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On the razor's edge: the (virtual)

image between illusion and deception

by Pietro Conte and Lambert Wiesing Immersion

Presence

Virtual reality

Representation

Hallucination



Edited by Pietro Conte and Lambert Wiesing

emulation, and hyper-realism

Introduction

On the razor's edge: the (virtual) image between illusion and deception [8]

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Illusion or delusion?

Were novelists and filmmakers right in fore-shadowing the advent of 3D virtual worlds that would exist parallel to physical reality, where people could interact with each other through the full immersion of all their senses, possibly losing awareness of the artificial nature of those environments? Indeed, what has been imagined in countless science fiction narratives, dystopian movies, and TV series seems to be turning into reality to an increasing

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degree: a pictorially generated environment that is not perceived as such.

A modern incarnation of René Descartes's evil demon thought experiment, the brain-in-a-vat hypothesis famously describes a scenario in which a mad scientist might remove a person's brain from the body, place it in a vat of life-sustaining nutrients, and wire it to a computer that feeds it with electrical stimuli identical to those the brain normally receives. In the words of Hilary Putnam, who in 1981 made the story popular and provoked much heated debate among philosophers of mind, that would cause the individual "to have the illusion that everything is perfectly normal." If, for instance, the person tries to raise her hand, the feedback from the machine will make her immediately "see" and "feel" the hand being raised. The evil scientist can cause the victim "to 'experience' (or hallucinate)" any situation he wishes. He can even erase the memory of the brain operation so that the victim will seem to herself to have been born and always lived in the digital environment.²

More recently, the idea of a simulation so powerful that people caught in it would take it for reality in the flesh has resurfaced in notions such as Peter Weibel's "future cinema," according to which the next coming cinematographic apparatuses, thanks to miniature neural implants and interfaces that stimulate the brain directly, will be able to bypass the sensorium, thus acting immediately on the neural networks:

Instead of trompe l'oeil, the next step might be trompe le cerveau [...]. There would be perception without the senses, seeing without the eyes. [...] Advances in neurophysiology and cognitive science give rise to the hope that future engineers will succeed in implementing these discoveries in neuronal and molecular machines that

² H. Putnam, "Brains in a vat," in *Reason, Truth and History* (Cambridge: Cambridge University Press, 1981): 1-21, 6.

transform the technology of simulation to deceive the eye into a technology of stimulation that in turn deceives the brain.³

One is certainly free to disbelieve such prophecies and exercise healthy scepticism. And yet, given the unprecedented rapid pace of technological innovation, one cannot help but recall Louis Marin's argument that every representation, in order to present itself "in its function, its functioning, and, indeed, its functionality" as representation, must include a frame that keeps the image-world clearly separated from the real world: "The more 'mimetic' transparency is manifested seductively, [...] the less the mechanisms are noticed, the less they are acknowledged."

The dream, or perhaps nightmare, of a medium achieving absolute transparency and of a user experiencing total immersion has yet to come true, and it will perhaps never do so. However, it is (certainly not only, but nevertheless in a particularly powerful way) the new advancements in the field of simulation, illusion, and immersion that have contributed powerfully to determining the way we think about today's media landscape. The evolution of technological equipment goes hand in hand with the evolution of the techno-cultural – which also means political – dispositif that supports and even guides them. One need only consider the way in which virtual reality is nowadays hailed as the last medium, capable of immersing the user in someone else's shoes, teleporting her to some other place, making her feel as if she were really "there."

³ P. Weibel, "The intelligent image: neurocinema or quantum cinema?," in J. Shaw, P. Weibel, eds., *Future Cinema: The Cinematic Imaginary after Film* (Cambridge MA-London: The MIT Press, 2003): 594-601, 599.

⁴ L. Marin, "The frame of representation and some of its figures" (1988), trans. C. Porter, in *On Representation* (Stanford: Stanford University Press, 2001): 352-372, 353.

Being there: debunking the rhetoric

Such "being there" has become the catchphrase of virtual technologies, and it often goes along with an over-romanticization of the idea of immersion, according to which immersive environments would grant the experiencer a *perfect* illusion by making the medium disappear. This would differentiate the new forms of illusion from traditional *trompe l'œil*:

The concepts of *trompe l'œil* or illusionism aim to utilize representations that appear faithful to real impressions, the pretense that two-dimensional surfaces are three-dimensional. The decisive factor in *trompe l'œil*, however, is that the deception is always recognizable; in most cases, because the medium is at odds with what is depicted and this is realized by the observer in seconds, or even fractions of seconds. This moment of aesthetic pleasure, of aware and conscious recognition, where perhaps the process of deception is a challenge to the connoisseur, differs from the concept of the virtual and its historic precursors, which are geared to unconscious deception.⁵

The concept of a virtual reality that could replace the realm of physical existence has been criticized for resting upon an idealization of total immersion that would lead to an illegitimate equation of illusion with delusional hallucination. In particular, the assumption of a pictorial environment so hermetically sealed off from anything extraneous to the picture that the observer (or rather the experiencer) feels completely submerged in it is highly problematic. Leading scholars in game studies such as Katie Salen and Eric Zimmerman have labelled this assumption "the immersive fallacy," polemically referring to the idea that

⁵ O. Grau, *Virtual Art: From Illusion to Immersion* (Cambridge MA-London: The MIT Press, 2003): 15-16.

the ability of a media experience to sensually transport the participant into an illusory reality could reach a point where "the frame falls away so that the player truly believes that he or she is part of an imaginary world." Emblematically expressed in the concept of the holodeck (a fictional technology that made its first appearance in Star Trek: The Next Generation and consists in a holographic room where a simulation including sight, sound, touch, smell, and taste is indistinguishable from physical reality), the immersive fallacy encourages people to buy into new forms of magical thinking and overlook that virtual reality is but "a medium of representation that the brain will process in its appropriate cultural context, just as it has learned to process speech, writing, photography, or moving images."7

Such warnings against a cyberpunk-flavoured idea of immersion point towards a different interpretation. As is made evident by the etymological presence of ludus in the Latin word inlusio, "illusion" originally refers to a lusory attitude. Being elicited by the perception of physical representational artefacts, texts, or performances, the aesthetic illusion is to be distinguished from both hallucinations and dreams. Moreover, it differs from delusions in that it is neither a conceptual nor a perceptual error, but a complex phenomenon characterized by "an asymmetrical ambivalence"8 that results from its positioning halfway between the two poles of rational distance (i.e., disinterested "observation" of an artefact in its fictional nature) and immersion (or in Kendall Walton's words, "participation"9) in the represented world:

⁶ K. Salen, E. Zimmerman, Rules of Play: Game Design Fundamentals (Cambridge MA-

London: The MIT Press, 2004): 451.
7 J. H. Murray, "Virtual/reality: how to tell the difference," *Journal of Visual Culture* 19, no. 1

<sup>(2020): 11-27, 20.

8</sup> W. Wolf, "Illusion (aesthetic)," in P. Hühn et al. (eds.), *Handbook of Narratology* (Berlin-New York: de Gruyter, 2009): 144-160, 144.

⁽Cambridge: Harvard University Press, 1990): 240-289.

When we play a game, we feel engaged and engrossed, and play seems to take on its own "reality." This is all certainly true. But the way that a game achieves these effects does not happen in the manner the immersive fallacy implies. A game player does become engrossed in the game, yes. But it is an engagement that occurs through play itself. As we know, play is a process of metacommunication, a double-consciousness in which the player is well aware of the artificiality of the play situation. 10

Contrary to David Hume's conviction that all illusions should be given up to the flames,11 the contemporary immersive media and apparatuses make it necessary to disentangle the word "illusion" from its negative connotation as "deception." From this perspective, an illusion is about something that is present but not real: it marks the presence of something while at the same time making it appear as "unreal." The key term for describing this dichotomic phenomenon is conflict - a term that in image theory goes back to Hippolyte Taine and Edmund Husserl. 12 Every perception rests upon the awareness of being there and being present, but only image perception implies a self-relativisation of real presence: the perception of every image generates artificial presence. For what is visible in the picture - one may call it, using Husserl's vocabulary, "picture object," or in more analytical tradition "content" or "representation" - is relativised in its character of presence by a conflict (Widerstreit). This happens in two different ways: in the case of traditional images through the visibility of the grounding materiality of the image, the visibility of the real environment and, last but not least, through the

¹⁰ K. Salen, E. Zimmerman, Rules of Play: 51

¹¹ D. Hume, *An Enquiry Concerning Human Understanding* (1748), sect. 12, pt. 3. (Mineola, N.Y.: Dover 2004): 107.

¹² On this, see L. Wiesing, *Artificial Presence. Philosophical Studies in Image Theory* (2005), trans. N.F. Schott (Stanford: Stanford University Press, 2010): p. 53.

visible frame. These forms of perceptible conflicts tend to disappear when an image expands into its surroundings, thus becoming an artificial "environment." Yet even in the case of simulations and hyperrealistic worlds, the condition for speaking of images at all is that here, too, there must be an experience of conflict. That is the point: in the case of immersive environments, the conflict is (or, if we are realistic, should be) given through the knowledge of being in a simulation. The knowledge that something experienced is "not real" creates image-generating conflicts, just as traditionally the frame did. This is grasped when it is said: images produce artificial presence.

This calls up numerous questions that the present issue of the *AN-ICON* journal aims to address: how is such a conflict between knowledge and perception to be explained, and is it to be regarded as a new form of aesthetic illusion? On the one hand, it is necessary to distinguish the conflict phenomena of the new forms of immersion formation empirically in their technology from those of traditional images. On the other hand, the various forms of seeing artificial presence must always be categorically differentiated and determined in their respective specificity. Is it a case of an unconscious illusion brought about by a false perception, or is it rather a matter of a lustful, playful attitude adopted in a special kind of illusory relationship? What is the difference between illusion, deception, and hallucination? How does an illusion become a delusion?

As if it were not complicated enough: the description of a virtual environment faces the problem that it is a double form of illusion building. On one side, this is the mostly solely themed illusion that people in simulated and immersive virtual environments have a strong feeling of presence (place illusion) and react to what they perceive

¹³ T. Koblížek, ed., *The Aesthetic Illusion in Literature and the Arts* (London: Bloomsbury, 2017).

as if it were real (plausibility illusion). 14 In doing so, however, they are fully aware that they are not "really" there and that events are not "actually" taking place. Yet as relevant as this illusion is, the attention it receives should not induce us to overlook the fact that, on the other hand, there is a second form of illusion formation that is not present in the many precursors of immersive images (such as the stereoscope and the panorama). This illusion of hyperrealism does not just concern what is seen, but also the one who sees. It is the change in the way the viewers experience themselves in relation to the image: virtual reality has the power to make users and beholders feel like they own and control a body (body ownership illusion) that can look very different from their biological one. Here, illusions are created that do not affect what one sees but rather the one who sees something. One might want to think about whether there were not already precursor experiences in this respect in watching films, but it is only in the experience of virtual realities that this phenomenon seems to take on a radicality that brings about new forms of transformation of self-representation and changes in our attitudes to ourselves or to other people, which can be seen, for example, when implicit racial and gender biases are changed - in the best case reduced - in the experience of immersive virtual realities, or health problems and mental disorders are alleviated.¹⁵

Against this background, the present issue of the AN-ICON journal poses equally technological, aesthetic and decidedly moral questions. What are the limits of virtual reality and the possibilities it offers for empathising

M. Hofer et al., "The role of plausibility in the experience of spatial presence in virtual environments," *Frontiers in Virtual Reality* 1, no. 2 (2020), https://doi.org/10.3389/frvir.2020.00002; M. Slater, "Place illusion and plausibility can lead to realistic behaviour in immersive virtual environments," *Philosophical Transactions of the Royal Society B: Biological Sciences* 364, no. 1535 (2009): 3549-3557.

¹⁵ T.C. Peck et al., "Putting yourself in the skin of a black avatar reduces implicit racial bias," *Consciousness and Cognition* 22, no. 3 (2013): 779-787, https://doi.org/10.1016/j.concog.2013.04.016; F. Scarpina et al., "The effect of a virtual-reality full-body illusion on body representation in obesity," *Journal of Clinical Medicine* 8, no. 9 (2019), 1330, https://doi.org/10.3390/jcm8091330.

with others and fostering virtuous and socially adaptive processes of imitation? How can we debunk the rhetoric (which has ethical, social, and political significance) behind the celebration of virtual reality as the "ultimate empathy machine?"16 The field of these questions becomes all the larger and more unmanageable when it is noted that the new forms of digital immersion education, while not necessary, are also usually associated with new forms of interaction education. This raises questions that are often psychological. Is interactivity necessary to create illusion? Does the multisensory quality of the interaction affect the overall effect of illusion? Considering that immersive virtual environments are often inhabited by users' surrogates, do avatars, in their extensive phenomenology, enhance or diminish the degree of illusion? What is the relationship between illusion and the "style" of the image? Is hyperrealism an important element to enhance illusion or, as Gordon Calleja claims,¹⁷ only an element among many others?

The present issue

A first reflection on these topics is offered by Salvatore Tedesco in his essay "Imagination and Körperzustand," which provides a historical overview of how the concept of illusion was understood in the Eighteenth Century by Moses Mendelssohn. Through a critical examination of Johann Georg Sulzer's analysis of the passage from the state of thinking [Nachdenken] to that of feeling [Empfinden], Mendelssohn elaborated further on the contrast between the state of the body and the faculty of knowledge – a contrast that led the German philosopher to define illusion not merely in terms of common deception, but rather as a

17 G. Calleja, In-Game. From Immersion to Incorporation (Cambridge MA: The MIT Press, 2011).

¹⁶ C. Milk, "How virtual reality can create the ultimate empathy machine," TED conference, March 2015, https://www.ted.com/talks/chris_milk_how_virtual_reality_can_create_the_ultimate_empathy_machine.

form of *conscious* illusion. This is made clear in the correspondence with Gotthold Ephraim Lessing on the nature of tragedy, where great emphasis is put on so-called "aesthetic" or "poetic" illusion, considered as the instrument through which the dramatic poet is allowed to induce in the audience – contrary to what Aristotle and his modern followers maintained – even the most violent feelings, on condition that the reader or viewer is under the *aesthetic* effect of the illusion. The latter is characterized by a peculiar mismatch between sensitivity and the higher cognitive faculties: regardless of how deeply immersed one may be in sensory experiences, one still retains awareness of being confronted with a virtual, fictional world. Precisely this contrast harmonization is the hallmark of aesthetic experience as such.

The anthropological relevance of aesthetic illusion can be grasped by describing it in terms of play, and more specifically pretend play. By referring to both classical and contemporary studies on play and playfulness by scholars from many diverse scientific fields (including among others Sigmund Freud, Jean Piaget, Roger Caillois, Donald Winnicott, Lev Vygotskij, Gregory Bateson, Brian Sutton-Smith and William Corsaro), Anna Bondioli's article offers a reading of illusion as a non-imitative form of play. Far from limiting themselves to reproducing the activities that adults undertake in the surrounding world, children distort reality in a creative way by performing actions that differ from those already seen and known. Children collect elements of the external world and use them in an inter-subjective process of co-construction of meanings in order to open up new possible worlds, without hallucinating: they know for sure that "this is play." 18 From this perspective, the semantic field of illusion shifts from the negative meaning of pretence as lying, mocking, or simulating, to the positive

¹⁸ G. Bateson, The Message "This Is Play" (Princeton: Josia Macy Jr. Foundation, 1956).

notion of pretending meant as a poietic activity of modelling, building, and giving form. In play, the two cognitive frames - "this is the real world" and "this is the fictional world" - are not to be conceived as completely separate. Players move on the threshold between physical reality and the peculiar (un)reality of fiction. Play isn't real - it is, indeed, "pretend" - but this does not mean it is false. If it were (that is, if it lost the link with the meanings that objects, actions, and events represented during the playful activity denote in the "real" context), it would lose its significance. Yet this is not the case: play (similar in this respect to the poietic use of language in the creation of metaphors) allows the participants to put together things that do not belong to the same category, thereby opening up the possibility to generate new references and meanings that go beyond the logical contrast between the "real" and the "imaginary," between the "true" and the "possible," between "believing" and "not believing."

The ambiguity surrounding the notion of illusion has been made all the more evident by the theoretical reflection on the nature and power of contemporary images. Vilém Flusser's thought, which is the subject of Francesco Restuccia's essay, provides an emblematic example. Illusion is first described as a form of deception, with dangerous and deplorable effects. This is especially true when technical media – starting from photography – are employed in a way that aims to conceal their nature as artefacts. In this sense, the most illusionary images are those that appear transparent and present themselves as objective reality, thus bringing about a new form of "idolatry" or "hallucination:" "Instead of representing [vorstellen] the world, they obscure [verstellen] it." This dangerous reversal of imagination happens when we do not recognize a medium,

¹⁹ V. Flusser, *Towards a Philosophy of Photography* (1983), trans. A. Mathews (London: Reaktion Books, 2000): 10.

especially a visual one, as such. In this sense, technical images are the most deceiving, because their mechanical, automatic production seems to grant a "noninterventionist objectivity"20 freed from human and cultural interference. But this objectivity is deceptive, because technology is a human product, therefore always culturally biased. In Flusser's work, however, a second interpretation of illusion is given that unveils its possible use as a precious artistic and epistemic tool. In Filmerzeugung und Filmverbrauch, the notion is introduced to understand the filmic experience as a modern version of Plato's cave. While sitting in the dark space of the movie theatre, people ignore the world outside the "cave." They do so not because they are deceived by the moving images projected on the screen in front of them. On the contrary, they choose to abandon themselves to the fascination of the medium. They do not want to be freed from the enchantment: their illusion is voluntary, self-imposed, like a specific form of fiction or make-believe play. When illusion is conceived in a positive way as a practice of sense-making, Flusser replaces the German term täuschen ("to deceive") with vortäuschen (to simulate, to feign). In this sense, simulation is not about producing a copy [Abbild], it is about shaping a model [Vorbild]. Technical media can allow for a new, "experimental" approach to image making: one inserts a certain input, sees what the outcome is, and then changes the input so as to achieve a different result. According to Flusser, this is the greatest potentiality of virtual simulations: they allow us to experience what until now we were only able to calculate; and vice versa, they allow us to calculate and control experiences that until now we could only vaguely imagine.

The peculiar experience that contemporary virtual environments grant access to lies at the core of Francesco Zucconi's essay, which follows an anachronistic path

²⁰ L. Daston, P. Galison, Objectivity (New York: Zone Books, 2007).

through art history and theory by taking some of Caravaggio's paintings as an anticipation of the invention of gyroscope technology that made possible the first immersive experience in the history of Western painting. Building on Frank Stella's interpretation of the Italian master's "realistic illusionism"21 and reformulating Michael Fried's concepts of "absorption" and "theatricality" 22 through the categories of "immersion" and "specularity," Zucconi focuses on the double effect of attraction and distancing as the fundamental structure of the experience of virtual reality cinema. On the one side, as I put on a VR headset, I find myself "teleported" to the simulated environment: I feel "there." 23 On the other side, there is always something that reminds me that I am just inhabiting a digital milieu: a bodily, cognitive, and affective frame brings me back to the "here" of physical reality. Such experience of bilocation²⁴ is most often conceived of as a negative aspect of even the most sophisticated (and expensive) immersive apparatuses currently on the market – a limitation that, according to many techno-deterministic enthusiasts, will be overcome in some unspecified future, when total immersion will be eventually achieved. Arguing against this view, Zucconi maintains that such ambivalent and even paradoxical coexistence of attraction and distancing should be better understood as an intrinsic quality of cinematic virtual reality experiences as such. This medium-specific trait, in turn, can help debunk the bombastic rhetoric that hails virtual reality as the "ultimate empathy machine" capable of making the user not only understand but also directly experience someone's

F. Stella, *Working Space* (Cambridge-London: Harvard University Press, 1986): 11.

M. Fried, *Theatricality and Absorption: Painting and Beholder in the Age of Diderot*

⁽Chicago-London: University of Chicago Press, 1983).
23 See among others M. Lombard et al., Immersed in Media. Telepresence Theory,
Measurement & Technology (Cham: Springer, 2015); M. Lombard, Th. Ditton, "At the heart of it
all. The concept of presence," Journal of Computer-Mediated Communication 3, no. 2 (1997),
https://dx.doi.org/10.1111/j.1083-6101.1997.tb00072.x.

A. Pinotti, "Staying here, being there. Bilocation, empathy and self-empathy in virtual reality," *Bollettino Filosofico* 37 (2022): 142-162, https://doi.org/10.6093/1593-7178/9657

other pain and worries. Through reference to Susan Sontag's critical theory of photography, Zucconi challenges the simplistic use of notions such as those of "empathy," "compassion," and "immersion" which accompanies the launch of many virtual reality projects, holding instead that the (alleged) absolute transparency of the medium is not only unattainable but not even desirable. From this perspective, the co-presence of illusionistic and counter-illusionistic effects is not to be interpreted as a weakening of the experiential and testimonial value of immersive experiences. On the contrary, it paves the way to a conscious ethical and political approach to virtual reality, according to which the most interesting aspect of such technology is precisely its capacity to produce both identification and estrangement, thus making viewers feel at the razor's edge between presence and absence, between "here" and "there," between empathizing with others and being aware that we can never truly walk a mile in someone else's shoes.

If virtual reality as it exists today struggles to make us experience things from the perspective of another human being, can it allow us to feel what it is like to be a non-human creature? Philippe Bédard's article tackles this question by critically examining the fundamental anthropocentrism of virtual reality's dominant mode of experience. Designed as it is around a technological apparatus such as the head-mounted display, which is tuned to the human sensorium, and more in particular, to the subjective qualities of human vision (its binocularity, its "egocentric" perspective, and the individuals' ability to move their point of view through six degrees of freedom of movement along three dimensions), the medium of virtual reality is also intrinsically anthropocentric. This, in turn, seems to rule out from the outset the possibility of bypassing our perceptual habitus by using immersive virtual environments as a tool for

exploring and understanding how non-human (or post-human) beings exist in, and make sense of, a version of the world that is completely different from ours: as Ian Bogost puts it, "when we ask what it means to be something, we pose a question that exceeds our own grasp of the being of the world."25 This does not mean, however, that virtual reality cannot help us imagine what the world might look like to a different being. In Bédard's essay, nonnormative, artistic uses of immersive technologies are described that encourage the user to imaginatively explore what the Umwelt of a mosquito, dragonfly, or even a tree might appear. Particular attention is paid to the fact that the induction of illusory ownership of, and agency over, a virtual body does not require a fake, hyperrealistic appearance of the avatar; factors like first-person perspective, sensorimotor coherence, multisensory feedback, and the possibility to interact with the virtual environment play a much greater role.²⁶ This opens the door to artistic experimentation with bodies that do not have human (visual) appearance. The illusory ownership over implausible digital bodies makes it possible for virtual reality artists to produce immersive experiences that facilitate the users' (temporary) engagement in a foray into non-human worlds, notwithstanding the fact that they remain perfectly aware of the impossibility to perceive the environment differently from what our sensorium gives access to.

The idea that analogue and digital immersive devices could be used to expand our sensory knowledge is key for their commercial success. As Marcin Sobieszczanski shows, marketing strategies that pass off virtual reality as the perfect machine to make dreams come true are common. After being applied to cinema, such "oneiric"

²⁵ I. Bogost, *Alien Phenomenology, Or, What It's Like to be a Thing* (Minneapolis: University of Minnesota Press, 2012): 30.

²⁶ M. Slater *et al.*, "Inducing illusory ownership of a virtual body," *Frontiers in Neuroscience* 3, no. 2 (2009): 214-220, https://doi.org/10.3389/neuro.01.029.2009.

interpretation now tends to assimilate the immersive experience granted by increasingly sophisticated head-mounted displays to hallucinatory phenomena.²⁷ By sketching out a history of some classical theories that have drawn a comparison between dreams and the "unreal" dimension of the image, Sobieszczanski concentrates on the scientific debate around the nature of illusory phenomena in order to disclose the heuristic potential of the metaphor of virtual reality as hallucination. Highlighting both similarities and dissimilarities between the cognitive mechanisms underlying perception (or perception failure) in hallucinatory states and perception in immersive environments provides an interesting intellectual tool to make a cultural practice evident that is deeply rooted in the human understanding of image-making as the attempt to cross the boundaries that keep the physical world separated from the pictorial world.

One of the biggest challenges this attempt must face is providing, within the virtual environment, multisensory and synaesthetic experiences comparable to those of everyday life. Traditionally, so-called distal senses (vision and hearing) have often been considered more suitable than proximal senses (touch, taste, and smell) to experience images, due to the assumption that genuine aesthetic experience would necessarily imply distance and disinterestedness. Yet the new digital and immersive mediascape calls for going beyond a merely visual or audio-visual way of experiencing the image: when pictures turn into environments, a reorganization of the whole sensory experience is required. Valentina Bartalesi and Anna Calise's contribution deals with this issue by examining the current struggle to include haptic technologies within immersive projects developed by different cultural institutions. Indeed, touch

²⁷ On this, see G. Grossi, *La notte dei simulacri. Sogno, cinema, realtà virtuale* (Milan: Johan & Levi, 2021).

seems to resist virtualisation: being the sense that, historically and theoretically, has carried the burden of proof on "true reality," it appears a priori unsuited for illusory environments. Proof of this would be that, while haptic technologies are certainly useful to allow users to "touch" - if only virtually - precious artefacts that could not otherwise be touched, they nevertheless present both a qualitative and quantitative deficit compared to the human haptic sensitivity in physical reality: the illusion of touch would be in fact better described as an illusionary touch. However, haptic technologies do not need to be designed to mimic the original functions of touch. Rather than merely attempting to make them replicate the touching experience, programmers and developers can exploit their illusory potential in non-hyperrealistic ways, focussing on the power of haptics to elicit emotions. By reviewing some recent case studies, Bartalesi and Calise show how haptic technologies can enrich our cultural and aesthetic experience of artefacts, offering medium-specific opportunities that neither physical objects nor printed replicas - no matter how accurate they may be - could elicit.

The blurring of the threshold between physical reality and virtual reality is also at the centre of Yizeng Zhang's essay, where the case study of digital fashion is investigated in its function of giving birth to a completely new form of materiality. While creating their clothes, fashion designers have been limited so far by the available fabrics (and their price), the manufacturing technologies at their disposal, and, of course, the laws of physics. The so-called metaverse is in this respect a game changer. Using virtual avatars and models to sell clothing and accessories made of code instead of cotton or wool, designers are free to imagine any type of garment or fabric and to "manufacture" products never seen before. Given that our everyday lives have moved online so much that a new term "phygital" was

coined to indicate the increasing blending of digital experiences with physical ones, it is a safe bet that digital fashion will become a vital category for every brand's business model, being more and more sold as NFTs, showcased on virtual catwalks and in virtual showrooms, or worn by both physical and virtual influencers on social networks. Under the auspices of Gernot Böhme's philosophy, Zhang takes on the notion of atmosphere to reflect on the "stage values" of digital fashion, that is, on its ability to emancipate from the material function of garments and to produce new forms of self-presentation. Digital garments are thus intended as experiences whose value arises from the atmosphere they are able to generate. By tracing such atmospheric production across three sites of its exhibition (the e-commerce website, social media, and the runway show), Zhang shows how digital fashion contributes to the construction of a new kind of affective milieu. If the generation of such atmospheres can be said to be just an illusion or, rather, if the illusion itself can be conceived of as providing access to a new reality, is a question that fits well into the thematic section of this issue of the AN-ICON journal.







