

## GLITCH STUDIES MANIFESTO

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'Collapse of PAL', an AV performance by Rosa Menkman (2010).

**PAL (Phase Alternate Line) 1963-2006.**

Dear PAL,

*In Copenhagen, Denmark, in a humble studio that was completely empty, besides the many screens and technologies that were apparently needed for the creation of DVB (Digital Video Broadcasting) television, I had the honour of performing your obsequies; your funeral rites. I was asked to reflect on your fragmented histories, your inherent characteristics and finally, your silent, yet somehow violent termination.*<sup>1</sup>

*I believe that I can only grasp your story as a consequence of media innovations, driven by a growing impatience to get faster and to progress towards perfection. However, the more I study your complex history, the more I learn about me; my preconceptions and expectations about you but also about your successors. How your scanning lines and other artifacts have become a beacon and how they resonate in my understanding and thinking of other, newer media. What your history teaches me is that your discontinuation is continued in my experience of new technologies; your history teaches me about my future.*

*Dearest PAL, I hope that while I performed your story, with all its unbearable tones and images, I captured at least some part of that indescribable history of which only you could tell the beginning and on end.*

*As evolution is paralleled by the multiplication of machines, I think I can only start to begin to understand the flow of this progress, by studying the history of breaks, like yours - in an art of artifacts.*<sup>2</sup>

Warmly yours,  
The Angel of History

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1. *The Collapse of PAL* is a real-time nationwide television performance that I presented at TV-TV on the 25th of May 2010, in Copenhagen, DK. In *The Collapse of PAL*, the Angel of History (as described by Walter Benjamin) reflects on the PAL television signal and its termination. This death sentence, although executed in silence, was a brutally violent act that left PAL disregarded and obsolete. However, the Angel of History has to conclude that while the PAL signal might be argued to be dead, it still exists as a trace left upon the new, 'better' digital technologies. PAL can, even though the technology is terminated, be found here, as a historical form that newer technologies build upon, inherit or have appropriated. Besides this, the Angel also realizes that the new DVB signal that has been chosen over PAL, is different but at the same time also inherently flawed. The impending question is if this progress also means improvement. Since May 2010, *The Collapse of PAL* has been performed and screened a couple of times in venues in Europe, the US and South America. A render of the first part of *The Collapse of PAL* can be found here: <http://vimeo.com/12199201>.
  2. Luigi Russolo, *The Art of Noises*, trans. Barclay Brown, New York: Pendragon Press, 1986.

**The Art of Artifacts**

*Technological Progress is an Ill-Fated Dogma*

In the beginning it was calm... Then humans built technologies and the first forms of mechanical noise were born. Since that time, artists migrated from the grain, the scratching and burning of celluloid (*A Colour Box* by Len Lye, 1937) to the magnetic distortion and scanning lines of the cathode ray tube (as explored by Nam June Paik in *MagnetTV* in 1965). Subsequently digital noise materialized and artists wandered the planes of phosphor burn-in, as Cory Arcangel did so wittily in *Panasonic TH-42PWD8UK Plasma Screen Burn*, in 2007. With the arrival of LCD (liquid crystal display) technologies, dead pixels were rubbed, bugs were trapped between liquid crystals or plastic displays and violent screen crack LCD-performances took place (of which my favorite is %SCR2, by Jodi / *webcrash2800* in 2009). Today artists even surf eBay to buy readymade LCDs with T-con board failure or photo cameras with loose CCD (charged coupled device) chips (the latter I too exploited in *The Collapse of PAL*, 2010).

While most of these artworks do not have a lot in common, all of them do show that this is the product of an elitist discourse and dogma widely pursued by the naive victims of a persistent upgrade culture. The consumer only has to dial #1-800 to stay on top of the technological curve; to ride the waves of both euphoria and disappointment. It is now normal that in the future the consumer will pay less for a device that can do more, but at the same time will reach a state of obsolescence faster. This quest for complete transparency (the perfect, invisible interface) has changed the computer system into a highly complex assemblage that is hard to penetrate, and sometimes even completely closed off. The system consists of layers of obfuscated protocols that find their origin in ideologies, economies, political hierarchies and social conventions. The user has to realize that improvement is nothing more than a proprietary protocol, a deluded consumer myth of progression towards a holy grail of perfection. Every (future) technology possesses its own fingerprints of imperfection, which I refer to as 'noise artifacts'.

*The Art of Noise Artifacts*

In information theory, noise possesses a very specific set of connotations, or even rules. In this theory, noise has been isolated to the different occasions in which the static, linear notion of transmitting information is interrupted.<sup>3</sup> In the digital, these interruptions can be subdivided into glitch, encoding / decoding (of which in digital compression is the most ordinary form) and feedback artifacts. Artists exploit these artifacts to make (reflexive) media specific

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3. Claude E. Shannon and W. Weaver, *The Mathematical Theory of Communication*, Urbana, Illinois: University of Illinois Press, 1949. I realize that Shannon's and Weaver's model is not a correct blueprint for communication. But because it is basic and doesn't focus on the transmission of *meaning*, the model makes it possible to leave semiotics or textual analysis out of the picture, at least for now. In this way the model can be used to research communication strictly from a formalistic point of view, which is in my opinion one part (the 'beginning') of the many different stratifications of glitch art.

art works; as is for instance done by Gijs Gieskes in his *Sega Mega Drive 2* (2007), Paul Davis in *Codec* (2009) and botborg's *Live at Ars Electronica Festival* video (2007).<sup>4</sup>

As might be clear from these artworks, the meaning of noise is more complex than can be explained by information theory; the 'meaning' of noise differs according to perspective. Etymologically, the term *noise* refers to states of aggression, alarm and powerful sound phenomena in nature ('rauschen'), such as storm, thunder and the roaring sea. Moreover, when noise is explored within a social context or in art, the term is often used as a figure of speech, and possesses many more meanings. Sometimes, noise stands for unaccepted sounds; for that which is not music, not valid information, or is not a message. Noise can also stand for an (often undesirable, unwanted, other and unordered) disturbance, or a break or addition within the linear transmission of useful data. However noise is defined, its negative definition also has a positive consequence: it helps to (re)define its opposite, which is the world of meaning, the norm, regulation, goodness, beauty and so on.<sup>5</sup>

Some artists intentionally elucidate and deconstruct the hierarchies of digital technologies. They do not work in (binary) opposition to what is inside the flows (the normal uses of the computer) but practice on the border of these flows. Sometimes, artists use the computers' inherent maxims as a façade, to trick the audience into a flow of certain expectation that the artwork subsequently rapidly breaks out of. As a result, the spectator is forced to acknowledge that the computer is a closed assemblage based on a genealogy of conventions, while at the same time the computer is actually a machine that can be bent or used in many different ways. Digital noise artifacts thus exist as a paradox; while they are often negatively defined, they also have a positive, generative or redefining quality. The break of a flow within technology (the noise artifact) generates a void which is not only a lack of meaning. It also forces the audience to move away from the traditional discourse around a particular technology and to ask questions about its meaning. Through this void, artists can critique digital media and spectators can be forced to recognize the inherent politics behind the codes of digital media. So, while most people experience noise artifacts as something negative (or as an accident), I am of the opinion that the positive consequences of these imperfections and the new opportunities they facilitate should be emphasized. Noise artifacts can be a source for new patterns, anti-patterns and new possibilities that often exist on a border or membrane (of, for instance, language). With the creation of breaks with the political, social, and economic conventions of the technological machine, the audience may become aware of its inherent pre-programmed patterns. Then, a distributed awareness of a new interaction gestalt can take form.

#### *Glitches vs. Glitch Art*

I experience the glitch as a wonderful interruption that shifts an object away from its ordinary form and discourse, towards the ruins of destroyed meaning. My first encounter comes hand-

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4. Gijs Gieskes, *Sega Mega Drive 2*, 2007, glitch/circuitbend Sega, <http://gieskes.nl/circuitbending/?file=segamegadrive2>; Paul Davis, *Codec*, 2009, compression algorithm, <http://www.beigerecords.com/paul/defineyourterms/codec.html>; botborg, *Live at Ars Electronica Festival*, 2007, live feedback, <http://botborg.com/index.php?go=videolive>.  
5. Paul Hegarty, *Noise/Music: A History*, London and New York: Continuum, 2007, p. 5.

in-hand with a feeling of shock, or being lost and in awe. But once I find myself within these ruins I also experience a feeling of hope; a triumphal sensation that there is something more than just devastation. A negative feeling makes place for an intimate, personal experience of a machine (or program), a system exhibiting its formations, inner workings and flaws. As a holistic celebration rather than a particular perfection these ruins reveal a new opportunity to me, a spark of creative energy that indicates that something new is about to be created. Questions emerge: What is this utterance, and how was it created? Is it perhaps...a glitch? But once the glitch is named, the momentum – the glitch – is gone...and in front of my eyes suddenly a new form has emerged.

The glitch has no solid form or state through time; it is often perceived as an unexpected and abnormal *modus operandi*, a break from (one of) the many flows (of expectations) within a technological system. But as the understanding of a glitch changes when it is being named, so does the equilibrium of the (former) glitch itself: the original experience of a rupture moved beyond its momentum and vanished into a realm of new conditions. The glitch has become a new mode, and its previous encounter has become an ephemeral, personal experience. Just as with noise, the word *glitch* in *glitch art* is used metaphorically and thus slightly different than the stand-alone technical term 'glitch'. The genre of glitch art moves like the weather: sometimes it evolves very slowly, while at other times it can strike like lightning. The art works within this realm can be disturbing, provoking and horrifying. Beautifully dangerous, they can at once take all the tensions of other possible compositions away. These works stretch boundaries and generate novel modes; they break open previously sealed politics and force a catharsis of conventions, norms and beliefs.

Glitch art is often about relaying the membrane of the normal, to create a new protocol after shattering an earlier one. The perfect glitch shows how destruction can change into the creation of something original. Once the glitch is understood as an alternative mode of representation or a new language, its tipping point has passed and the essence of its glitch-being is vanished. The glitch is no longer an art of rejection, but a shape or appearance that is recognized as a novel form (of art). Artists that work with glitch processes are therefore often hunting for a fragile equilibrium; they search for the point when a new form is born from the blazed ashes of its precursor.

#### *Hot and Cool Glitches*<sup>6</sup>

The procedural essence of glitch art is opposed to conservation; the shocking experience, perception and understanding of what a glitch is at one point in time cannot be preserved for a future time. The beautiful creation of a 'cool' glitch is uncanny and sublime; as an artist I try to catch something that is the result of an uncertain balance, a shifting, ungraspable, unrealized utopia connected to randomness and idyllic disintegrations. The essence of glitch art is therefore best understood as a history of movement and as an attitude of destructive generativity; it is the procedural art of non con-formative, ambiguous reformations.

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6. Marshall McLuhan outlines a theory of 'hot' and 'cool' forms of media in Marshall McLuhan, *Understanding Media: The Extensions of Man*, New York: McGraw Hill, 1964, p. 22.

However, I have also noticed that over time some of my own glitches have developed into personal archetypes; I feel that they have become ideal examples or models of my work. Moreover, I see that some artists do not focus on the procedural entity of the glitch at all. They skip the process of creation-by-destruction and focus directly on the creation of a new formal design, either by creating a final product or by developing a new way to recreate the latest glitch archetype. This can result in a plug-in, a filter or a whole new 'glitching software' that automatically simulates or recreates a particular glitching method, which then becomes something close to an 'effect'. Some forms of glitch art can thus become ideal examples or models that have gained a particular meaning and follow a certain discourse.<sup>7</sup>

This 'new' form of 'conservative glitch art' or 'hot glitch art' focuses more on design and end products than on the procedural and political breaking of flows. There is an obvious critique: to design a glitch means to domesticate it. When the glitch becomes domesticated, controlled by a tool, or technology (a human craft), it has lost its enchantment and has become predictable. It is no longer a break from a flow within a technology, or a method to open up the political discourse, but instead a form of cultivation. For many actors it is no longer a glitch, but a filter that consists of a preset and/or a default: what was once understood as a glitch has become a new commodity.

Glitch art is thus not always an art of the momentum; many works have already passed their tipping point, or never pass one at all. Glitch art exists within different systems; for instance the system of production and the system of reception. It is not only the artist who creates the work of glitch art who is responsible for the glitch. The 'foreign' input (wrongly encoded syntaxes that lead to forbidden leakages and data promiscuity), the hardware and the software (the 'channel' that shows functional[?] collisions), and the audience (who are in charge of the reception, the decoding) can also be responsible. All these actors and their perspectives are positioned within different but sometimes overlapping flows in which the final product can be described or recognized as glitch art. This is why an intended error can still rightfully be called glitch art from another perspective, and why glitch art is not always just a personal experience of shock, but also, as a genre, a metaphorical way of expression, that depends on multiple actors. Works from the genre 'glitch art' thus consist as an assemblage of perceptions and the understanding of multiple actors. Therefore, the products of these new filters that come to existence after or indeed without the momentum of a glitch cannot be excluded from the realm of glitch art.

The popularization and cultivation of an avant-garde of mishaps has become predestined and unavoidable. Even so, the utopian fantasy of 'technological democracy' or 'freedom', which glitch art is often connected to, has little to do with the 'colonialism' of these hot glitch art designs and glitch filters. If there is such a thing as technological freedom, it can only be found within the procedural momentum of cool glitch art – when a glitch is just about to relay a protocol.

7. Rosa Menkman, 'A Vernacular of File Formats', August 2010, <http://rosa-menkman.blogspot.com/2010/08/vernacular-of-file-formats-2-workshop.html>.

### *Acousmatic Videoscapes<sup>8</sup>*

Whenever I use a 'normal', transparent technology, I see only one aspect of the actual machine. I have learned to ignore the interface and all structural components in order to understand a message or use a technology as quickly as possible. The glitches I trigger turn the technology back into the obfuscated box that it already was. They shroud its inner workings and the source of the output under a sublime black veil. I perceive glitches without knowing their origin. This gives me and the audience an opportunity to concentrate better on their form – to interpret their structures and to learn more from what can actually be seen. An example of such a work is my video *Radio Dada* (2008).<sup>9</sup> I prefer to show this work and give the explanation of what technically happened only after a discussion of what the audience has seen and heard.

The glitches in *Radio Dada* create an acousmatic videoscape in which I can finally perceive an output outside of my goggles of speed, transparency and usability. The new structures that unfold themselves can be interpreted as a portal to a utopia, a paradise-like dimension, but also as a black hole that threatens to destroy the technology as I knew it. In the acousmatic videoscapes I make, I use critical trans-media aesthetics to theorize human thinking about technology, creating an opportunity for self-reflexivity, self-critique and self-expression.<sup>10</sup> I use synaesthesia not just as a metaphor for transcoding one medium upon another (with a new algorithm), but a conceptually driven meeting of the visual and the sonic within the newly uncovered quadrants of technology.

### *Critical Trans-media Aesthetics*

Within software art, the glitch is often used to deconstruct the myth of linear progress and to end the search for the holy grail of the perfect technology. In these works, the glitch emphasizes what is normally rejected as a flaw and subsequently shows that accidents and errors can also be welcomed as new forms of usability. The glitch does not only invoke the death of the author, but also the death of the apparatus, medium or tool – at least from the per-

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8. Acousmatics is a concept originally described by Pierre Schaeffer, in *Traité des objets musicaux*, Le Seuil, Paris, 1966.
  9. Radio Dada can be watched on vimeo: <http://vimeo.com/2321833>. The video-images of Radio Dada are constructed out of nothing but the image created by feedback (I turned a high-end camera on a screen that was showing, in real time, what I was filming, creating a feedback loop). Then I glitched the video by changing its format to .avi (the cinepak codec) and subsequently exported it into animated gifs, which resulted in the loss of certain pixels and a very special video-texture. I (minimalistically) edited the video in Quicktime. Then I sent the file to Extraboy, who composed music for the video. The composing process started with a handheld world radio. Extraboy scanned through frequencies and experimented with holding the radio in different parts of the room while touching different objects. Eventually he got the radio to oscillate noise in the tempo that he perceived in the video. The added synthesizer sounds were played live to further build on the non-digital sound and rhythm. This was later contrasted with drums which were digitally synthesized and processed through effects with a very digital sound to them. Just like with the video, the digital and analogue media and aesthetics of sound are mixed into one coherent whole.
  10. My Acousmatic Videoscape portfolio can be found at, <http://videoscapes.blogspot.com/>.

spective of the technologically determinist spectator – and is often used as an anti ‘software-deterministic’ form.

This fatal manner of glitch art presents a problem for media and art historians, who try to describe old and new culture upon a continuum, composed of different niches. To deal with these breaks, historians have repeatedly coined new genres and new media forms, in order to give these splinter practices a place within this continuum. As a result, an abundance of designations such as databending, datamoshing and circuitbending have come into existence, which in fact all refer to similar practices of breaking flows within different technologies or platforms.

Theorists have been confronted with the same problem. For them, terms like post-digital or post-media aesthetics frequently offer a solution. Unfortunately, these kinds of terms seem to be misleading, because in glitch art ‘post’ actually often means a reaction to a prior form. And yet, to act against something does not mean to move away from it completely – in fact, a reaction also prolongs a certain way or mode, at least as a point of reference.<sup>11</sup> An answer to the problems of both historians and theorists might be to describe glitch art as a procedural activity demonstrating against and within multiple technologies, which I call *critical trans-media aesthetics*. The role of glitch artifacts as critical trans-media aesthetics is twofold. On the one hand, these aesthetics show a medium in a critical state: a ruined, unwanted, unrecognized, accidental and horrendous state. These aesthetics transform the way the consumer perceives the normal (every accident transforms the normal) and describe the passing of a tipping point, after which the medium might become something new. On the other hand, these aesthetics critique the medium’s genre, interface and expectations. They challenge its inherent politics and the established template of creative practice, while producing a theory of reflection.

### Glitchspeak and Glitch Studies

Just as Foucault stated that there can be no reason without madness, Gombrich wrote that order does not exist without chaos, and Virilio stated that technological progression cannot exist without its inherent accident. I am of the opinion that flow cannot be understood without interruption, or functioning without ‘glitching’.<sup>12</sup> This is why we need glitch studies.

Some people see glitches as technological, while others perceive them as a social construction. I think it is useless to place one perspective above the other. Glitch studies needs to take place in-between, both, neither and beyond.<sup>13</sup> Glitches do not exist outside of human perception. What was a glitch 10 years ago is, most often, not a glitch anymore - it might however have become a fetishized retro-commodity. This ambiguous contingency of the glitch depends on its constantly mutating materiality. The glitch exists as an unstable assemblage in which materiality is influenced by the medium’s construction, operation and content of the apparatus on the one hand; and the work, the writer, and the interpretation by the reader and/or user – the meaning – on the other. Thus, the materiality of glitch art is not (just) the machine on which the work appears, but a constantly changing construct that depends on the interactions between the text and its social, aesthetic and economic dynamics – and, of course, the point of view from which different actors are able to make meaning.

Glitch studies attempts to balance nonsense and knowledge. It can be pursued through Glitchspeak, a vocabulary of new expressions, and an always growing language of digital culture. These expressions teach the speaker something about the inherent norms, presumptions and expectations of a language: what is not being said, what is left out. Glitch studies searches for the unfamiliar while at the same time it tries to de-familiarize the familiar. This study can show what is acceptable behavior and what is unacceptable, or outside the norm. To capture and explain a glitch is a necessary evil, which enables the generation of new modes of thought and action. When these modes become normalized, glitch studies shifts its focus or topic of study to find the current outsider in relation to a new technology or discourse. Glitch studies is a misplaced truth; it is a vision that destroys itself by its own choice of and for oblivion. The best ideas are dangerous because they generate awareness. Glitch studies is what you can just get away with.

11. Lev Manovich, ‘Post-media aesthetics’, *disLOCATIONS*, Karlsruhe: ZKM, Centre for Art and Media/Centre for Interactive Cinema Research, University of New South Wales, 2001.  
Kim Cascone, ‘The Aesthetics of Failure: “Post-Digital” Tendencies in Contemporary Computer Music’, *Computer Music Journal* 24.4 (2000): 12-18.

12. Michel Foucault, ‘First Preface to *Histoire de la folie à l’âge classique*’ (1961). trans. A. Toscano, *PLI*, 13, (2002): p. xii; Ernst Hans Josef Gombrich, *The Sense of Order: A Study in the Psychology of Decorative Art*, London: Phaidon Press, 1984, pp. 124-125; Sylvère Lotringer and Paul Virilio, *The Accident of Art*, Semiotext(e): New York, 2005, p. 88

13. Lievnath Faber, Tim van der Heijden and Rosa Menkman, *In Between Manifesto*. May 2008, <http://mastersofmedia.hum.uva.nl/2008/05/30/in-between-manifesto/>.

### Glitch Studies Manifesto

- 1) *The dominant, continuing search for a noiseless channel has been — and will always be — no more than a regrettable, ill-fated dogma.*  
Acknowledge that although the constant search for complete transparency brings newer, 'better' media, every one of these improved techniques will always possess their own inherent fingerprints of imperfection.
- 2) *Dispute the operating templates of creative practice; fight genres, interfaces and expectations!*  
Refuse to stay locked into one medium or between contradictions like real vs. virtual, obsolete vs. up-to-date, open vs. proprietary or digital vs. analogue. Surf the vortex of technology, the in-between, the art of artifacts!
- 3) *Get away from the established action scripts and join the avant-garde of the unknown. Become a nomad of noise artifacts!*  
The static, linear notion of information-transmission can be interrupted on three occasions: during encoding-decoding (compression); feedback; or when a glitch (an unexpected break within the flow of technology) occurs. Noise artists must exploit these noise artifacts and explore the new opportunities they provide.
- 4) *Employ bends and breaks as a metaphor for différance. Use the glitch as an exoskeleton for progress.*  
Find catharsis in disintegration, ruptures and cracks; manipulate, bend and break any medium towards the point where it becomes something new; create *glitch art*.
- 5) *Realize that the gospel of glitch art also reveals new standards implemented by corruption.*  
Not all glitch art is progressive or *something new*. The popularization and cultivation of the avant-garde of mishaps has become predestined and unavoidable. Be aware of easily reproducible *glitch effects*, automated by softwares and plug-ins. What is now a glitch will become a fashion.
- 6) *Force the audience to voyage the acousmatic videoscape.*  
Create conceptually synaesthetic artworks, that exploit both visual and aural glitch (or other noise) artifacts at the same time. Employ these noise artifacts as a nebula that shrouds the technology and its inner workings and that will compel an audience to listen and watch more exhaustively.
- 7) *Rejoice in the critical trans-media aesthetics of glitch artifacts.*  
Utilize glitches to bring any medium in a critical state of hypertrophy, to (subsequently) criticize its inherent politics.
- 8) *Employ Glitchspeak (as opposed to Newspeak) and study what is outside of knowledge. Glitch theory is what you can just get away with!*  
Flow cannot be understood without interruption or function without glitching. This is why glitch studies is necessary.

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