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Abstract:

In the territory of post-isms also visuality has been debated in terms of its post condition, where it was essentially associated with the digital era in which images have proliferated to the stage at which everything must be made into an image and is consumed as an image. Such image and information overload and constant alertness have produced a certain "visual extinction" and invisibility, not only as a form of resistance to prevailing visual politics but also as a perceptual and cognitive response to excessive exploitation of (mediated) visuality. In contemporary visual culture the superficiality of the visible supersedes the concerns of pictorial and reduces imaginary and metaphoric power underlying visual form.

Digital media culture has made a fundamental shift in our relation to the external world, sensory perception and, most importantly, in our visual awareness and understanding of images. The new phenomenology of the image decisively altered looking practices, the relationship between the observer and the observed and also cognitive and affective dimensions of images. The image has transformed from representation into a fleeting and instant visual event which is in the ongoing convergence of media no longer ocular-centric. Automated processes of production marked by various image customization tools, accelerated speed and immediacy by which images are produced and distributed changed the concept of creativity and introduced »cut and paste« as a paramount model of image-making.

Tech-aesthetics and cyber visuality not only change cultural and anthropological role of images but also rearticulate the ontology of the image itself, its

ALGORITHMS AND IMAGINATION
Thinking in Images in an Era of Visual Excess

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materiality and the way we experience images. Flusser claimed that whoever is programmed by technical images lives and knows reality as a programmed context. I examine how the algorithmic logic of the programmable (screen) image affects other types of images, particularly focusing on aesthetic, phenomenal and representational properties and distinctions between contingent screen images and other, mainly art image-objects. I argue that egalitarian approach towards images and accessible image-making technologies impede our cognitive abilities to control and process images. This raises further question of our capacity for critical reflection on visual systems and image agency, specifically regarding complex connections between formal, material and technical components and the construction of meaning. A range of issues arising in this framework are to be tackled. Do rapid changes in image technologies (assembling human and nonhuman elements) along with AI make images self-contained and human intervention eventually dispensable? What methods should we use in deciding which images should be archived, interpreted and historicized? And last but not the least, how and if do images in the era of visual commodification relate to imaginary and make possible, as Deleuze woud say, "thinking in images" beyond the legible signs and normative technologies?

Keywords: alghorithms, imagination, media, remediation, allegory, AI image generators, code, data

In the territory of various "post-isms" the concept of visuality has been debated in terms of its post-condition too, where it was essentially associated with the digital era in which images have proliferated to the stage at which everything must be made into an image and is consumed as an image.[1] The concept of image has been addressed across a range of disciplines including media studies, art history, sociology, semiotics, critical theory, neuroscience, cognitive science and others and framed from different philosophical, anthropological and ontological perspectives.[2] From the perspective of intertextual inquiry, the image analysis was no longer identified with art historical debate but was instead relocated to a far more expanded cultural arena of image-making incorporating images of all kinds and origins, mainstream and fine art, still and moving, analog and digital.

One of the most believable claims regarding the role of images is that "the power of images rises in proportion to their capacity to serve us. The more assistance the images offer – by helping with communication, cognition, persuasion – the more powerful they become".[3] So far visual culture, as W. J. T. Mitchell observed, is not just the social construction of vision but visual construction of the social (2005b), and vision as such is a matter of interpretation even more than of perception. By means of incredible potency of image production, manipulation and distribution in global media events and phenomena around us are shaped by social multiplication of images. Computerized image has made a fundamental shift in our relation to the external world, sensory perception and, most importantly, in our visual awareness and understanding of images.

1 'Visual' here addresses the study of images, vision, and visuality, since the term covers both the visual as picture/image and the visual as sensory modality.

2 Looking across a range of domains, disciplines and image practices the question of what is an image cannot provide unambiguous answer nor a general theory (cf. Elkins, Naef 2011). Image is considered an intertextual construction, presented either as a thing or a concept, as an object or a picture, and, in contemporary visual culture, most of all, as a fleeting and ghostly spatio-temporal event. In his essay "What is not an Image (Anymore)?", Krešimir Purgar discusses a possibility to establish a new concept for image that would encompass both a traditional notion of image (image as representation and *tableau*) and image as a mediated visual event (as is the case with virtual images). However, my discussion here tends to focus more on the effect digitalization exerts on visual enunciation and creation of images and on aesthetic cognition, leaving conceptual notions of the image aside.

3 Quoted from the introductory text to the symposium *The Roles of Pictures in society* at the Center for art and media Karlsruhe in 2006. Acquired at https://zkm.de/en/event/2006/01/the-role-of-pictures-in-society.

Tech-aesthetics and cyber visuality not only change cultural and anthropological role of images but also rearticulate the ontology of the image itself, its materiality and the way we experience images.
A great deal of contemporary discussions on image focus on the socio-cultural context of the digital imaging technologies, on the *ontological status* of the *image, on* the apparatus, defining the content and the mode of production which is not put to view, on phenomenological and philosophical issues that are raised. However, in these extensive and fruitful debates understanding the image is more or less abstracted from its visual enunciation. Everyday visual experience is permeated with screen images, which are constantly on the move, variable and exchangeable, and act more as events than representations. The nature of image itself has changed and moved from representation in the direction of "a space for multisensory experience with a temporal dimension" (Grau 2011, 350) which is in the ongoing convergence of media no longer ocular-centric but actively engages other senses.
The new phenomenology of the image decisively altered looking practices, the relationship between the observer and the observed and also cognitive and affective dimensions of images. Digital "image-vehicles" (Warburg) profoundly impact the construction of images and their aesthetic considerations. Having in mind seeing as a trained competence, a skill and ability to detect interesting qualities and observations through visual inspection, I am interested in how hybrid-media experience affect our ability of seeing and making of images. Transmission of images and other information, marked by the shift from physical signs to digital trajectories of information, alters patterns of our perception as well as *visuality* of images. Algorithmic logic of the screen image affects other types of images, particularly their aesthetic, phenomenal and representational properties. In this framework I discuss the changing role of the medium and its relation with images, which is in digital context no longer indexical. New technologies and digitalization have, furthermore, altered the concept of creativity itself and accelerated image-making processes by advancing the exchange of hand-work and material labour for immaterial labour and machinic processes. Consequently has the "promptness" of creation by means of accessible image-making technologies impeded our cognitive abilities to control and process images and intensified a general secularization of the image through visual media.

1. From medium-specificity to "mediumless" images

Understanding the media, both in the sense of a system, and as a mode of expressing and communicating a content, is of central importance in image culture. In modernism artistic medium became a central issue for artists and theorists alike. For the former it was foremost a signifying process including materials, techniques and tools to be explored in new ways in order to generate new artistic possibilities, while the latter understood it as the ontological basis for art, focusing on the ways in which different media function and defining t*he specific characteristics of a particular medium.* Russian formalism exerted a great influence on modern criticism by analyzing an aesthetic value of work and its potential in conveying the meaning. According to Viktor Shklovsky the medium (having literary devices in mind) was crucial for a process of defamiliarization which enabled transformation of experience by differentiating between ordinary usage and poetic usage of language and habitual and poetic "seeing" of the world. The medium in the sense of novel expression and innovative usage of formal devices had the power to affect our perception and endorse defamiliarizing process in which everyday perception could be changed and rendered as "fresh sensation". Formalist concern with the structure of the work and the devices used by the author obscured the external influence and social and cultural meaning of a sign, which were to become a primary focus of its theoretical descendants, Structuralism and Post-Structuralism. Regardless of their differences, both schools of thought shared the focus on the importance of language, be it textual or pictorial, on aesthetic strategies, on semiotic peculiarity and on materiality of a sign. These theoretical inputs foregrounded a major part of modern art aesthetics, focusing on signifying processes and material properties of artwork in the function of expressive semantic tools. It is not surprising that the modernist notion of medium in the sphere of high art coincided with its theoretical discourse in mass media culture. Only a few years apart two canonical texts defining medium were published. In Clement Greenberg's influential essay *Modernist Painting* from 1961 a medium of painting was defined as a self-critical enterprise, addressing only its inherent properties and focusing on the intrinsic qualities of the media of its creation. Marshall McLuhan, on the other hand, in his 1964 book *Understanding Media: The Extensions of Man*, declared that "medium is the message", implying that

the form of a message, be it printed, visual, musical, or else, impacts the specific content and determines the ways in which that message will be perceived. In both cases the form-content interference is revisited, stating that what is *said* cannot be separated from *how* it is said suggesting that the *nature* of the medium was more important than the content of the messages being shared.

The dominance of modernist problematic of medium was challenged in the 1960s with the criticism of pure art form ideology. Revival of hybrid and trans-media artistic possibilities emerged within Conceptual practices, Installation art and video – the shift which was later acknowledged by Rosalind Krauss's introduction of post-medium condition, by which any divisions based on media-specificity and on the intrinsic characteristics of a certain medium are dissolved. From this perspective, the problem of image was no longer primarily its unique and specific materiality within particular material conditions and historical lineage but its cultural and anthropological function and the social use. W. J. T. Mitchell suggests that there are no visual media at all and that all media are mixed media and so far any idea of a pure visual art or a pure medium, should be abandoned (2005a, 258- 260).

Mixing different types of media has had a long history, with the aim of either expanding the limitations of individual medium and its representational conventions, allowing more intensified human interaction with images or merely simplifying the process of creating, but always, in the end, by means of affecting imaginative, sensuous and sematic power of a (materialized) image. Transmediality and mixed media, targeting various senses and incorporating different techniques and formats, have indeed become a basic feature of contemporary visual culture. Digitisation and digitalization have accelerated convergence of media forms and made the notion of the medium-specificity meaningless and obsolete. This loss of media specificity was already anticipated by German theorist Friedrich Kittler (1987) when he observed that the general digitalization of information and channels erases the difference between individual media. Furthermore, digital technology can simulate appearances of other media and emulate the existent media forms. Modernist attentiveness to medium-specificity as the ontological denominator for individual uniqueness of image worlds (particularly in art), has been replaced by the notion of mediumlessness, which denotes integration of media in a total effect by erasing clear distinctions among them.

According to Nicholas Negroponte, medium is no longer the message in a digital world since the message can be rendered in many ways and can have "several embodiments automatically derivable from the same data" (1995, 71) without significantly affecting or changing the content. In abstract embodiments of digitalized content the source medium seems to be of no importance. It is the content that is privileged while the procedures of display are obscure. Digits, codes and programs operate in a non-optical and invisible realm and their object is dematerialized from the perspective of physical body labour. Thereby meaning does not so much lie within material objects and representations but more in the production and distribution of information.

McLuhan anticipated the role of computational machines before the digital age by noting that automated systems make information the crucial commodity while "the solid products are merely incidental to information movement" (*1964 [2001], 207)*. In congruence with that, Les Levine wrote in his artist's statement for *Software* show: "The experience of seeing something first hand is no longer of value in a software controlled society, as anything seen through the media carries just as much energy as first hand experience [...] In the same way, most of the art that is produced today ends up as information about art" (Burnham 1970, 61). It has become naturalized that things are effectively *experienced* from their *images.* Levine's insight is here prognostic for the nature of contemporary mediated culture and points to the importance of transmission of events, images and other information, which are by means of mediation no less real than experiencing things in a real physical space or state. Furthermore, art as digital information along with other non-art images have been literally realized in the form of non-fungible tokens (NFT) which can be created, distributed and sold as intangible work, existing beyond the physical world.

Technology has always been closely intertwined with the changes in image production, perception and distribution. Innovative usage of tools and techniques, from human's skilled handling of brushstroke to robotic hand with a paint pen and a software program instructing it to follow a certain pattern (for example, a wall-climbing robot called *Vertwalker* created by artists Julian Adenauer and Michael Haas), expanded creative possibilities for image production. As Stanley Cavell argued for film, medium lies not within its physical material, but by the way in which it represents reality through an (art)form's ongoing re-invention

(Sinnerbrink 2011, 28). From this perspective, the process of remediation was a creative strategy of reinvigorating and refashioning image production, but also a way of problematizing and reassessing "distinctive power" of (an artistic) medium. Through the concept of *remediation*, Bolter and Grusin (2000), argued that all media constantly borrow from other media and thus refashion one another.[4] Photography and painting, for instance, have had a centuries long and close relationship informing each other, which can be traced back to light-borne images of *camera obscura* even before the invention of photography. Photographers attempted to imitate painting by reproducing the subject matter, by staging scenes, making use of soft focus, manipulation of lightning etc. In the 1960s and 70s, at the time when photography was massively used every day, Gerhard Richter began making his celeb photo paintings. He stated that he did not use "photography as a means to painting" but instead used "painting as a means to photography",[5] meaning that he was literally making photography with pictorial means.

We have recently reached the point when creative possibilities of AI generators (such as DALL-E 2) create results that can look either like a drawing, a painting or a photograph by use of text prompts and editing tools to modify images.[6] It has become almost impossible to tell the difference between a photo and a rendering as was recently shown *at a* prestigious Sony World Photography Award *competition 2023, where the prize was given to a* DALL-E generated black-and-white image, entitled *PSEUDOMNESIA: The Electrician*. The very title *etymologically implies a fake, something not genuine, as the idea behind the work was* to find out whether the art system is prepared for AI to enter. *Its author, a* Berlin-based Boris Eldagsen,

4 Bolter's and Grusin's idea of remediation as "representation of one medium in another" (2000, 55) originates in McLuhan, who claimed that "the content of any medium is always another medium" (McLuhan 1964 [2001], 8). For Bolter and Grusin, "What is new about new media comes from the particular way in which they refashion older media and the ways in which older media refashion themselves to answer the challenge of new media". (2000, 15)

5 Gerhard Richter in an interview with Rolf Schön (1972). Available at https://gerhard-richter.com/en/quotes/mediums-3/photography-16.

6 DALL·E is AI image generator which was introduced in 2021 by OpenAI. DALL·E 2, developed a year later, presents itself as an AI system that can create realistic images and art from a description in natural language. Its edit features enable changes within a generated or uploaded image, including creating large-scale images in any aspect ratio and, taking into account the image's existing visual elements, add new visual elements in the same style and transforming subject matter and content in new directions. Available at https://openai.com/dall-e-2.

rejected the award on the grounds that the awarded image was not a photography at all, but rather a promptography.[7] He stated that "AI images and photography should not compete with each other in an award like this. They are different entities"[8] (2023). Eldagsen's gesture did not only stir a hectic debate on AI and its ability to fake reality, events and even memory, on its ethics and aesthetics but also on the nature of creativity, on the way images are made and on how AI created content affects authorship.

2. "Cut and paste": Reshaping Imaginary Spaces

We use the Internet today not only as a place of communication but also as an endless archive with a free access to collections of digitized material, in which images, sounds, words and other information temporally and spatially overlap, spread across different platforms and are read one through another, thus producing transitory and changeable layers of meaning that are dependent on personal choices and search commands. On the web fragments of different visual backgrounds, eras and cultures are taken out of primary context and juxtaposed in a single space of display. Such decontextualizations and recombinations, by which objects are detached from the conditions of their authentic meaning so they can enter into new relations and produce new allusions, have become a paramount model of image-making. Our experience of the world is to a great extent prefigured by image-synthesized reality, what reciprocally conditions the way we handle the creation of images. Images are not so much created out of scratch and from internal visual worlds as they are generated from disparate fragments of amalgamated and coded visual tissue of culture. "Cut and paste" digital operations are, as far as the nature of creation is concerned, not new, but are rather technological advancements of much earliear creative processes. In order to better understand the implications of this model of creation, we might briefly look at its historical precursors at the core of modernist avantgarde. Collage and readymade turned out to be particularly inspiring not only for the future developments of art but also broadly, for imaginative and methodological approaches in the construction of image worlds. Both collage and

7 The new term was introduced by Peruvian photographer Christian Vinces, and is being suggested for AI-generated photography.
8 Available at https://nancyfriedman.typepad.com/away_with_words/2023/04/word-of-the-week-promptography.html.

readymade transgressed artistic conventions and exceeded medium singularity by informing art with a wider range of aesthetic, intellectual and technological possibilities and, along the way, changed the idea of what art can be. Following from this, interpretation of art was reconstituted by erasing the differences beetwen fine art and popular, mass media images, between the specific and the quotidian (in the case of collage) and by equating art and a common thing, the elevated and the profane (in the case of readymade). Traditional artistic skill and the concept of the creative act changed with the shift from pictorial expressivness of the artist's hand to a gesture of selection, choice and reinterpretation. Specifically, in the form of the readymade, as John Roberts observed, the link between handcraft and skill was irreconcilably displaced, what further led to linking artistic technique with general social technique, for which increasing incorporation of technology and science into production is characteristic (2007, 2-3). Regardless of the differences between collage and readymade, they both operated on the same logic, by which elements were extracted from the primary context and relocated, thus allowing materials and meanings to gain new purpose. This hybridization of sign systems opened up a strategy of recasting visual codes, which resulted in previously unprecedented iconic and semantic confrontations, creating new tensions between reality and its representation.
Creative models of appropriation, decontextualization and recombination of accumulated visual material, by which images are permanently tranformed into different ones, became aligned with the new postmodernist visual experience. Craig Owens recognized in this experience the "allegorical impulse", for which re-reading and synthesizing fragments rather than creating anew were the core principles of creation. He writes:

> The allegorist does not invent images but confiscates them. He lays claim to the culturally significant, poses as its interpreter. And in his hands the image becomes something other. He does not restore an original meaning that may have been lost or obscured; allegory is not hermeneutics. Rather, he adds another meaning to the image (Owens, 1980, 69).

Postmodernist artists no loger regarded medium as embodiment of the essence of an art form, but introduced the logic of pastiche and juxtaposed disparate visual styles, motives and historical forms in order to

rediscover new possibilities. Leo Steinberg (1972) theorized this change in contemporary world with the concept of "the flatbed picture plane" which he compared to any receptor surface (from tabletops, studio floors to charts), on which objects are scattered and information may be received, printed, impressed, whether coherently or in confusion. For Steinberg this new orientation, "in which the painted surface is no longer the analogue of a visual experience of nature but of operational processes [...] is expressive of the most radical shift in the subject matter of art, the shift from nature to culture".
Operational processes embodied in a flatbed picture plane as a data-based space have been further conceptually employed in Deleuze's writings about (electronic) screen. For Deleuze screen is an opaque surface on which characters, objects and words are inscribed as data. He compares the *screen to instrument panel, printing* or *computing table,* on which

> the image is constantly being cut into another image, being printed through a visible mesh, sliding over other images in an "incessant stream of messages", the shot itself is less like an eye than an overloaded brain endlessly absorbing information: it is the brain-information, brain-city couple which replaces that of eye-Nature (Deleuze 1989, 266-7).

Deleuze in this passage envisions present computerized society, where images are always prefigured by existent representations and cultural paradigms inscribed in our imaginative space.[9] Postmodernist "allegorical procedures" are equally productive in contemporary digitized images, only that they have become accomplished by electronic technologies and smoother.[10]

9 This image shift in postmodern cultural production, in which the model of representation is not so much reality as another image, was described by Fredric Jameson with Plato's allegory of the cave (1988, 20), which has proved to be even more pertinent in the context of the digital age and social media, when our experience is incessantly chained to the surfaces of the screens and framed by the black box.
10 Manovich observed that compositing in the 1990s differed from the logic of the postmodernist aesthetics of the 1980s especially in the aesthetics of smoothness and continuity. As he wrote; "Elements are now blended together, and boundaries erased rather than emphasized. Smooth composites, morphing, uninterrupted navigation in games – all these examples have in common one thing: where old media relied on montage, new media substitutes the aesthetics of continuity" (2001, 142-43).

A computer (here identified with artificial intelligence) is technological embodiment of immensive database brain, in which assembled recordings of reality are stored, while the eye is replaced with a mechanized vision – both, in the sense of a "cultural approach to seeing and thinking" (Burnett 1995, 8) and as a physiological mechanism. This represents a fundamental shift within visual sphere, as imagery can now be produced routinely by means of rendering algorithms and the use of various digital image processing tools.

3. Aesthetics of Algorithms and Analog-Digital Relations

The automated processes of creating images have become aligned with the way our screen-mediated vision is constructed. Ephemeral and fragmented aspects of looking that is adapting to incessant image flow are built into representational order of images. Flusser claimed that whoever is programmed by technical images lives and knows reality as a programmed context. Technical images have impacted different aspects of image-making. My interest here turns on technical, phenomenological and structural implications that represent a fundamental conceptual change for image-making, specifically on the conversion from a picture as material object to digital "immaterial" image coded by a finite amount of binary data. As Manovich observed, in the new logic of computer culture, authentic creation has been replaced by selection from a menu and a library of predefined elements, where the designer in the process of creating a new media object can choose among 3-D models and texture maps, contrasts and colours, sounds, background images, filters and transitions and so on (2001, 124).
The basic difference from physical rendering of images and material traces of analog media is that digital processes are imperceptible and unrepresentational. They cannot be seen nor their singular elements have representational properties in the sense of a value or quality that makes one element of a system different from other elements. Alex Galloway described digital visualisation as data, reduced to their purest form of mathematical values, that exist as number, and, as such, "data's primary mode of existence is not a visual one" (1998, 54), but operates according to instructions expressed in abstract concept of a binary code. In this case, it is filter direction that changes the *pixel* values of an image, a pixel now being a picture element and the basic unit of programma-

ble colour in a computer image.[11] In contrast to physical articulation of material signs in analog formulations, picture elements are here edited, remixed and manipulated by algorithms that on the basis of an input information generate new images. Algorithmic structures are defined as a set of instructions that manipulate information and are executed in a certain order. This process is infinitely mutable, yet nevertheless has a limited range due to a finite number of instruction sequences. Digital creations expand possibilities of recreating physical world experiences in virtual software environment, but at the other end of the spectrum, cultural norms and aesthetic decisions are already encoded in the software itself.[12]

Its infrastructure is essentially mathematical and computational, hence its creativity principle is foremost organizational, based on selection, modification and alteration of information. I will refer here to Deleuze, who, otherwise in the context of abstract painting, wrote about the code: "The code is inevitably cerebral and lacks sensation, the essential reality of the fall, that is, the direct action upon the nervous system". In digital context, constituents of an image are not material units of meaning which give sense to an image. This is contrary to analog images, where sensible qualities of materiality itself have a certain aspect of reality which is conveyed to us by our senses.

As Mark B. Hansen observed, contemporary digital media are incompatible with human sense perception since their computational operational processes are unfathomable and inaccessible for human sensory capacities (2015, 4). Mass data processing of artificial neuronal networks of AI is incomprehensible to human mind and ungraspable by human brain capacity. So, digital media have reopened the question of dichotomy between mind and matter. On the one hand, they distribute qualitative information to our senses through virtual code on screen, which separates our physical space from an uncapturable space that we inhabit virtually. There is no indexical trace. In this regard, perceiving the screen is

11 The phenomenon of this atomization was observed by Gilles Deleuze already in the case of analog electronics when he wrote that "in television there is no space or image either, but only electronic lines" (2013, 331).

12 There is a number of web sites and web-based tutorials, which provide design tips about creating compelling images, set visual trends and offer design resources and graphical tools, by means of which more or less standardized aesthetic idiom of present day popular visual culture is introduced.

an experience of being *at a distance.* Screen images are always intangible and *behind* the screen, we do not approach them by corporeal interaction with another body/object but by embodied mind that encompasses our experience. Mind is the one that arouses the body while the body is catatonic and untouched by its environment nor can it touch and feel another matter. On the other hand, the emotional meaning of touch and physical connection was taken into account when designing electronic devices. Screen experience is now designed to enable a strange coexistence of proximity and distance with the use of haptic interfaces or touchscreens that bridge the gap between flatness of the opaque surface and perceptual depth of on-screen images as well as between sight and touch – only that tactile experience is now invariably uniform when we slide with our fingertips across a cool, smooth surfaces.

Another important aspect of change in the analog-digital relation concerns temporal and spatial dimensions of screen images and our phenomenal responses to them. In the case of static representations (artisanally concieved or technically produced) the image acts as a fixed cut-out that is grasped simultaneously. Here multiple perspectives and elements are presented at once, they are continuous and not divided (like in the case of digital images), while its temporal dimension is virtual, congruent with observational time and evolving concurrently with the movements of our eye across the image and among its separate parts. Conversely, decoding of electronic moving images is different. There are several still images constituting a moving image that we take in sequentially, what simulates the feeling of the image is appearing and disappearing in front of our eyes, just like life. As Jean Mitry noted for cinematic experience: "Whereas the classical arts propose to signify movement with the immobile, life with the inanimate, the cinema must express life with life itself" (1965, 453-454, in Sobchack 1992, 5). Digital technologies further enhance this "alive and real" feature of image experience. They allow for connection of different visual states, still and moving images can suddenly converge and transform one into another. Incorporation of time and movement expands and intensifies the reality effect by the sense of presence and brings a *living* dimension to the image itself. The multimedia approach of digitisation attempts to adapt the representation to all the perceptual and cognitive capabilities of mind. These images are not static representations but take on form of events and environments, which do not refer *to* reality but are perceived *as* reality. Com-

puter graphics has evolved to the stage at which we can no longer distinguish between synthesized 3D objects and scenes and the real world.[13] An interactive software application Photosynth, for example, allows us to "walk" through the depicted space, move around it and even explore off-screen space, as the frame is rendered arbitrary and the image-space changes, without privileging any particular point of view (Uricchio 2011, 29-30). According to Oliver Grau, the media strategy aims at producing "a feeling of immersion and presence (an impression suggestive of 'being there'), which can be enhanced further through interaction with apparently 'living' environments in 'real time'" (2003, 7). The screen image is capable of changing in real time, through sequential scanning that reflects changes in referent. As Manovich continues:

> What this means is that the image, in a traditional sense, no longer exists! And it is only by habit that we still refer to what we see on the real-time screen as "images". It is only because the scanning is fast enough and because, sometimes, referent remains static, that we see what looks like a static image. Yet, such an image is no longer the norm, but the exception of a more general, new kind of representation for which we do not yet have a term (Manovich 2001, 100).

Lisa Cartwright writes about researches in medical imaging, the goal of which is reproducing physiology in the virtual image, in which organs in the body must not only look realistic, but must behave realistically. She observes that the objective of post-visual era is reproducing behaviors and functions, not appearances, but through images nonetheless. This ontological rupture in the concept of the image crucially addresses the problem of the iconic difference, since it subverts the perceptual distance between an archetype/a referent and its representation/image. As Cartwright continues about behavioral simulation in medical imaging:

> This concept also entails integrating the user's senses, the apparatus, and the simulated body, into a system that allows for the

13 The book *Digital Representation of the Real World: How to Capture, Model, and Render Visual Reality* provides a comprehensive insight in the most recent techniques that enable us to technologically recreate the world with a high degree of realism.

> user to experience the sensations he or she generates in the virtual body-object: the user must feel that he or she has pressed, cut through, impacted the virtual body-object as if it were real (Cartwright 1998, 428-9).

When image becomes a "living thing" and a representation is no longer divorced from "a physical reality" – that can be even further surpassed in such a way that "a body is the replica of a body of flesh and bone" (as is the case with clones) – "the reign of the image comes to an end" (Rancière 2010).

Drawing out implications of these observations, image, in a traditional sense, is still associated with a material signifying practice within a frame, which encloses and organizes our visual space. Within this framework, image is used in the sense of a visible thing, a picture that refers to pictorial content depicted, as well as to its imaginary space, and is as such inseparable from the surface. However, digital media in this respect break this rule because the digital format is dematerialized, in a conventional sense of the word. For Edmond Couchot digital images, created and stored as numerical data, are immaterial because there is no longer a medium properly speaking (Deleuze 2013, 321). Intermingling of media and multisensorial experience in excessively visual world prevent us from "seeing" images in the light of their specific attributes. The particularity of pictorial experience is cut loose and arbitrary when the sight is no longer the superior sense in taking in the image but is conflated with non-visual stimuli. The fact of media convergence does not give us the tools to analyze structural and semantic constellations produced by and within images. The analysis of material qualities of the image, of pictorial relations and modalities that generate sensation and meaning are more a matter of art-historical concern and suited to traditional modes of representation.

Due to complex multisensorial impact, *image cannot be divided into* a set of semantically meaningful units nor analysed from the perspective of its semiological specificities. In this respect, multisensorial experience empowers visuality, but also disintegrates it, since it disregards the language of its "specific" field and its signifying practice as a distinct region of visual enunciation. The new image practices are rather tackled in the phenomenological framework of sensation and affect than from the standpoint of analyzing their aesthetic and material aspects, which

open up to poetic and imagistic interpretations on their own autonomous basis.[14]

4. Changing Senses: Immagination Reconsidered

Digital imaging technologies do not only impact the conception of image worlds but also our reception of them by accomodating our visual sensibilities to mediated pictures. In his seminal study *What do Pictures Want,* W.J.T. Mitchell poses the question addressing the nature of vision: "To what extent is vision *not* a learned activity, but a genetically determined capacity, and a programmed set of automatisms that has to be activated at the right time, but that are not learned in anything like the way that human languages are learned?" (2005, 345.). Our daily relations with the bidimensional, flat screen-mediated reality influence our perception of the physical one and the ways we interact with it. Our adaption to rapid delivery and exchange of information in digital media affects our cognitive abilities and among other, significantly diminishes capacity of deep, complex thinking, our capacity to sustain focus and attention span as well as transforms how and to what we pay attention: "Technology tends to produce its own context, indeed its own environment. This environment has become the theater that both attracts our attention and structures it" (Doyle, Roda 2019, 3). Within this multifaceted arena, in which we can inhabit different digital environments simultaneously, the idea of attention itself has reshaped.[15] Once the environment itself becomes an agent of attention, attention is not so much created by that what makes the thing (visually) particular and distinct from its environment, but rather as something with the capacity to keep us alert, affect us and shape our sense of immersion (*Ibid*.). Attention significantly affects our visual thinking in the way how we detect, process and connect visual information with previous experiences and locate

14 It should be noted, however, that the impact of digital aesthetics is present in other representational practices, namely in painting and photography. A particular "digital look" that emerges with the new skills in mastering of digital design techniques is apparent in glossy surfaces, slicky textures, pixelated surfaces, salt and pepper effects, luminous backgrounds with strong contrasts, in artificiality of highly descriptive depictions, curved and viscous forms in which opposites between human and inhuman, natural and artificial conflate.
15 Doyle and Roda summed up attention as the set of phenomena that control our experience of the world and considered it a selective process, that can be directed by selecting relevant information (2019, 9).

them within our existent "visual knowledge".
In the era of image overload and constant information alertness we have reached the point of a certain *visual extinction*, at which images are becoming invisible in their own overpresentness. This is not only a form of resistance to prevailing visual politics but also a perceptual and cognitive response to visual culture as excessive exploitation of visuality. In *L'Image ouverte*, Georges Didi-Huberman (2007) develops an important distinction between the concepts of the visible and the visual. If the first is that what is apparent, obvious, and seen on the surface of an image, the latter refers to something that is seen and responded to but not apparent. Huberman here observes that the superficiality of the visible occludes the visual, and in this way deprives the viewers of the imaginary and their own personal projection into the image.
Technological imaging devices have considerably democratized the spaces of image production, distribution and consumption. By manipulating input data and computer tools anyone can now be the author and not just consumer of images. In an interview after he won the prize for AI created photograph, Eldagsen commented: "For me, as an artist, AI generators are absolute freedom. It's like the tool I have always wanted. I was always working from my imagination as a photographer, and now the material I work with is knowledge".[16] Technologized vision of the world has indeed become synonymous with knowledge, what has reinforced assumptions, as Lisa Parks' notices, "that the world that is 'screened' is the one that is 'known'" (1998, 286). On the other side, high-tech services in image production in everyday use lead to their extreme secularization and commodification. Visual exchange platforms embody mainstream aesthetics of visual representations, which is based on conformity with social norms and offers experiences which are represented as a shared and common meaning.
Automated visual creativity poses a set of questions. For instance, what methods should be used when we perform image analysis, what is the historical lineage against which images should be measured and what are the parameters of visual assessment when the medium is no longer the question of relevance and the grounding of aesthetic perception? In the mesh of imagery (in digital and physical environments alike)

16 Available at https://www.scientificamerican.com/article/how-my-ai-image-won-a-major-photography-competition/.

and from the viewpoint of antrophological and cultural terrain, where images are equalized, doubts are raised about what to choose and interpret. What is worth of our particular attention due to its transformative impulse and impact on our perceptual sensibilities and cognitive horizons, and what images should be archived and historicisized? And last but not the least, should digitally produced images, from the perspective of art history, establish its own distinct discipline (Bentkowska-Kafel 2015, 59; Vaughan 2005)?

Despite the fact that human creativity has long been divorced from handcraft and skill, our perception is still grounded in the body that has not yet adapted to the pace of digital revolution. According to Merleau-Ponty, the world is perceived within the lived-body and his phenomenological understanding of image (namely in the context of painting) stemmed from the manner in which this imprint of the world was expressed through the actions of the body, from a hand tracing the line, a brush stroke, colour patch on the surface, from all the presentational immediacy and material foundation, in the sense of physicality of process and matter itself. Materiality has its own imaginative spaces, and the meaning of images resides in poetics of matter and emerges from its diverse and indeterminate potentialities. The divorce of the ghost image from substance was, according to Baudrillard, signalled with the advent of hologram, which was, as he stated, a realization of "a perfect image and the end of imaginary" (1994, 106).

In the phenomenological framework of thought James Elkins wrote: "Seeing alters the thing that is seen and transforms the seer. Seeing is metamorphism, not mechanism" (1996, 11-12). In contemporary visual culture "thinking in images" (to employ Deleuzian phrase) and imagining in images is networked, and connected to an abstract entity of the digital code, to invariable operations of a huge, learning brain machine with incredible computational capacity but with the lack of human intuition. Digital context moves us away from anthropocentric framework and from centering the creativity process in the subject, and reorients to the creative knowledge of the machine, which evolves to think and make decisions. With new modes of image creation the input is human while the processing is largely done by a machine and its authoring algorithms, together with its statistical model of choice. To what extent do aesthetic implications of digital imagery and digital transformation of materiality affect human sensory experience and cognition is still

to be thoroughly elaborated. And above all, with abandoning the lived experience, imagination – a creative power that was tightly knit with the notion of being human – is to be reconsidered.

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