Sustainable Images: Degrowing Visual Culture and Computation

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“The image structures the visible and the invisible, absorbs freeing power, and sucks up solidarity time.” *(Beller, 2006, p.5)*

Introduction

The confluence of visual culture and digital devices has brought unprecedented connectivity while contributing to an expansive and vastly unsustainable media (eco)system. The materiality of communication, devices, and their encompassing infrastructure indicate a visual culture that is materially extractive and computationally heavy. I would like to engage with the degrowth of visual culture's perceptual engagement, especially in terms of an analysis of digitality’s complex temporalities, and their affective dimensions, by referring to the concepts of Shane Denson’s book Discorellated Media (2020). Ultimately, my project speculates on *de-accelaration* of digital visual culture’s perceptual interactions, simultaneously with the degrowth of its technical and computational strata.

Critique of Digital Culture

Digital culture has during the last decades resulted in the intensification of data accumulation and extraction. Most recently, machine learning especially in the context of cultural production has further advanced these practices, both through generative AI and additionally through the introduction of synthetic databases. However, this is only an intensification and a continuation of an already oversaturated visual culture produced by digital media, where media-sharing social platforms play a central role. As algorithms and underlying technical processes strive for constant ‘advancement’ and ‘improvement’, social media platforms consistently play a part in modulating our perceptive flows, subjectivities and relational entanglements.

Ideas of infinite growth that have echoed in Western epistemology since modernity, continue to drive the paradigms of information technology, both in terms of technical elements and capacities, as well as in picture quality. This results in what authors of the paper Permacomputing Aesthetics: Potential and Limits of Constraints in Computational Art, Design and Culture (2023) describe as ‘maximalist techno-aesthetics’, which displays the myth of perpetual growth and infinite resources that haunt technologies. Signified by the pursuit of ever-increasing information density: more pixels, finer detail, heightened fidelity, and expanded

connectivity, as pathways to greater potential, it relies on ever-increasing complexity and resource consumption of digital devices, without ever functioning properly, and continuously fails to live up to our expectations.[1]

According to Daniel Ross in The Moving Images of the Anthropocene (2006), the digital turn has been marked by what he calls an ”intensification of the hegemony of ultrarapid audiovisual technology which continues to unfold in both predictable and unpredictable ways”[2]. Materially, moving images of celluloid and projectible light of the age of unrestrained combustion have “been transformed by the infinite manipulability of the digital and the infinite mobility of the network”[3], that have disintegrated images into immaterial data. Yet, this is a discursive fabrication where the materiality of digital technologies is obfuscated by a set of vague immaterial sounding terms - in addition to the discorrelated fabric of digitality - that conceal a very material infrastructure that furthermore fits into the material and technical realities of technologies. Nonetheless, it is these seemingly invisible yet material infrastructures that build upon more or less seamless experiences of our media environment, with speeds that transcend the abilities of our comprehension.

Computational and Perceptual Limits

Even in the age of proliferation of AI technologies, it can still be useful to revisit today's media environments through the lens of ‘attention economy’. Since the mid 90s, in environments of abundant information, human attention has been considered not only a commodity, but essentially a form of capital, specifically due to its limit. In the visual culture of digital platforms, human attention is continuously sought and modulated by various levels of its entanglement with media. However, environmental concerns introduce a limit of resources and energy consumption into discussions on technology. This resonates at computational and technical levels. The limits of computation and resources in relation to the planetary limit become central here, and fuel the search to introduce alternatives, based on the recognition that the environment is finite.

My question however is, how can we read these two limits together, and in relation to sustainability? Denson himself has described what he has called “dividuated images” as “‘crucial mediators’ of certain ‘process, as they serve to bind human attention and time more generally to the micro temporal circuits of the planetary control systems that would seem to have us locked into a global death spiral, on a collision course with extinction”.[4]

Taking into consideration the impact of internet usage on the cognitive architecture of the brain has reshaped a longer discussion on a ‘crisis of attentiveness’ into the notion of an ‘attention economy’. Tizina Terranova for instance highlights that in a world abundant with information,

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[1] Mansoux, et al. (2023, p.2).
[2] Ross. (2006, p.6)
[3] Ross. (p.1)
[4] Denson. (2020, p.75) Discorrelated Images.

attention becomes a scarce resource due to the inherent limits of neurophysiology and the constraints on available time for consumption. Moreover, she recognizes attention not only as scarce but also increasingly "degraded". For Terranova, the demands of the attention economy push the brain to adapt to the technological framework of attention at a dramatic cost of cognitive loss.[5]

It has been suggested that our interactions with digital environments have succeeded in rewiring our brains with a bias towards the execution of routine tasks and short-term memory operations, and away from so-called higher cognitive functions, like long-term memory and critical reasoning. We can read that alongside Denson's conception of networked media as a metabolism, that counters its conceptualization as any kind of form of collective intelligence. Additionally, the rewiring of our brains is only one of the manifestations of the damage of capitalism, in the form of disciplinary effects inscribed on the body, and on the planet.

A so-called crisis is fueled by capitalism's evolving configurations that constantly push attention and distraction to new thresholds, overwhelming individuals with a continuous influx of products, stimuli, and information. In response, more novel methods for managing and regulating perception emerge. While it seems paradoxical, the abundance of information in modern computational media has led to an ‘impoverished subject’, as noted by Hayles.[6]

Considering that the attention economy provides an epistemological paradigm to conceive attention in such a way that it essentially benefits and accelerates commercial practices, it becomes important to shift our thinking on ‘attention’ to the consideration of practices that hold the potential to generate alternative subjectivities and envision different forms of social collaboration. In other words, especially in the context of sustainability, rethinking the concept of "attention" - and how it can be aligned and repurposed with sustainable practices - in relation to visuality, visual culture, and beyond, becomes crucial. While this may seem like an ambitious and even impossible endeavor, Adrian Mackenzie reminds us that our sensory perceptions are not universal but are instead shaped by media-historical habits, with electronically mediated visual culture playing a pivotal role in molding our ways of seeing - that is however only one in the possibility of many.[7]

Subjectivity, Media and its Embodied Effects

In Discorelated Images, Denson looks specifically at how cinema has entered computational environments, which has subsequently reconfigured our perceptual facilities by new speeds and scales of imaging processes.[8] Contemporary digital media is therefore a form of ‘temporal’ and ‘micro-temporal’ control that operates at multiple levels of media technology. From platforms that modulate, predict, and predetermine subjectivities to lower-level computational processes that

[5] Terranova. (2012). Attention, economy and the brain.
[6] Hayles (2006) from Terranova (2012, p.7)
[7] Mackenzie (2010) from Denson (2020, p.89)
[8] Denson (2020, p.1)

more directly engage in synchronizing our perception with the time of the moving image. This is especially significant because according to Denson the “temporalities that emerge in the process of formation and deformation of images from their contemporary substrates, is nothing less than the time of human life itself.”[9]

At the highest level of digital media, ‘temporal control’ is practiced through the pre-emptive configuration of content. Recommendation systems work at an ambiguous position between the prediction and production of subjects. In terms of the temporality of new media, Lev Manovich states that it essentially ‘runs ahead of time’, while mass standardization has moved towards individual personalization. Furthermore, in the age of algorithms this gains a distinctly dividual turn through what Neta Alexander calls ‘collective personalization’, which groups our viewing behavior with that of others across different categories, re-calculates and re-formulates them, and finally recommends them back to us. Algorithmic media therefore ‘runs ahead’ creating calculable and dividuated, re-aggregated subjectivities, implicating itself in the “generation of the future subjects.”[10] Therefore, ultimately the concern is that in the context of digital media personalization is indeed a process of shaping-of a person, while it simultaneously also shapes the terms of social engagement within media technologies, and beyond.

Furthermore, Denson’s operations of temporal control occur at lower levels of technical operations, too. Neta Alexander again, describes this phenomenon as ‘the commodification of the eye’, which involves technical measurements that exceed human vision's capabilities. Visual content is manipulated at the level of form through technical formulations like video codecs, compression algorithms, and operations like buffering, etc. Importantly, these technical processes do not only modify subjectivities but also produce embodied effects, influencing the intake of visual information and “synchronization with the ongoing temporal flow of video images”[11]. Codecs also significantly impact “contemporary sensations of movement, color, light, and time”[12], by isolating the “components of an image that are most perceptually salient”[13]. In other words, the fact that human perception and its synchronization to contemporary digital media occur at the junction of the informational or data structures and the generated visual format does not only have profound effects on our subjective experience in terms of how and what we see but also reconfigures our bodily senses.

As technical operations actively underline broader forms of ‘cybernetic control’ through contemporary digital media, the experience is often interrupted by buffering that invokes anxiety in the viewer. In this case, the buffering demonstrates the disruption of “utopian promises of seamless interaction and the aforementioned predictive personalization” - the seamlessness is imagined in so far it is based in discourses of “abstraction and dematerialization” that clash with the “material realities instantiated in streaming video’s technological, economic, perceptual, epistemological and temporal logics”.[14]

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[9] Denson. (p.74)
[10] (p.76)
[11] (p.82)
[12] (p.85)
[13] (p.86)
[14] Alexander (2017) from Denson (2020, p.78)

Through this apparatus, the rapid modulations of ultrafast technologies, which exceed the limits of human perception, are central to the creation of subjective and pre-subjective control. Yet, this domain of 'micro-temporal' modulation is also a contested terrain, where the stakes involve not just individual experiences, but broader logistical, commercial, and even geopolitical concerns.[15]

From Digital to Sustainable Images

Theories of contemporary images have emphasized their underlying computational elements and functions. The term operational images has been used to describe images that are immaterial, invisible, and computational, while they at the same time perform certain functions, like track, navigate, activate, visualize, or identify, etc. Furthermore, recent advancements in generative AI have opened up the examination of images as algorithmic forms, both historically as in the present moment.

Significantly, Denson's discorelated images specifically negotiate and navigate the relationship between material, and computational elements, as well as infrastructures, with that of the perceptual apparatuses of viewers. Through these processes, contemporary digital (moving) images negotiate the speeds of ultrarapid media through various levels, all the way to the materiality of the devices. As such, they lay bare contemporary amplifications of digital images, as we can understand them primarily as code and computation, while they modulate the perceptive apparatus through 'temporal' and 'micro temporal' control with the intent to capture and maintain our attention.

When examining images in relation to sustainability, revisit the notion of attention itself - by reconsidering what it really means to pay attention, and re-examining images' modulation of our consciousness, and its affective qualities, in addition to re-opening a field of exploration of media's materiality. Can in a world where fast paces are associated with the acceleration of capitalist production, marked by a continuous sense of political and climate urgency, slowness become a political value? In the context where sustainable images remain purely speculative, of uncertain technical components, unknown computations and uncertain materialities, thinking about them in relation to broader definitions and usages of images can open up a potential for meaningful interactions and perhaps a form of tangibility.

Conclusion

By aligning computational limits with perceptual limits, we can recognize the constraints of both technology and human attention/cognition under the current regime of mediation. Again, if eyes are trained in their media habits, this can open up a space - at least in terms of speculation - for new possibilities for both visuality and technology.

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[15] Analysis from this chapter is based on Chapter 3: Screen Time from Denson (2020)

Outside of ‘speculation' however, can reconsidering our very lived relationships with digital media and visual culture bring on alternative and ‘sustainable’ forms of paying attention? Sustainability seems to be closely connected to habits - such as those through which we organize our social environments in relation to media - that are of course not individual, but a result of collective and political structures and processes. Can shifting our view from how the notion of attention is conceived of in a capitalist society - considering what it truly means to pay attention beyond the media framework, and instead of being subjected to the modulation of consciousness and affective qualities imposed by current media practices - open up a field for alternative subjectivities and forms of social collaboration?

Today, in addition to being constant consumers of media, we are also constantly content of media consumption, as everybody, everything, all the time and everywhere is constantly documented, recorded, streamed, and shared across various platforms. Is the prevailing mode of cultural production really well suited to the creation of ‘knowledge(s)’ and ‘practices’, or are we simply contributing to mere information abundance? Can such a framework of production of media ever truly be sustainable?

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