His music was able to express 'the eternally changing panorama of the mountain world, the uncanny life of the clouds and the grandiose physiognomy of the mountains', as can be read in a German press release for his movie *Der Berg ruft* ("Bergspitzen" n.d.).

Considering the reception of his works, Becce is considered Germany's first film composer, collaborating with some of the most renowned directors during the silent era. *Der Sohn/Les Chevaliers* was to mark the launch of a decade-long collaboration with Trenker. Becce's preference for the mountain film genre can be traced to an aesthetic kinship with the silent film. In fact, there was no other sound film genre that had such long scenes with sparse dialogue and an overall documentary character as the mountain film and therefore demanded on the technique of the musical accompaniment, characteristic of silent cinema exhibition. Stylistically Becce's mountain film scores of the 1930s are also heavily influenced by music scored before the commercialization of synchronised sound in cinema, that is, for silent films. Becce's lyrical, heroic scores especially in combination with Trenker's spectacularly photographed forces of nature were in academic literature studied as propagandistic (Koepnick 2009, 122-123). However, Becce's film-musical style, which was influenced by Weber, Wagner and the tradition of symphonic poems, not only was consistent before, during and after 1945, but also represented a commonly used musical style in mainstream film productions until the 1950s. His repeated use of musical pastorals for the mountain landscapes (also in German-speaking *Heimatfilme*), which give expression to a modernist sentimentality, also corresponded to the conventionalized stylistic device for the tonal depiction of nature. Besides this, there is also noticeable influence of popular *Schlager* (sound film hits) – whether as source music or as nondiegetic soundtrack.

As discussed by Corinna Müller (2003), the exterior shots in the German-French coproduction *Der Sohn/Les Chevaliers* were shot without sound

recording. Both the sounds and the dialogues were post-synched, and the music passages added later. In addition to the adaptations of the respective language and cultural system, there are also differences on the musical level. In the following chapter, we will elaborate on the role of music in playing with the different nationalities and cultural elements in the respective film versions. More specifically, we will approach the different levels of film music analytically, extra-diegetic and diegetic music as well as the sound film hit *Wir Kameraden der Berge/Marche des Chevaliers De La Montagne* composed especially for the film by Becce.

MUSICAL 'AUTHORSHIP' AND EXTRA-DIEGETIC SIGNATURES OF THE ALPINE REGION

The level of extra-diegetic music immediately raises questions about musical 'authorship'¹² in the French-language version. During the final sequences of the film, a completely different music can be heard in the French and German-language version, the latter of which Becce composed.¹³ This is the sequence of the ski race, which lasts nearly ten minutes in both versions. The silently shot alpine panorama in Zermatt could have well been visually and musically adapted as a unifying element between the cultures, without the need to add another important difference between the two film versions. However, the fictional winter sports event in the Zermatt ski region was partially shot with two different cameras as well as we hear a completely different musical accompaniment in *Les Chevaliers* than in *Der Sohn*.

In *Les Chevaliers* it consists of a few monotonous motifs and rhythmic figures that sound in unison. In total, we hear 10 minutes of low-contrast effects and atmospheric music. If the refrain theme of the sound film hit *Wir Kameraden der Berge* were not sounded several times instrumentally, Becce's trace would have been blurred completely. The musical illustration of longer film scenes with more or less unchanged image subjects is actually one of the composer's specialties, which he had already stylized in the silent era.¹⁴ In the German version, on the other hand, we hear contrasting illustrative music very typical of Becce, consisting of motifs from the sound film hit, march-like rhythms, waltz-like themes, and rapid up-and-down sequences that correspond with the skiers' rapid movements. Instrumentally, woodwind and brass instruments, strings and percussion are used, making the accompanying music more contrasting. It is hard to imagine that problems with the copyright could have been the reason for a completely different extra-diegetic music for this final scene in *Les Chevaliers*. In the French version, there are film scenes that reveal Becce's characteristically suspenseful underscoring, even if somewhat altered by the editing of some scenes such as the one in which Milacs is searched for in the mountains.

In general, Becce's signature on the level of extra-diegetic film music is less to be found in *Les Chevaliers* than in *Der Sohn*. This has to do with the fact that some film scenes with extra-diegetic music from the German version do not appear in the French one or have been omitted. For example, the scene in *Der Sohn* at the beginning of the film where ski jumpers are shown competing for a minute and a half. In addition, we hear off-screen voices commenting on the sporting event and a rural utility music (*Gebrauchsmusik*) played instrumentally by a brass band, which corresponds very well with the identification of the Austrian origin of the actors and the fictional Austrian origin of Trenker in *Der Sohn*. For all practical purposes, the post scoring of the dialogue and the dubbing of the music would have allowed the scene to be used in *Les Chevaliers*, but the brass band music associated with the Austrian countryside probably disrupted the intra-national structure of the French version.

The scene after the ski jumping competition in *Der Sohn* likewise does not appear in *Les Chevaliers*. This is accompanied by the fact that an important musical topos associated with the Alpine region is also not heard. In *Der Sohn*, we see Trenker, Mary, and Milacs sitting on a mountain peak, with cuts to the cross-country skiers training in the snow-covered Alpine landscape. This is accompanied by oboe and clarinet passages as well as horn phrases. Becce repeatedly resorted to these typical characteristics of a musical pastoral for the setting of high mountain landscapes in mountain films as well as in *Heimatfilme*¹⁵. Becce thus joined a phenomenon of European artistic expression for the musical depiction of pastoral and rural life that had been received since antiquity. This tonal 'topoi' or 'code' associated with the Alpine region and circulating medially in works such as Richard Strauss's *Eine Alpensymphonie* (1915) is omitted entirely in *Les Chevaliers* by the omission of the scene. Only in the opening credits of the French version, when the Matterhorn is shown in close-up, one hears elements of the pastoral topos. The fact that the musical representation of the Alpine region was omitted in *Les Chevaliers* and thus also freed from a specific kind of audiovisual pathos perhaps already indicates the genre's own development in France, which indeed took on striking characteristics a decade later through Ichac.

DIEGETIC MUSIC AND NATIONAL REFERENCES

The diegetic film music is another important narrative element in the play with nationalities and the respective cultural adaptation strategies of the German-French versions. For example, right at the beginning in *Der Sohn*, while the three skiing buddies stop at a hut after meeting the French tourist for the first time during their training on the ski slope, Turri is teased by Morel. The friend insinuates that Turri likes '*die Französin*' and then whistles the Marseillaise, thus simultaneously locating Mary geographically via the whistled melody

of the French national anthem. In *Les Chevaliers*, this musical reference to France was cut out; it was probably not necessary within the intra-national conception of the film version. In *Der Sohn*, another national descriptor can be observed through the diegetic music, namely in the Paris scene already mentioned above, in which the 'sensational murder in the high mountains' is announced in the café. In *Der Sohn*, we see three coffeehouse musicians and hear a *chansonnière* singing along with them. Through the representation of the coffeehouse musicians, not only the atmosphere of the luxurious café, but rather the geographical location itself is made clearly audible to a German-speaking audience – and this primarily through the use of the French *chanson*. Just as in the Paris scene in *Les Chevaliers* the Eiffel Tower was omitted as a symbol of French identification, in the same scene we do not hear any music that should represent France.

A cultural adaptation of the diegetic film music to the respective film version can also be described by the use of the sound film hit *Wir Kameraden der Berge*. Apparently inspired by the songs of Ferruccio Biancini ("Febbrile attività" 1930, 6), the hit song was composed by Becce especially for the film, although it was to be heard again in later feature films and documentaries with an Alpine setting – for example in the feature film *Berge in Flammen*, which was made a year later. In *Der Sohn* as well as in *Les Chevaliers*, the song is used as a recurring motif linked – whether sung, whistled or instrumentally – to the three skiing companions, while the song in its sung manner has been adapted to the respective language and cultural system of this MV. We hear the refrain of the song in *Les Chevaliers* in French and in *Der Sohn* in German when the three ski buddies perform together. The linking of the song with the three skiers intervenes significantly in the dramaturgy of the film, since it is not only about the film hero Trenker, who defeats evil and energetically restores the disordered order, but also about the motif of comradeship, omnipresent in alpinist discourse.

The text was written by the German author Heddy Knorr. She worked as an author in numerous films in which Becce was responsible for the sound film hits.¹⁶ In accordance with the alpine subject matter, the text has as its content both the idealization and exaltation of the high mountain landscape and the heroic male comradeship experience in the mountains and could therefore be more easily communicated linguistically and adapted transculturally.

TRANSCULTURAL SOUND OF THE ALPS

The plurimedial dissemination of sound film hits, for example, in sheet music, records, music albums, or printed song texts is part of the conventions of the commercial evaluation of film music by the music industry, which gives the films a specific musical dimension and has a decisive influence on their memory-forming potential. The marketing of film music also provides information about the success of a film. The plurimedial distribution of *Wir Kameraden der Berge*

was to leave a lasting mark on the sound of the transnational and transcultural space of the Alps. The film song was distributed in different media in Germany, France and Italy parallel to the release of the film. In Germany, for example, a recording with two record stars of the Weimar Republic – the singer Paul O'Montis accompanied by the lightly swinging dance orchestra of Danjos Béla – appeared on the German label Odeon under the title *Wir Musketiere der Alpen* (1930) immediately two days after the film's release.¹⁷

In 1930, a recording under the same title with a record star of the Weimar Republic, namely Oskar Joost, was also released on the German label Electrola. The same recording from July 1930, also went on sale in France and Italy through *disque grammophone* and *disco grammofono*. Like Electrola, both labels belonged to the British Gramophone Company near Berlin. The distribution of the sound film hit with a German recorded text version in France and Italy can be traced back to the fact that German was spoken and consumed in the regions of Alsace-Lorraine and South Tyrol. After all, South Tyrol, located in the Alps, was predestined for the reception of the mountain and hiking song *Wir Kameraden der Berge*. A reception of Becce's hiking song in Alsace-Lorraine cannot be ruled out due to its geographical proximity to the Alps. In addition to the marketing of the song in various recordings, it was also distributed through sheet music editions in the transnational Alpine region and thus made available for the various practices of musical appropriation.

In 1930, for example, the song *Wir Kameraden der Berge* was published for voice and piano by the publishing houses Winkler & Harm (Innsbruck), by Anton J. Benjamin (Leipzig) and by Edition Meisel & Co (Berlin). Under the title *Marche des Chevaliers De La Montagne* and in the arrangement by Fryck Winners, Becce's sound film hit was also published in 1931 in a sheet music edition for orchestra and piano by the French music publisher E.M.A.C [Fig. 10].¹⁸ The French text was written by Pol Varence. The translation of the song text into French naturally allowed for a nationwide reception or cultural remembrance of *Les Chevaliers*. The distribution of the sound film hit in French also allows conclusions to be drawn about the popularity of *Les Chevaliers* or the popularization of the mountain film genre, which was to find an important starting point in France with *Les Chevaliers*. The transnational marketing of the song refers not least to the transcultural identification of the Alpine region.

THE ALPINE EPICENTRE

Der Sohn/Les Chevaliers is a succeeding model of MV. The two versions are based on the same screenplay, they have been created semi-simultaneously (Barnier 2013)¹⁹ and adapted by the same persons, though they have been shaped differently according to their targeting contexts. Indeed, the analysis of film, text and music lead altogether to a similar conclusion: by playing with different nationalities, having a European frame and displaying the metropolitan environment, *Der Sohn* is more internationally oriented than *Les Chevaliers*,

Fig. 10
Poster of the music
of CdM, *Marche des
Chevaliers De La
Montagne*, E.M.A.C.
1931, provided by
Museo Nazionale della
Montagna di Torino.

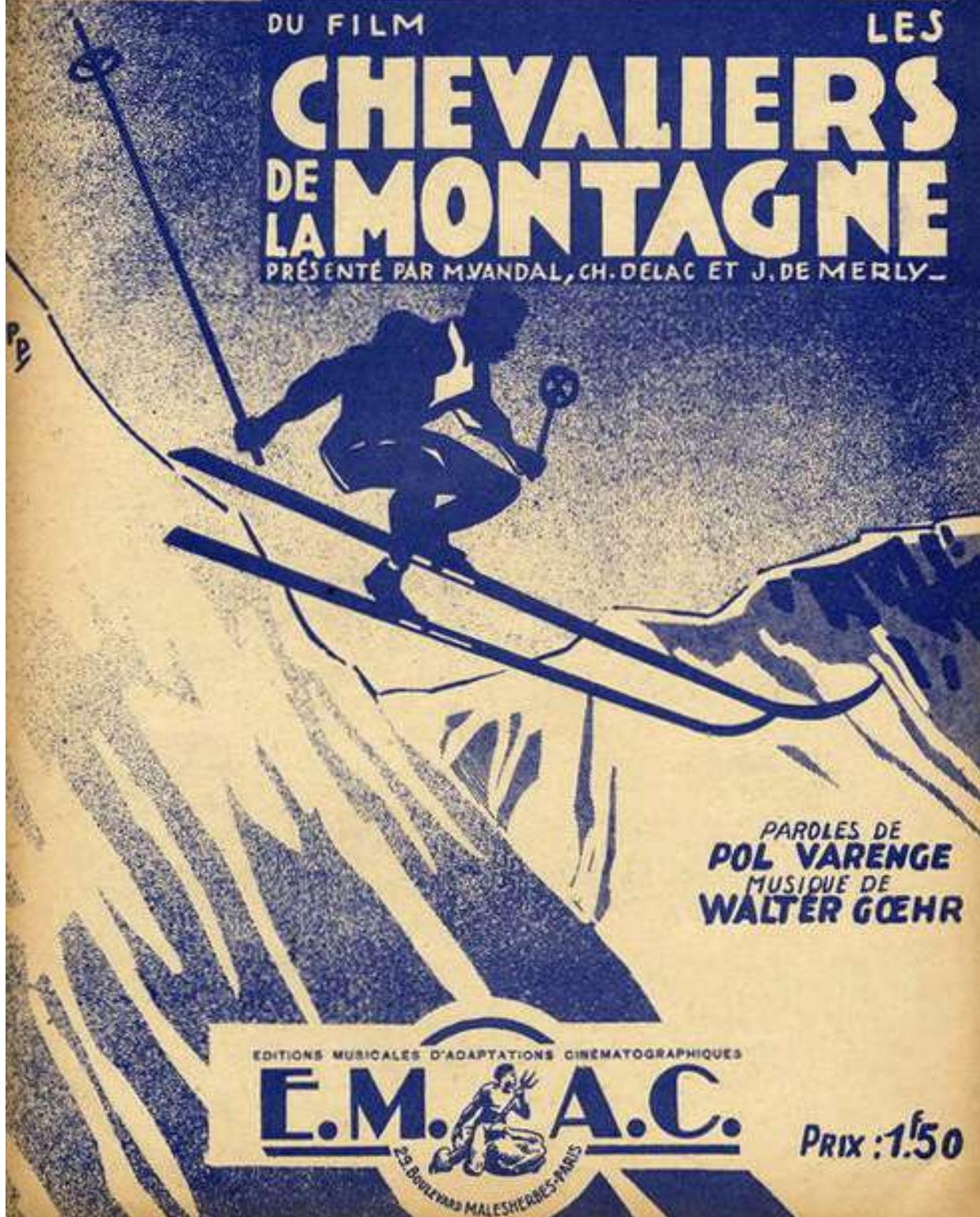
**1^o MARCHÉ DES
CHEVALIERS DE LA MONTAGNE**
2^o DE TOUTE MON ÂME TANGO

DU FILM

LES

**CHEVALIERS
DE LA MONTAGNE**

PRÉSENTÉ PAR MYNDAL, CH. DELAC ET J. DE MERLY.



PAROLES DE
POL VARENGE
MUSIQUE DE
WALTER GOEHR

EDITIONS MUSICALES D'ADAPTATIONS CINÉMATOGRAPHIQUES

E.M. A.C.



PRIX : 1.50

which is the result of several relocations and adaptation strategies. The changes of location were emphasized primarily acoustically through the use of diegetic music, as reminded by the musical cue of the *Marseillaise* and the musician in the French café.

In the French version, the dimension of the 'other' is reduced to the minimum, since the action takes place in Zermatt, which is in Switzerland and not in France. Starting from the same point, that is, from the narratological and geographical epicentre of the Alps, *Der Sohn* goes more international and European, while *Les Chevaliers* goes more local and remains within the French context. We suggest that the reason for this might be that Trenker and mountain films were already well established in the German-speaking context at the time of the release of *Der Sohn*, while in France the first establishments of a mountain film genre coincided with the release of *Les Chevaliers* – as, has been shown, *Les Chevaliers* was also still marketed there as a sport film. In other words, the German version could count on an audience familiar with the genre, the romantic rhetorics of the Alps, and the film's main character, the romantic rhetorics of the Alps, and the film's main character, Luis Trenker, and thus could take a broader, more international direction.

The setting of the Alps, on the other hand, first had to find an audience in France. Arguably, with the intra-national structure within audiovisual narration, the new, mountainous film location could be brought closer and conveyed to a French audience of the time. Nevertheless, if one avoids the distinction of nationalities and urban environment, part of the transnational atmosphere remains in the French version as well. The film is actually set in a 'foreign' country, in the Swiss location of Zermatt, and we also acknowledge the presence of other national teams, for instance the Austrians who are the main competitors during the race in the final scene of the film. The fact that the location is not strictly French is not so problematic for *Les Chevaliers*, since the Alps bring with them a multinational environment. Because of their semantic openness, the Alps offer a particularly ideal setting for MVs, an 'open-air epicentre' for transcultural communication as well as for nationalization processes.

As a geographical territory at the intersection of several countries and cultures, the Alpine environment proves to be a privileged territory for diverse cinematic cultural transfers through *Der Sohn/Les Chevaliers*. This is also confirmed by the hit song *Wir Kameraden der Berge*, composed especially for the film: its international marketing illustrates how open the subject of the Alps was to transcultural appropriation practices, both through the sale of the German recordings in France and Italy and through the French version of the lyrics by a French publisher. In order to understand how the adaptation strategies of MVs worked together, it would be further interesting to link our analysis to the question of how the film and Becce's hit song circulated in countries such as Switzerland and Austria, which are close to the film production and content of the film. Since we know that a post-synchronized version of the film existed and circulated in Italy, a further comparative analysis of this French-German MV should primarily include the Italian context.

Since *Der Sohn/Les Chevaliers* is the first 'multiple *Bergfilm*' of the history of cinema, our analysis can serve as a solid basis for understanding the transcultural significance of the Alps in European cinema of the early 1930s, although again, the Swiss, Austrian, and Italian contexts of *Der Sohn/Les Chevaliers*'s reception and interpretation are missing for a broader assessment. Due to a lack of source insights on the Italian version of the film or a lack of resources for systematic research of press materials on the film in the aforementioned countries, we focused on the two cultural context the film was produced by.

To sum up, the 'multiple *Bergfilm*' by Trenker object of our paper contributes a deeper understanding of the significance of the Alps in European early sound film history and of the progressive medialisation of the alpine landscape through mountain films.

The authors would like to express our sincere thanks to Marco Ribetti, Museo Nazionale della Montagna di Torino, for his precious help and for allowing us access to the audiovisual material for research purposes.

Notes

¹ On the shifting conceptions of the Alps in cultural and intellectual history and the backgrounds of the history of the mountain film genre see Giesen 2008 and Baer 2016.

² German mountain film has received critical attention to date for its political, social, and aesthetic implications, but remarkably little about its role in the environmental history of the Alps. On the depiction of mountain films in the context of the development of Alpine tourism and the role of the media in environmental change. For an investigation on that topic see Peabody 2021. On the idea of climate history in constellation with modernity in early German mountain film see also Bush 2019.

³ The following abbreviations will be used from now on: MV(s) for multiple version(s).

⁴ The most prominent research on the phenomenon of the MVs has been conducted between 2002 and 2004, when the topic was actively revitalized by groups of film scholars in Hamburg, Germany, and especially in Udine, Italy. See for instance the issues of *Cinema & Cie* devoted specifically to MVs and to the concept of multiplicity (nn. 4-6, 2004-2006); Distelmeyer 2006; Antonini 2003). These essays raised fundamental questions about MVs and set the basis for future research. Next to them, Martin Barnier (2004) has specifically specialized on French-Hollywoodian oversea cases. The works by Joseph Garncarz on the interrelation between languages and cultures, Malte Hagener on the transnational dimension of MVs, and Chris Wahl on UFA productions (all published in *Cinema & Cie*) have been especially useful to frame the current study.

⁵ The following abbreviations will be used from now on: *Der Sohn* for *Der Sohn der weißen Berge* and *Les Chevaliers* for *Les Chevaliers de la Montagne*.

⁶ Very few papers and scholars have researched the interrelation between MVs and music. Few exceptions are the ones involving the German-French MV *Die Dreigroschenoper / L'Opera de quat'sous* as well as the German, French and Italian coproduction *Paprika* (1932/33). See O'Brien 2006; Calabretto 2004; Zechner 2021.

⁷ In many cases, the MVs are not archivally accessible. Contrary to expectations, we were only able to find the French copy in the archive of the Mountain Museum in Turin, which plays a relatively minor role in Europe. However, this shows how important it is in the research of MV's to also give importance to the more local, specialized cultural heritage.

⁸ This reception was prominently represented by Siegfried Kracauer (2017) and Susan Sontag (1981).

⁹ In the international reassessment of the fictional, German mountain film, Eric Rentschler (1990) was one of the first to highlight the genre's dialectical relationship between 'untouched' nature on the one hand and modern technology on the other.

¹⁰ For a detailed analyses of both versions see Haque 2013.

¹¹ The fact that '*Tiroler Knödel*', of all things, are the favourite dish of a Swiss mountain guide was considered irritating in a film review of the 1930 German version with regard to the linguistic portrayal of the various nationalities, as was the fact that the Americans, French and Swiss in the German version all speak in the Berlin dialect. ("Alpine Literatur" 1930, 102–103).

¹² In many cases, film music is a collaborative effort. Especially in genre cinema, the music, as it is ultimately heard in the final soundtrack, is rather to be understood as a sequence of decisions. Conceptual preliminary stages of the film music can already be found, for example, in some scripts for Trenker's mountain films.

¹³ Part of the composed music of this final scene is available in the music collection of the German Film Institute in Frankfurt (DFF, Deutsches Filminstitut).

¹⁴ For example, his cinema pieces are characterized by flexible and lively architecture.

¹⁵ Maria Fuchs. 2024. "The Silences of the Woods: Heimat and Anti-Heimat", 19th century music, forthcoming.

¹⁶ For example, she wrote the lyrics for the sound film hits of *Berge in Flammen*, *Condottieri* or *Der Verlorene Sohn*.

¹⁷ According to Andreas Schmauder (owner of Phonopassion, an archive of historical sound carriers) the record was released on 14 August 1930.

¹⁸ An edition of the sheet music is in the French National Library.

¹⁹ The concept indicates MVs shot keeping time and space unity within the versions of a same title.

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Wanda Strauven

Touchscreen Archaeology. Tracing Histories of Hands-On Media Practices

Lüneburg: meson press, 2021, pp. 260

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The protagonist of the latest book by Wanda Strauven is an early cinema caricature: the clumsy countryman who, attending a film screening for the first time, jumps onto the stage and touches the screen. While Strauven is not the first to devote attention to this stereotypical character and to the films this figure inspired, most notably, *Uncle Josh at the Moving Picture Show* (Edwin Porter, 1902), she is the first to identify in this trope one of those moments of rupture and discontinuity in the history of a medium that our tactile and interactive present can shed light upon.

According to the most notable historiography (Tom Gunning, Thomas Elsaesser), early rube films served as instructions for the use of a medium that had just established itself; faced with the ridiculing of a behaviour not to be imitated, the spectator learned the etiquette of the movie theatre. His or her education was part of that process of the institutionalization of cinema that aimed to distance the medium from its association with the circus and fair, and to establish it in the spaces of theatre, that is, of art. And, as in the realms of art, especially in museums, even in the movie theatre one had to learn not to touch the images: the screen was meant to produce a purely optical experience.

In Strauven's work, the rube is transformed

into a hero or a visionary, the standard-bearer of a relationship with moving images that belongs to the earliest days of a medium and that will persist into its future. This counter-history, which becomes a genealogy of our present condition as spectators touching screens in order to interact with images, is both fascinating and, most importantly, capable of explaining a fundamental aspect of postcinematic culture. Strauven presents her own archaeological method as a form of hacking into history, a process that involves loosening its joints, a "method" that lies between Wolfgang Ernst's archivist option, Erkki Huhtamo's cyclical histories and Thomas Elsaesser's meta-historiographic framework. Starting from the realm of filmology, where symptoms are revealed, Strauven's reflection becomes in part theoretical (what is the difference between tactile and haptic experiences?), in part historical (the role of manual operativity in precinematic devices) and finally mediological, focusing on a pedagogy of interfaces and their role in childhood (is manual interaction with screens like a form of playful learning?).

Due to this triple focus, *Touchscreen Archaeology* does not develop an archaeology of the sense of touch in its encounter with cinema, or the cinematic, or even of specific gestures and their reformulation in relation to evolving

screens, but rather works in a highly original as well as rigorous way on an archaeology of the praxis of touching images, or their supports; on an archaeology of a contact-based intimacy between the human and the iconic. One of the reasons why cinema – understood as a screen-theatre-spectator complex – is today experienced by the younger generations as an ancient medium, the best expression of the visual culture of a century now gone by, is its character as an apparatus that creates distance between the images and the spectator, confirming the predominance of the eye over the other senses. Today, the intimacy between our hand and images is total, as Strauven demonstrates by listing a series of operations that our fingers perform on digital screens to point, pinch, scroll, swipe or just move the images; to be a digital native means above all to think of images as virtual objects with which to operate, to browse them through manual techniques – such as the “cosmic zoom” of contemporary cinema, which allows radical changes of scale without blurring.

In the final chapter, Strauven proposes calling the iconicity of today's visual culture “image+”: the term is picked up from the language of image processing software and alludes to an iconic form that works beyond its visual appeal, inducing hands-on operations. Contemporary images are thus the support and starting point of an operation that aims at an active construction of the visible, but also of an experience that hinges on other senses, first and foremost touch. This without touch being the ultimate objective; the sensation the skin feels when touching the surface of a screen (which is always identically smooth and neutral) does not imply production of meaning. Rather, as the author states, *con-tact* is the aim, understood as the result of multiple agency, only partly assumed by the human subject, partly by the affordances of the images, concretely capable of triggering actions. Strauven doesn't go so far as to consider immersive technologies, but in the environments of the extended worlds the *plus* quality of the images is clearly evident,

and *Touchscreen Archaeology* provides key insights for analysing this.

Rather, this volume is focused on cinema, which might seem poorly suited to hosting the image+. On the contrary, Strauven's archaeological research demonstrates that what the medium became in the 20th century was not inscribed in its DNA and did not correspond to the codes of its “development”. Cinema history started under the sign of the tactile (from flipbooks to phenakistoscope, from zoetrope to praxinoscope), took a long detour, and finally returned, with the digital, to the path it had taken more than a century ago. Consequently, postcinema can, or perhaps must, turn into a sensorial bricolage experience, employing all the playful-philosophical potential already typical of optical toys, to which Strauven dedicates important pages.

Finally, one of the most intriguing results of Strauven's research is the “subversive” potential of the contemporary tactile mediascape, which constitutes the re-emergence of an idea and praxis of the screen linked to historically subordinate figures, first and foremost women. Indeed, among the prefigurations of the touchscreen are the fire screen and the folding fan, which was used as a form of visual media by 19th-century gentlewomen but required some manual dexterity, being an illustrated object to be leafed through, a handbag-sized tactile surface (Giuliana Bruno calls it “the ladies' own private cinema”). But there are also non-auratic art forms, such as the cabinet of curiosities (*Wunderschrank*) an (almost) portable closet-screen, that links wonder to touch and to the pleasure of handling the extravagant object; and, finally, there is the Futurist “Tactilism” with Marinetti's Tactile Tables, an early transformation of the screen from surface to interface, which Strauven suggests should also be recovered for pedagogical purposes.

The simpletons, the boorish, the foolish (like Welles' Don Quixote), and even children, have always sensed with their own bodies that the

surfaces on which images are inscribed are available to be acted upon and offer themselves to the hands before the eyes. Reading this volume today, after years of pandemic and the demonisation of touch as a synonym of contagion, infection, transmission, helps to rehabilitate all its creative power and to hand it over to the new generations, fostering their spontaneous rethinking of a medium that remains at the foundation of contemporary visual culture.

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Mireille Berton

Le médium (au) cinéma. Le spiritisme à l'écran

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A device that records and projects, making visible what escapes natural perception. Its images are suspended between presence and absence, past and present. Around it, different subjects gather and connect, sitting in the same dark space and enchanted by a common phantasmagorical entertainment. This description refers not only to the mechanism of cinema but is equally fitting if we think of another apparatus of communication with another space (or rather a beyond): precisely the spirit medium, human body that becomes the center of machinic processes such as recording, visualization, and communication with the universe of ghosts. (Spirit) mediums and (technical) media indeed seem to have invented each other, such are the many similarities that characterize their functioning, starting from their very linguistic homology. Is it therefore possible to reconstruct a cross-history of otherworldly spirits and media images, starting from the identification of a cultural and social context favorable to the origin of both spiritism and cinema? How does this mutual constitution impact how cinema has dealt with the problem of the ghosts, together with the bodies and technologies which capture their presence?

These are questions that animate Mireille Berton's volume *Le médium (au) cinéma*. Before

getting to the heart of the matter, it is necessary to emphasize the specific originality offered by Berton's approach to both film history and media archaeology, which can already be found in her previous essay *Le corps nerveux des spectateurs* (2015). It is in fact a personal and innovative declination of the epistemological approach to the history of viewing and listening devices developed in Lausanne's school, which not only draws on the research of François Albera and Maria Tortajada, but also on the work of scholars outside film theory such as Rae Beth Gordon, Jacqueline Carroy, Alessandra Violi. In this respect, psychological and parapsychological discursive formations, real and imaginary technologies, art films and b-movies are summoned without any hierarchical distinction as historically determined symptoms of a relationship capable of connecting the emergence of phenomena which only apparently possess distinct histories (above all, audiovisual devices and hallucinated subjects). The tool for accessing this submerged history is always film analysis (analogous to the analysis of dreams and Freudian slips for the psychoanalyst), which allows not only to individuate the intersecting history of mediums and media, spiritism and cinema, but also to unmask the ideological neuroses, especially patriarchal ones, reflected

in insidious strategies of construction and domination of female identity.

Starting from this operation, Berton departs from the method, albeit foundational, of Friedrich Kittler who first discussed the double meaning of the term medium, but with the assumption of a precedence of technological materialism over other determinations. Rather, *Le médium au cinéma* moves closer to those ghost-focused media archaeologies (especially Jeffrey Sconce, Stefan Andriopoulos, and Tom Gunning, who also signs an exquisite preface to the volume) which have placed specific attention on the horizontal co-determination between technologies, on the one hand, and discursive formations and imaginaries, on the other hand (what Berton calls the reciprocal interaction between hardware and software).

If the first chapter is devoted to the theoretical *status quaestionis*, with a particular focus on the *spectrality studies* developed since Jacques Derrida and his influential *Specters of Marx* (1993), already from the second chapter the focal shift operated by Berton begins to become evident. In fact, the focus of the investigation is not so much on the ghost as on the spirit medium, whose identity depends – always in a reciprocal and reversible relationship – on that of the technological media developed in the same period (the “spiritual telegraph” is a current metaphor in nineteenth and early twentieth-century parapsychological literature). Indeed, media technologies entertain an ambiguous and articulated relationship with spirits: sometimes they hinder their manifestation, in rare cases they should record and prove their effects, but almost always they serve as an epistemological model to which psychics conform and in which they find legitimacy. If the spirit medium then appears as a battery traversed by a huge and complex system of energies, it is especially the female body, by virtue of the hysterical, nervous, passive, and delicate character culturally attributed to it by a patriarchal society, which constitutes the most convenient tool for otherworldly communication.

The condition of spirit medium then becomes one of those spaces of marginalization in which women find, paradoxically, that voice and agency denied by the prevailing social rules (an element that returns in Berton's analysis of the 1944 movie *The Uninvited*, directed by Lewis Allen). And it is thanks to this exchange (between bodies and technologies) that it also becomes possible to reinvent the archaeology of cinema, as Berton does in the second chapter, in which she considers not only Robertson's phantasmagoria or Marey's application of graphic methods to the body of the Italian psychic Eusapia Palladino, but also Mesmer's *baquet* and ectoplasms and ideoplasms as pre-cinematic devices.

Already in this first part of the book, the methodological centrality that Berton gives to the analysis of film as a privileged heuristic tool for archaeological investigation emerges, and imposes itself in the following chapters as the main register of the investigation. In the selection of the film corpus, a particular predilection for Hollywood genre cinema (whose reinterpretation is never lacking a playful irony) does not escape. Precisely because of its popular destination, these movies turn out to be the most suitable to account for the way an entire episteme is reflected in mass culture. Exemplary is Berton's analysis of *The Devil Commands* (Edward Dmytryk, 1941), with Boris Karloff playing the typical role of the mad scientist who tries to record the otherworldly presence of his deceased wife. Here the analysis brings out not only the cultural influence of the radio, but also of a forgotten and failed device such as the necrophone envisioned by Edison in the 1920s, which was supposed to pick up the presence of dispersed units of life in the ether. Equally significant is Berton's reading of one of William Castle's gimmick movies, *13 Ghosts* (1960), whose sensationalist entertainment enables a deeper understanding of the *machine à fantômes* identity shared by spirit *séances* and movie theaters. In fact, the experience played on the correspondence between a spirit-viewing device

within the diegesis, a pair of glasses invented by Doctor Plato Zorba, and an extra-diegetic device, the Illusion-O red and blue cellophane viewing system that allowed spectators, by focusing on one color or the other, to reveal or make ghosts disappear on screen. As Berton notes, the two tools of visualization (intra- and extra-diegetic) correspond to two tendencies of modern spiritism: the former related to the scientific recording of the invisible, the latter to the creation of a new connection between participants gathered around a spectacular entertainment. May it also be possible to reread the twofold historical vocation of cinema starting from them?

Certainly, the intersecting history of cinematic images and supernatural spirits outlined by Berton allows us to grasp some important ruptures in the history of cinema and media. Above all, the gradual disappearance of the

figure of the spirit medium, replaced precisely by surveillance technologies, as becomes evident in the sixth and final chapter in which Berton analyzes contemporary film imagery (among other titles, the *Paranormal Activity* and *Insidious* sagas) following the *topos* of the haunted house and its transformations. This prevarication of technology over the body is echoed in the spectrality of today's virtual mediality, expressing itself in the invisible action of algorithmic forces, in the restless eternity of digital identities trapped in social networks, or, as Berton ironically points out, in online work sessions that by demanding constant "presence" cannot fail to remind of postmodern spirit *séances*. The persistence of these specters in the contemporary socio-digital horizon only confirms the urgency of a cine-psychoanalysis such as Mireille Berton's, capable of resurfacing the historical repressed that inhabits the unconscious of media devices through a tight dialogue with the imagery they produce.

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Cornelia Klecker and Gudrun Grabher

The Disfigured Face in American Literature, Film, and Television

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As an introduction to a theme as complex and puzzling as the human face and its disfigurement the authors of *The Disfigured Face in American Literature, Film, and Television* Cornelia Klecker and Gudrun Grabher select poetry by Kenneth Sherman from the volume *Words for Elephant Man*. The face and personal story of the infamous Elephant Man take shape as an emblem and symbol of body disfigurement, which became a sort of spectacle of deformity. Through Kenneth Sherman's poetry the popular story of a miserable freak stands out. The face of the well-known elephant man, a face "malformed and guileless", introduces the theme of the book, a theme which is one of the most relevant anthropological and cultural topics across centuries and cultures. As a part of the body, the fully visible face represents an essential component of social identity, calling for cultural meanings. The face is a familiar and universal element which enables self-knowledge and encounters with otherness. The ability to express emotions, feelings and thoughts through facial mimicry is unique to human interaction and communication. Therefore, the face represents the center of a dialectical relationship between the gaze of the human being and the community. Singular and ordinary, the face receives both the gaze of the individual on itself and the one of others, thus the gaze turns the face into an object. As

social *topos*, a visual figure and literary motif, the human face has been analyzed also as a space and a scene of facial disfigurement. Facial appearance and its deformity have been associated with moral character, often with a negative connotation. Above all facial disfigurement has been interpreted as a result of a monstrous condition, corrupted identity, or an evil sign. The aim of *The Disfigured Face* is to precisely identify and define the different forms of facial disfigurement and its role, use and abuse in literature, cinema, and arts. The book is much more than a collection of essays about the occurrences of a theme through media, it is rather a fascinating example of a thorough examination of a prismatic issue and its sprawling proliferation. *The Disfigured Face* is divided into two parts which offer different critical views of the fictional representations of facial disfigurement. In the first section, the authors look over the disfigured face in American literature, while the second one discusses the characterization of defacement in American film and television. Referencing a vast array of sources, all the chapters draw on a complete "exposure" of both traditional connotation and contemporary discourses of the subject. This fascinating book presents the first cultural and historical understanding of facial disfigurement, questioning stereotypical tropes, negative implications, and prejudiced simplifications.

The book opens with an introduction by Klecker and Gudrum, followed by an indispensable preface by Gerhard Pierer, who investigates the use of facial plastic surgery. Pierer starts with a quotation by Gaspare Tagliacozzi (a pioneer of reconstructive surgery) that analyzes and discusses the cultural and social beliefs about this medical practice. Pierer retraces the principal historical practices recognizing in the “tremendous impact of the second world war” a dramatic turn which caused the improvement of the surgical techniques. The chapter ends with a crucial exploration of the conflict between the repairing intervention and the cosmetic one. Pierer connects a brief outlook into the future of facial plastic surgery, highlighting the significance of it in the contemporary age. The first part of the book presents a relevant selection of the presence of the theme in American literature. Sharrona Pearl looks over two popular and feminist novels: *The Life and Loves of a She-Devil* by Fay Weldon, and *Flavor of the Month* by Olivia Goldsmith. The women protagonists of these two stories undergo painful and hazardous surgeries to converge on an idealistic and perfect body. Pearl discusses the traditional notion of ugliness and beauty, putting them into a dialectical relationship. Eventually the author suggests a comparison between the makeover of these protagonists and the one realized in the television show *The Swan*. The following chapters by Hayley Mitchell Haugen and Sandra Tausel deal with fictional and malformed characters and their relationship with the other. Haugen applies the model identifying disability as “narrative prosthesis” to James Hankins’s novel *Drawn*; while Tausel explores the case of *Wonder*, a children’s novel based on the story of a ten-year boy born with a facial deformity (Mandibulofacial Dysostosis or Treacher Collins Syndrome). Both these chapters negotiate “otherness”, emphasizing the contribution of these case studies to the accurate diversification of fictional discourses on facial disfigurement.

The closing chapter of the book’s first part is a tribute to Elephant Man, through the analysis of poet Kenneth Sherman’s volume *Words for Elephant*

Man. Gudrun Grabher resumes Sherman’s words, written on behalf of Elephant man, who represents a sort of *fil rouge* in the book, connecting the two parts of it. Indeed, the story of “the ugliest man in the world” inspires both David Lynch’s movie (*The Elephant Man*, 1980) and Bernard Pomerance’s play (*The Elephant Man*, 1979), which are examined in the chapter *Loving the monster* by Suzannah Biernoff. Following Brian Rosenberg’s paradigm about freak’s representations in contemporary cinema, Biernoff illustrates how Elephant man’s face acts as a mirror of society.

Male disfigured heroes and villains are the protagonists of the chapter by Fran Pheasant-Kelly and the one by Julia Moseneder. In the first case, Pheasant-Kelly remarks on the negative connotations associated with characters who are facially compromised compared to James Bond’s positive masculinity in Craig-era movies. Moseneder reviews types of facial disfigurement in a collection of contemporary television series. *In American Horror Story* (2011-), *Hannibal* (2013-2015), *24* (2001-2010), *Breaking Bad* (2008-2013), *Game of Thrones* (2011-2019), among others, violent accidents or congenital defects provoke scars, damages, mutilations, or defacements. Distinguishing between heroic and villainous characters, Moseneder attempts to identify the negative or positive connotations of facial and body disfigurement. Closely related to the previous chapter, the last chapter offers a close reading of the medical drama *Grey’s Anatomy* (2005), analyzing it in the framework of media representation. The author, Cornelia Klecker, shows how the tv-series avoid easy stereotypes about facial disfigurement connotations, presenting genuine stories and characters.

The Disfigured Face in American Literature, Film, and Television is a significant book which expands and improves the debate around a crucial theme and its representations through contemporary media.

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PROJECTS
ABSTRACTS



AN-ICON

An-Iconology: History, Theory, and Practices of Environmental Images

Barbara Grespi / ERC Advanced Project –
European Union Horizon 2020 research and innovation programme
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Recent technologies (such as virtual and augmented reality) have given new impetus to a type of image which asks us to adopt a specific cognitive and affective modality in order to enjoy it. The Spectator is transformed into an Experiencer who perceives the image as an autonomous quasi-real world, inhabiting it not only with the imagination but also with the body and senses. The ERC Advanced project [AN-ICON: An-iconology, history, theory, and practices of environmental images](#) (2019-2024), led by Full Professor Andrea Pinotti, explores the properties of this experience, defining it as an- iconic, that is, characterised by a weak or absent image consciousness. In the virtual worlds, icons deny themselves as such, concealing their mediateness, and ideally freeing themselves of any framing device that traditionally separated images and contexts.

AN-ICON is working on defining and describing the an- iconic experience along three axes: 1) *history*, focusing on the manifold an- iconic strategies and devices employed in the past; 2) *theory*, questioning concepts like presence, interactivity, virtuality; 3) *practices*, exploring the impact of an- iconic environments on contemporary professional domains and everyday life. Research along these axes is characterized by an interdisciplinary approach,

corresponding to the different backgrounds of the senior and junior scholars involved in the project (with a predominance of Aesthetics, followed by Film and Media Studies, Art History, History of Science, Computer Science and Pedagogy).

Initially, the group focused on immersivity and its history in the field of art. The term “immersion” has only appeared since the 1990s, but in the first decades of the 20th century artists already practiced forms of immersivity. Assistant Professor Elisabetta Modena (now at the University of Pavia) and PI Andrea Pinotti focused on the legacy of contemporary art with this historical period in collaboration with HangarBicocca ([Immersed in the work](#), 2022). Art-based research curated by Modena and Postdoc researcher Sofia Pirandello led to two VR works: [THE ITALIAN JOB n.3, Lazy Sunday](#) by Emilio Vavarella, and [Rosetta Mission 2020](#) by Luca Pozzi, both exhibited in the virtual space *12° Atelier* (Casa degli artisti, Milan). A monograph tracing the history of artistic practices based on the trespassing of the threshold between the real and the virtual, from Narcissus to VR, was conclusively written by Pinotti (Pinotti 2021, English translation forthcoming), while Modena’s monograph concentrated on the rise of immersive storytelling in different cultural contexts (journalism, documentaries, cinema,

videogames, museums, and cultural heritage) (Modena 2022).

Along the theoretical axis, several investigations are ongoing. After devising the concept of *environmental image* (Pinotti, 2020) and exploring the consequent rhetoric of empathy, Pinotti is developing a phenomenology and ontology of immersive environments, based on the historical dimension of technologies, image experience, and perception itself. He is focusing especially on the theological background of fundamental concepts of virtual technology such as icon, avatar, incarnation, bilocation, ecstasy. Associate Professor Pietro Conte works around the notions of illusion and deception in the contemporary mediascape and aims at deconstructing the rhetorical and commercial narratives surrounding the idea of presence (Conte and Wiesing 2022). A specific aspect of this techno-aesthetic perspective concerns how immersive media and artificial intelligence are exploited to make the dead present again by endowing them with so-called "digital immortality". In the same vein, Ph.D. student Maria Serafini investigates emerging visual practices and rituals of mourning in digital and virtual environments. She considers the role of images in shaping the ways in which mourning is expressed and experienced, and in constructing new forms of "social presence of the dead".

Over the years, the interplay between body and space has proved to be key for the understanding of an-iconic experiences, and the group is now focusing on both. Postdoc researcher Fabrizia Bandi is elaborating a phenomenology of the environment between image and spatial experience (Bandi 2021), but also working on VR and AR as implementation tools for architectural and urban practice, in line with historical techniques of representation. Postdoc researcher Margherita Fontana addresses space from a political and cultural perspective, exploring the American milieu of the emergence of VR as it relates to psychedelic and sci-fi culture, 1960s counterculture and geodesic architecture. She is

also interested in the paleocybernetic fascination with prehistoric caves and their virtual and "in-the-flesh" replicas (Fontana and Pinotti 2022). Assistant Professor Ilaria Ampollini investigates the Planetarium as an ancestor of virtual environments with the methodology of History of Science. Postdoc researcher Sofia Pirandello has studied the extended spaces of Augmented Reality (Pirandello 2020). She interprets AR as a technology of imagination and questions its feedback on human creativity, evaluating its pros and cons from an aesthetical and political point of view. Pirandello addresses AR as a tool used for transforming environmental affordances which then has many material consequences on the concrete world, in whatever field it is used (military, industrial, artistic, activist).

While research on space is predominantly characterized by a philosophical approach, research on the body develops at the intersection of media archaeology, image theory and gender studies. Associate Professor Barbara Grespi has worked on gesture-based interfaces in virtual environments to question the idea of immersive images as unframed and introduce a non-ocularcentric concept of frame, ultimately defined by the user's body and senses (Grespi 2021). She curated art-based research on the same topic (Anna Franceschini's residency, [Triennale, 2023](#), and dancer and choreographer Margherita Landi's residency, *La fabbrica del vapore*, 2023). Grespi's investigation of the genealogy of the an-iconic image in the astro-photography of the late Nineteenth century, only faintly linked to ocular perception, complemented her study of the decline of the visual in favour of the gestural and bodily. In the same vein, Ph.D. student Rosa Cinelli focuses on the theme of visual evidence and algorithmic images. Her research aims at redefining the documentary evidentiary paradigm, comparing the forensic role of photography to that of virtual reality reconstructions (Cinelli 2023).

Many avenues of media archaeological research are currently open in the AN-ICON

group, including Grespi's exploration of the genealogical role of television and its early technologies, as well as that of the olfactory sense, currently studied by Postdoc researcher Giancarlo Grossi. In previous years, Grossi investigated the relationship between immersive media and altered states of consciousness, such as dreaming and hallucination. He drew on a conception of media as forms of exteriorization and materialization of the mental universe, as his media archaeological monograph on the same topic demonstrates (Grossi 2021). His first article on the olfactory sense is contained in the current monographic issues of "Cinéma & Cie", co-edited by Assistant Professor Anna Caterina Dalmaso. As a member of AN-ICON, Dalmaso is outlining an archaeology of virtuality which draws on the history of the cinematic point-of-view shot as well as on visual devices of ancient divination. In parallel, she is working on a phenomenology of embodied experience in immersive environments (Dalmaso 2022), also curating the residency of artist and filmmaker Sara Tirelli. Ph.D. student Roberto Paolo Malaspina's research explores, with a similar approach, the relationship between immersive technologies and erotic-pornographic material (together with their genealogy in stereoscopic devices), aiming at understanding the impact of virtual reality on the production, consumption, and social agency of contemporary pornography. A second "body genre", as film theory calls it, is addressed by Ph.D. student Rossana Galimi, who re-discusses the cinematic imaginary of the horror movie, in order to develop a "feminist horror theory" updated to the time of immersive media.

Finally, a different focus on the body of the experiencer in practical and professional applications is being developed by Postdoc researchers Federica Cavaletti and Ilaria Terrenghi, together with Ph.D. student Alessandro Costella. Cavaletti is working on the practical applications of virtual reality in professional settings, with a particular focus on

physical and mental healthcare, and adopting a methodology that combines theoretical reflection and empirical data (Cavaletti 2021). At the same time, she is studying the experience of shame, and in particular body shame, and how it can be overcome using contemporary interactive technologies. Postdoc researcher Ilaria Terrenghi is approaching the area of education by dealing with the effectiveness of teaching and learning processes and the impact of immersive technologies on the learning path (Terrenghi 2022). Alessandro Costella is combining computer science, disability studies and phenomenology to explore AR interfaces for implementing devices for disabled and physically impaired people (Costella, 2023).

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The Obscene Device: Pornographies Between Cinema, Art, and Virtual Reality

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Since its most recent technological re-emergence (2014-15) (Evans 2018), virtual reality (VR) has brought forth new possibilities for the porn industry. Most pornographic products conceived for VR to date are based on a form of virtual augmentation of the POV (point-of-view) subgenre: even though they limit themselves to 180° or 360° videos rather than actual interactive environments, they integrate the strong agency of the first person shot with the visceral capacities of the body transfer process (Slater et al. 2010).

The success of virtual forms of pornography raises urgent issues regarding the aesthetic consequences that such images have on visibility and bodily self-perception: on the one hand, VR redefines the composition qualities and directing strategies of the pornographic image; on the other, it constructs new horizons of social and political agency. VR porn may therefore constitute complex biocultural dynamics concerning the politics of bodies and the gendered perceptions of the self. Following a somatechnical (Sullivan and Murray 2014) perspective— stressing the co-constitution between bodies, technologies, and images —VR pornography seems to “excite” with particular effectiveness the primary potentialities and problematics of environmental images (Pinotti 2021), especially in relation to gendered proprioception. Starting from the specific

characteristics of contemporary pornographic virtual reality, this doctoral thesis aims to outline, through a historical, genealogical, and media archaeological approach, the main connotations of immersion in the erotic image and its influence on the processes of construction and expression of gender identity.

The first chapter of this thesis addresses three “obscenity devices”— following a double meaning as material hardware and, from a Foucauldian perspective (Martin, Gutman, and Hutton 1988) as technologies of the self: the pornographic stereoscope, the adult movie theatre, and the erotic video art installation. These are three forms of visual devices that, in light of their multisensory nature, outline different degrees of immersion in an erotically active environment and, at the same time, challenge the nature of the framed image. In the first case, echoing Jonathan Crary’s (1990) perspective, the stereoscope is understood as the earliest “obscene” device, in the sense that it primarily has the capacity to redefine the scenic qualities of Albertian perspective vision in favor of the proximity and apparent immediacy of the three-dimensional image. Considering the haptic nature of the stereographic image, this device was particularly suitable for the then emerging Victorian erotic proto-industry, expressing an unprecedented spectatorial form of the

pornographic image with strong implications for the perceptual system of its observers. The second device, the cinema theatre, takes into account the phenomenology of pornographic film with particular reference to the so-called “golden age” (Paasonen and Saarenmaa 2007) of American pornography, and invokes the social and erotic forms produced by the interaction between the bodies of the audience present in the theatre, the ones portrayed in the scenes, and the symbolic body of the film. The third device considers the “anarchic space” (Barba 2021) of installation art, with particular attention to video art and its ability to configure precise perceptual atmospheres (Bruno 2022). The focus in this part of the thesis is on those artistic practices that, between the 1970s and 1990s, centered their research on sexuality and pornography, defining a specific form of erotic atmosphere through the deconstruction of the cinematic image, its expansion in the form of the installation and its interweaving with the bodies and identities portrayed in the image.

The second chapter of the thesis — *The Virtual Pornographic* — examines the dawn of cyber-culture, a relevant moment for the technological emergence of virtual reality as we know it today. This historical period, located in the decades between the 1980s and the early 2000s, was immediately associated with political and artistic drives of a feminist and queer nature (Seu 2023). This chapter analyses the main utopian perspectives of early cyberspace, understood as an environment that is theoretically predisposed to overcoming critical categories such as sexuality, gender and race. The chapter will then come to the delineation of contemporary online pornography and its interactions with the latest technologies of the virtual.

The third chapter — *Identity Performance and Technological Systems* — concludes the proposed theoretical path by discussing the agency of the virtual pornographic image in relation to the construction and expression of gender identity. VR pornography could

potentially constitute an unprecedented stage for those playful practices of sexual and bodily experimentation that are at the basis of the constitution of the physical, gendered and sexual self and, simultaneously, organize strategies for resisting the normative “contortion” of non-conforming subjects. In the context of queer phenomenology, Sara Ahmed (2006) has introduced the concept of the “contorted body” to describe those cultural corporealities beyond the “straight line”, forced into the compulsory enclosures of the heterosexual matrix. Following the postural metaphor introduced by Ahmed, this part of the thesis focuses on queering strategies through which the fruition of VR pornography can make our headset a “disorientation device” (Ahmed 2006, 171) that allows forms of genital experimentation along with a new form of virtual gendered performativity. Referring back to the long-standing debate on the possible agency of porn to shape and influence sexualities and politics, this thesis finally questions whether VR technologies as well as the characteristics of environmental images define new perspectives for contemporary pornographies: are they part of a broader system of control and capitalization of bodies and identities or rather media forms with a strong expressive power and the capacity to queer the gendered proprioception?

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Notes

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Insensibilité écologique et crise de la présence dans la condition post-médiale: une approche critique aux techno-esthétiques des éco-médias. Entre cinéma et réalité virtuelle

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La sensibilisation aux questions liées à la crise écologique est un point de tension entre deux termes: d'une part, les données scientifiques fournies par le Intergovernmental Panel on Climate Change et communiquées pendant la Conférence annuelle des Parties (COP); d'autre part, leur réception et métabolisation par les institutions et la société globale. Parmi les tentatives visant à favoriser une convergence entre les deux termes, un tournant a été marqué par la médiation de la découverte du trou dans l'ozone grâce aux images satellitaires de la NASA, qui ont produit un impact considérable sur la visualisation du problème, en comparaison avec les graphiques élaborés par la communauté scientifique. Ces dernières années, dans le cadre du débat concernant le réchauffement climatique et le déséquilibre des écosystèmes terrestres, on a assisté à une circulation croissante des images, à travers des dispositifs médiatiques qui montrent les effets de l'activité anthropique sur la Terre. Cependant, ces images ont produit des réactions contrastées: d'une part, on a constaté l'apparition de ce que on appelle "éco-anxiété" et de la solastalgie; d'autre part, on a relevé une carence dans la compréhension et la perception des effets du changement climatique, souvent

attribuée à des défauts dans la communication de la crise.

À partir de ces considérations, la présente recherche vise à mener une enquête sur le phénomène de l'insensibilité écologique avec, comme perspective, la manière dont les régimes de médiation à l'ère postmédiale contemporaine (Eugeni 2015) contribuent à induire ou à atténuer un tel phénomène. L'objectif principal vise à mettre en évidence les causes directes et indirectes qui nourrissent ce phénomène d'insensibilité résultant de l'expérience médiée de la crise et, par contraste, stimulent une conscience écologique à travers l'utilisation d'images.

Du point de vue méthodologique, la recherche met en dialogue les théories relatives à la crise de la présence du sujet dans le monde selon une perspective transculturelle, à partir du concept de "deep ecology" formalisé par Arne Naess (1973) et de la réévaluation de la notion de "crise de la présence", élaborée par l'anthropologue Ernesto De Martino (1959), à travers la perspective de l'écocritique. En ce sens, l'objectif est de développer une réflexion transculturelle sur la signification historique, sociale, philosophique et littéraire de l'environnement. Plus récemment, les études françaises ont recueilli l'héritage

écosphique de Félix Guattari (1989), dont le résultat le plus significatif est la formalisation de la philosophie de l'effondrement, ou "collapsosophie" (Servigne et Stevens 2015). Du côté anglo-saxon, on intercepte les stimuli écosphiques dans les théories de Timothy Morton (2013) et Donna Haraway (2016), ainsi que dans les études relatives à l'impact des éco-médias et du éco-cinéma (Rust, Monani et Cubitt 2012 ; 2016). Du point de vue méthodologique, la recherche propose par conséquent une étude qui met en relation l'écocritique, littéraire et philosophique, et l'analyse intermédiaire des narrations audiovisuelles qui concernent la crise contemporaine du lien entre humanité et nature, et de manière enactive, et à travers les théories de l'évolutionnisme des sciences biologiques.

Le corpus principal de la recherche se focalise sur l'analyse des productions éco-filmiques et éco-immersives, tant d'un point de vue esthétique que narratologique, dans le but de détecter les éléments qui peuvent accroître ou inhiber la sensibilité écologique. En ce sens, la recherche est fondée sur une sélection de longs métrages de fiction, de documentaires et d'expériences immersives identifiés au sein des contributions récentes sur l'éco-cinéma et, en général, sur l'écocritique appliquée aux études filmiques et médiatiques. La sélection de longs métrages est organisée selon trois domaines qui sous-tendent différents récits de la crise, qui comprennent la science-fiction et 'l'effet cadre' des questions écologiques, les choix de représentation des écoterroristes, le sous-genre de l'éco-legal-thriller. Les documentaires sélectionnés sont les plus récentes, ce qui est nécessaire pour ne pas tomber dans l'obsolescence des données, lesquelles sont renouvelées par la recherche scientifique. Les expériences immersives sont des vidéos à 360 degrés qui exposent les principales conséquences de la crise écologique, comme l'extinction des espèces, la fonte des glaciers, la sécheresse et le réchauffement climatique.

Enfin, la recherche inclut une partie expérimentale relative à l'utilisation en réalité

virtuelle d'expériences concernant la crise des écosystèmes terrestres par un échantillon d'utilisateurs sélectionnés. Les objectifs de cette phase de la recherche, menée à travers des méthodes appropriées, sont la vérification empirique de la capacité de la réalité virtuelle à former une conscience écologique et une réflexion sur les potentialités et les limites des médias immersifs dans le cadre d'une écologie des médias d'empreinte éactive (Varela, Thompson et Rosch 1991).

Notes

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