Going beyond the glitch art. Critical glitch studies as a new research paradigm for analyzing post-digital technologies

Lukasz Mirocha

University of Warsaw, Faculty of "Artes Liberales"

lukasz.mirocha@al.uw.edu.pl

Abstract

The paper proposes to re-examine a critical potential of glitches for studying contemporary media and computational technologies. Specifically, it shows how the dominant user interaction and digital representation narratives based on the illusion of seamless interaction, fluid continuity and perfect automation, can be critically challenged through emphasizing visual glitches in media content and in the GUIs. The research uses Heidegger's things taxonomy (Conspicuousness, Obtrusiveness, Obstinacy) to conceptualize the ontic and aesthetic status of glitches that are manifesting in contemporary real-time, cloud-based, multimedia software. Postphenomenological standpoints developed by Peter Paul Verbeek and Don Ihde are also used to support the argument. Contemporary technological milieu is examined in the light of the "post-digital" approach (advocated i.e. by David Berry, Florian Cramer, Soren Pold & Christian Ulrik Andersen). The "Pirate Cinema" project by Nicolas Maigret, which makes the hidden activity and geography of P2P file sharing visible and the "Universal Texture" project by Clement Valla, which critically analyzes glitches in Google Earth, are used as case studys.

Technology and the post-digital

Contemporary popular culture narratives on human and society-technology interaction are based on the notions of seamless interaction, automation, immateriality of software. Computational technologies have become embedded into the world through ubiquitous computing, wireless communication and mobile devices.

Consequently, many scholars argue that we have entered the post-digital era that is marked by obfuscation of consumer computational technologies through black-box hardware and multi-layered software (e.g. David Berry [1], [2], Florian Cramer [3], Olga Goriunova, Alexiey Schulgin [4], Benjamin Mako Hill [5] and others.) In this light the post-digital should not be understood as a new temporal period that comes after the "digital" as its prefix would suggest. The post-digital rather strives to characterize new economic, social and cultural contexts that have been introduced in the last decade due to the general evolution of computational technologies towards even more autonomous systems, ubiquitous devices, real-time and cloud-based software and services.

Post-digital glitch studies and Heidegger's philosophy of things

The author argues that in order to critically examine cultural impact of the latest computational technologies we should rather turn to studying certain software and hardware in the state of failure – focus on glitches and errors in their everyday functioning. Consequently, the author proposes to reassess the critical potential of glitches by going beyond the glitch aesthetics of predefined glitch filters or emulated / simulated glitches and focusing instead on glitches appearing in everyday interactions with digital media and technologies. [6], [7]

A glitch offers a unique epistemic perspective. The unexpected error caused by the inability of the software to process real-time data or an inadequate capacity to recognize and recombine images into a functioning single image, reveals not only the software's inner structure [8], but also makes visible the limitations of real-time data transmission and makes the omnipotence of digital quantification questionable. Glitches in web-based graphical user interfaces, video-streaming services, or satellite imagery services are one of the last remaining instances of the unreadiness-to-hand of the computational in the era of multi-layered autonomous software and ultra high-resolution display systems. [9], [10]

We could then argue that a glitch becomes a manifestation of a malfunctioning piece of equipment that emerges from a functional transparency or immediacy of a computational system and becomes a sign of its unready-to-hand condition. It should be also emphasized that a glitch goes beyond a binary distinction between working and not-working computational system, it is rather situated in-between these two states.

Using Heidegger's terms, a glitch present in digital visual media introduces a state of obstinacy, when a particular visual media file (image, video) or an element of a graphical user interface has been partially processed and displayed because of an unexpected computational error that "gets in the way". However, as argued above, a glitch does not lead to the state of conspicuousness – to a complete failure of a computational system. Nonetheless,

it is sufficient to sever the illusion of seamless interaction with the computational as well as the fluid continuity of the post-digital media.

For this particular reason, applying the post-digital approach and Heidegger's objects taxonomy to visual glitches would give us a productive research paradigm for a critical analysis of the inner logic and aesthetic manifestations of contemporary real-time and cloud-based computational technologies – ever changing data streams, based on protocols, and standardized tools. [11], [12], [13] However, taking into account the complexity of todays technological milieu, we should now move from classic phenomenological approach (Heidegger) to a post-postphenomenological approach (advocated i.e. by Don Hide and Peter-Paul Verbeek). This standpoint concentrates on concrete technological devices and objects, rather than on general conditions of technological being in the world.

Glitches in the post-digital media ecosystems and artworks

Following Verbeek's postphenomenological suggestion to study technology in terms of concrete artifacts, two art projects that rely on glitches, have been chosen to illustrate a practical application of the theoretical approach that was presented in the first section of the paper. Both the "Universal Texture" project by Clement Valla and the "Pirate Cinema" project by Nicholas Maigret are critical art interventions addressing real-time, cloud based image processing technologies and data transmission protocols.

Clement Valla, a New York-based artist, has critically analyzed glitches in Google Earth, which appear as distorted images of earth's surface i.e. drooping roads and bridges. His analysis resulted in the "Universal Texture" artwork presented in 2012. [14] According to Valla, Google uses Universal Texture mapping system which uses hybrid images, a patchwork of two-dimensional photographic data and three-dimensional topographic data extracted from a slew of sources, data-mined, pre-processed, blended and merged in real-time in order to create this particular god-like fluid planetary navigation system – Google Earth. [15]

Valla argues that drooping roads and bridges, distorted building facades in Google Earth are not in fact mere errors but rather anomalies within an inner logic of the computational system. Clearly, their existence does not lead to a complete breakdown of Google Earth. Consequently, they should be rather considered as noise, anomaly or as Heidegger would put it – an obstinacy within a functioning system. Ihde would say that glitches introduce a different technological intentionality into Google Earth application.

Many glitches that appear in contemporary visual media are symptomatic for the technologies of the post-digital age. The author argues that they reveal a new model of seeing and of representing our world. Software and tools of the post-digital era are based on dynamic, ever-changing data from a myriad of different sources, which are endlessly combined and constantly updated to create an illusion of seamless interaction and perfect automation. Google Earth is an example of such a system, being in fact an interface for the assemblage of data coming from various stakeholders and sources. The data is constantly updated, and Valla claims that many of these glitches had disappeared from the system due to improvements in the algorithms. The post-digital era is marked by the logic of constant, seamless and equally obfuscated updates, which do not longer take place at the interface level. Todays cloud-based and ubiquitous computing systems i.e. Google, Facebook algorithms, are being constantly rewritten and updated, often without user's knowledge. Noticing, analyzing and archiving glitches in the ever-changing post-digital technologies is one of the few practices that enable us to critically reflect on development of flux technologies of the post-digital age. Following Ihde, we could argue that glitches are phenomena manifested as (micro)perceptions in user-application interaction. Only due to this particular state of obstinacy, a new macroperception, understood as a new framework or cultural context opposing the seamless interaction and perfect representation paradigms, emerges. [16]

The "Pirate Cinema" by Nicolas Maigret is another artistic intervention that uses glitches to critically examine contemporary technologies. [17] It produces cut-ups from media files shared on P2P networks in real-time. Maigret argues that "this immediate and fragmentary rendering of digital activity (…) depicts the topology of digital media consumption and uncontrolled content dissemination in a connected world."

Thanks to glitch aesthetics the underlying mechanics of protocological and packet media transmission can be revealed. Image breakdowns and pixelization are results of loss in data packets transmission or even temporal unavailability of data. The "Pirate Cinema" visualizes a specific micro-temporality of networked and real-time based media in the post-digital age. The usual continuity and immediacy of the high definition media content is challenged through the state of obstinacy, an unready-at-hand condition manifested through glitch aesthetics. The whole process take place in real-time, unveiling the fact that beneath the interface level, the computational in the post-digital age is in fact composed of chaotic and unstable (data) scraps.

Conclusion

The materiality of contemporary real-time, cloud-based, multimedia systems has been lost in the logic of constant updates, data streams and autonomous systems at the technological level. The user interaction level has been dominated by the illusion of seamless interaction and perfect visual representation. The author proposes to challenge this situation by studying certain computational ecosystems in the state of failure. Critical glitch studies based on an ontic analysis of glitches and informed by the post-digital, an approach that takes into account the specificities of todays technologies, and last

but not least, inspired by a critical artistic interventions, are one of possible responses to opening the black-box of todays computational systems. This action should be considered is a first step in analyzing social, cultural, and political impact of the computational for our civilization.

Acknowledgements

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