The Perception Of Glitch

Our taverns and our metropolitan streets, our offices and furnished rooms, our railroad stations and our factories appeared to have us locked up hopelessly. Then came the film and burst this prison-world asunder by the dynamite of the tenth of the second, so that now, in the midst of its far-flung ruins and debris, we calmly and adventurously go traveling.[01]

- WALTER BENJAMIN

THE MEANING OF NOISE

To develop a categorization of noise for contemporary audio-visual media theory, I have used Claude Shannon's mathematical theory of communication. In his definition of informational noise, Shannon conveniently focused on the transfer of information between machines, leaving human elements and context out of the equation. Drawing on Shannon's model, I was able to divide digital noise into three basic categories of noise artifacts: *encoding/decoding artifacts* (which are most often referred to as compression artifacts), *feedback artifacts* and the 'other' corruptions known as *glitch artifacts* – artifacts for which the causes are not (yet) known. It is important to realize that the difference between each of these artifacts is not rigid, as the description of a glitch artifact can be understood as a de/compression or feedback artifact (and visa versa), depending on the viewer's knowledge of the technology. In the context of human-computer communication, I also deviate from Shannon and Weaver and believe that the concept of noise becomes more complex as it connotes meaning and translation. Consequently, human-computer definitions of noise must also include social parameters and become more complex, inevitably negotiating questions of context, perception and aesthetics.

The etymological definition of noise refers to states of aggression, alarm and powerful sound phenomena in nature ('*rauschen*')[02]. When the concept of noise is approached within a social context, noise does not exist independently, but only in relation to what it is not. However complex or inclusive noise appears as a signifier, it is always a kind of negativity: it stands for unaccepted sound, not music, invalid information or the absence of a message. Noise is unwanted, other and unordered. Accordingly, there is also no unequivocal cultural definition of noise, because in the end, what noise is and what noise is not, is a social matter. As James Brady Cranfield-Rose writes, 'noise is a "cipher", a question mark, forever eluding fixed definitions'.[03] Furthermore, whichever way noise is defined, its negative orientation also has positive, critical dimensions. Noise tends to reflexively stage a reconsideration or re-view its opposite – the world of meaning, norms and regulations, goodness, or beauty.[04]

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01 | Walter Benjamin, 'The Work of Art in the Age of Mechanical Reproduction', in Hannah Arendt (ed.) Illuminations, New York: Schocken, 1968, pp. 219-254. p. 236.

02 |Torben Sangild, The Aesthetics of Noise, Copenhagen: Datanom, 2002. www.ubu.com/papers/noise. p. 5-8.

03 | James Brady Cranfield-Rose, Tick-tick-tick-tick-tick... Oval, the glitch and the utopian politics of noise, unpublished master thesis, Burnaby, Canada: Simon Fraser University, 2004. p. 13, http://lib-ir.lib.sfu.ca/handle/1892/8961.

04 | Paul Hegarty, Noise/Music: A History, London and New York: Continuum, 2007. p. 5.

THE GLITCH MOMENT(UM): A VOID IN TECHNO-CULTURE

Noise aesthetics pose both a technological and perceptual challenge to habitual or ideological conventions. While media developers design their technologies in order that the user will forget about the presence of the medium, following the ideal logic of transparent immediacy, in reality, the complexity of the user's inherently *aesthetic* and perceptual responses to the human computer interface requires a more nuanced approach. As Ernst Gombrich declared: 'However we analyse the difference between the regular and the irregular, we must ultimately be able to account for the most basic fact of aesthetic experience, the fact that delight lies somewhere between boredom and confusion'.[05] Situations of either extreme immediacy or extreme reliability do not contribute as might be expected to the actual richness of a media experience. Most people need some kind of interplay between surprise and uniformity to keep them actively involved.[06] Expanding on this important, indeed integral role of irregularity and surprise in human perception, Gombrich quotes Adelbert Ames, Jr, who explains:

> the organism is continually comparing the prognosis of the continually changing new external events with his determined frame of significance. If they conform, i.e. 'work', he is no longer interested; but in so far as they do not, he has to take stock of the situation. There are three possibilities – either his frame of significances may be wrong, or his immediate sense response may be wrong, or both. In any case, he has a problem to solve.[07]

The first encounter with a glitch comes hand in hand with a feeling of shock, with being lost and in awe. The glitch is a powerful interruption that shifts an object away from its flow and ordinary discourse, towards the ruins of destructed meaning. This concept of *flow* I emphasize as both a trait within the machine as well as a feature of society as a whole. DeLanda distinguishes between chaotic disconnected flows and stable flows of matter that move in continuous variations, conveying singularities.[08] DeLanda draws here on Deleuze and Guattari, who describe flow in terms of the beliefs and desires that both stimulate and maintain society. They write that a flow is something that comes into existence over long periods of time. Within these periods, conventions are established, while deviations tend to become rare occurrences and are often (mis)understood as accidents (or glitches). Although meaningful aspects of every day life might in fact be disclosed within these rare fluctuations, their impact or relevance is often likely to be ruled out, because of social tendencies to put emphasis on the norm.[09]

A glitch is the most puzzling, difficult to define and enchanting noise artifact; it reveals itself to perception as accident, chaos or laceration and gives a glimpse into normally obfuscated

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05 | Ernst Hans Josef Gombrich, The Sense of Order: A Study in the Psychology of Decorative Art, London: Phaidon Press, 1984. p. 9.

06 | Robert Pepperell, 'Computer aided creativity: practical experience and theoretical concerns', in Proceedings of the 4th conference on Creativity & cognition, Loughborough, UK: ACM, 2002. pp. 50-56, http://portal.acm.org/citation.cfm?id=581710.581720&type=series.

07 | Ames, Jr. Adelbert, 'The morning Notes', in Ernst Hans Josef Gombrich, The Sense of Order: A Study in the Psychology of Decorative Art, London: Phaidon Press, 1984. p. 117.

08 | Manuel DeLanda, War in the Age of Intelligent Machines, New York: Zone Books, 1991. p. 20.

09 | Gilles Deleuze and Pierre-Félix Guattari, A Thousand Plateaus: Capitalism and Schizophrenia, Trans. B. Massumi, Londen: The Athlone Press, 1988. p. 219.

machine language. Rather than creating the illusion of a transparent, well-working interface to information, the glitch captures the machine revealing itself. Television is arguably one of the more flow-centric, ideologically 'transparent' media forms. In *Television: Technology and Cultural Form* (1974), Williams describes a viewer frequently caught up in a flow of technology and its contents. He emphasizes that the process of this flow seems natural, but is in fact strictly guided by larger corporations and powers. When a (televisual) flow breaks, the user comes to witness only shreds of the flow through which the message is normally transmitted, while the machinic functions that are conventionally relied upon – as obfuscated – are revealed.[10] When a supposedly transparent interface is damaged in this way, the viewer is momentarily relocated to a void of meaning. Interruptions like these are often perceived as disastrous, threatening and uncanny. Sometimes they create a moment where seemingly any sense that could be made of a situation is eliminated from thought or possibility. On other occasions, the metaphorical impact of the unspeakable mediatic disaster also brings with it the tendency to *reflect* (on for instance what the differentiation from the flow means). Eric Kluitenberg describes how this was the case on September 11, 2001, when the CNN website temporarily went down and a black screen repeatedly interrupted the flow of the television broadcast. He refers to these moments in time as

> the rupture of professional media codes, which signaled complete panic and disarray [...], the infinity of possible alternative discourses, of other possible modes of explanation and interpretation.[11]

What is challenged or brought forward in the case of the void is the idea of authorship itself, which, prior to this supposedly voiding moment, was in fact neutralized from media-cultural experience. It is possible to realize at this point – and only belatedly – that the conventions of 'the seamless surface of the networked media spectacle itself, and its illusion of stability'[12] tend to foreclose any sense of authorship whatsoever. In media accidents like these, the void involves the unknown – that which cannot be described or planned for. These empty spaces of non-understanding trigger a *horror vacui*: a fear of voids to which nothing else can be compared and that is beyond all possibilities of calculation, measurement or imitation.[13] However, these terrifying voids also create a form of counter-experience, a negative pleasure that is not so different from the proto-modern, aesthetic conception of the sublime (described as early as 1693 in John Dennis's writings on the Alps), as contradictory and immense 'delight that is consistent with reason' but yet, 'mingled with Horrors, and sometimes almost with despair'.[14]

Like in this 'nature'-generated sublime, the glitch is an uncanny or overwhelming experience of *unforeseen* incomprehension. Experiencing a glitch is often like perceiving a stun-

10 | Raymond Williams, Television: Technology and Cultural Form, Hanover: University Press of New England, 1974.

11 | Eric Kluitenberg, Delusive Spaces. Essays on Culture, Media and Technology, Rotterdam: NAi Publishers and Amsterdam: Institute of Network Cultures, 2008. p. 357.

12 | Eric Kluitenberg, Transfiguration of the Avant-Garde/The Negative Dialectics of the Net, posting to nettime mailing list, 23 January, 2002, http://www.nettime.org/Lists-Archives/nettime-l-0201/msg00104.html.

13 | Eric Kluitenberg, Delusive Spaces. Essays on Culture, Media and Technology, Rotterdam: NAi Publishers and Amsterdam: Institute of Network Cultures, 2008. p. 333.

14 | Jeffrey Barnouw, 'The Morality of the Sublime: To John Dennis', Comparative Literature, Vol. 35, No. 1 (Winter, 1983): p. 21-42.

ningly beautiful, brightly colored complex landscape of unexplainable, unfathomable and otherworldly images and data structures. A glitch represents a loss of control. The 'world' or the interface does the unexpected. It goes beyond the borders of its known and programmed territories, changing viewers' assumptions about technology and its assumed functions (as was for instance the case during the September 11 broadcast), and comes to seem profoundly irrational in its 'behavior'. The glitch makes the computer itself suddenly appear unconventionally deep, in contrast to the more banal, predictable surface-level behaviors of 'normal' machines and systems. In this way, glitches announce a crazy and dangerous kind of *moment(um)* instantiated and dictated by the machine itself.

The concept of moment(um) is twofold: first of all there is the *moment*, which is experienced as the uncanny, threatening loss of control, throwing the spectator into the void (of meaning). This moment then itself becomes a catalyst, with a certain *momentum*. Noise turns to glitch when it passes a momentary *tipping point*, at which it could tip away into a failure, or instead force new knowledge about the glitch's techné, and actual and presumed media flows, onto the viewer.

Through the distorted images and behaviors of machinic outputs, the viewer is thrown into a more risky realm of image and non-image, meaning and non-meaning, truth and interpretation. The machine no longer behaves in the way the technology was supposed to. Its glitching interface, strange sounds and broken behavioral patterns introduce tension into user intentions; an astonishing image (or sound) must be somehow negotiated amidst a normally much more boring masquerade of human computer relations. Though at first the viewer reacts with shock and perceives the experience as a loss, the glitch cannot be subdued as a solid state of perception. Just as the understanding of a glitch changes once it is named, so does the notion of transparency or systemic equilibrium supposedly damaged by the glitch itself. The 'original' experience of rupture is moved beyond its sublime moment(um) and vanishes into a realm of new conditions. The glitch has become a new mode; and its previous uncanny encounter has come to register as an ephemeral, personal experience of a machine.

TECHNOREALISM AND THE ACCIDENT OF ART

I can no longer use the figure without destroying it, so I'd rather be abstract.[15]
- MARK ROTHKO

Notions of disaster, aesthetics of failure and accidental events have been integral to modern and contemporary art, Avant-Garde progressions and turnings. With the growing importance of technology, especially so in the modern century, it is the accident that becomes immanent to culture, as Virilio has emphasized most strongly among media theorists:

> To invent the sailing ship or steamer is *to invent the shipwreck*. To invent the train is *to invent the rail accident* of derailment. To invent the family automobile is to produce the *pile-up* on the highway. To get what is heavier than air to take off in the

15 | Sylvere Lotringer and Paul Virilio, The Accident of Art, Semiotext(e): New York, 2005. p. 22.

> form of an aeroplane or dirigible is *to invent the crash*, the air disaster. As for the space shuttle, *Challenger*, its blowing up in flight in the same year that the tragedy of Chernobyl occurred is the *original accident* of a new motor, the equivalent of the first ship-wreck of the very first ship.[16]

In correlation with Gombrich, Virilio argues that although many people encounter accidents as negative experiences, an accident can also have positive consequences. The accident doesn't only equal failure, but can also 'reveal something absolutely necessary to knowledge'.[17] To Virillio, the accident resides beyond the classical opposition of functional versus dysfunctional. In the introduction to the Deaf '98 festival Reader, which was largely dedicated to Virilio's theories on the accident, the accident is even described as *hyper-functional*. The accident (and thus the glitch) shows a system in a state of *entropy* and so aids towards an understanding of the ultimate functioning of a system. This opens up space for research and practice, and the arts are a special domain for this.[18]

In *The Accident of Art* (2005), Virilio argued that art itself has been terrorized by the last century; it has been devastated consecutively by the two World Wars, the Holocaust and nuclear power. Dadaists and Surrealists cannot be understood without World War 1; they are its casualties, the 'broken faces' or war victims that used automatic writing as their machine-gun.[19] Virilio explains how WW1 blew reality into pieces and how the cubist painter Georges Braque collected those pieces and put them back together, not just as a formalist experiment or as a destruction of perspective but as an artistic realism appropriate to the techno-cultural present. For Virilio, while figurative work retreats, this category of Abstract art is 'not really abstract'.[20] Because the war disfigured, destroyed and mutilated reality, as much as it did human bodies and outdoor spaces, realist conventions (formerly/formally understood) were no longer reproducible. Thus, many artists could only use some (destroyed or mutilated) form of figuration. This understanding leads Virilio to conclude that in the art of the accident, there should be a differentiation between non-figurative and disfigured art.[21] Such a 'formal' comprehension of technological realisms makes for all kinds of disaster or accident related art. In the digital realm, what has come to be known as glitch art deals with the digital dimension of error, accident and disaster from different angles, within a larger context of cultural meaning.

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16 | Paul Virilio and Julie Rose, The Original Accident, Cambridge: Polity Press, 2007. p. 10.

17 | Sylvere Lotringer and Paul Virilio, The Accident of Art, Semiotext(e): New York, 2005. p. 63.

18 | Andreas Broeckmann, Joke Brouwer, Bart Lootsma, Arjen Mulder and Lars Spuybroek, The Art of the Accident, NAI Publishers/V2_Organisatie: Rotterdam, 1998. p. 3.

19 | Andreas Broeckmann, Joke Brouwer, Bart Lootsma, Arjen Mulder and Lars Spuybroek, The Art of the Accident, NAI Publishers/V2_Organisatie: Rotterdam, 1998. p. 3.

20 | Sylvere Lotringer and Paul Virilio, The Accident of Art, Semiotext(e): New York, 2005. p. 19-21.

21 | Sylvere Lotringer and Paul Virilio, The Accident of Art, Semiotext(e): New York, 2005. p. 19-21.

A Phenomenology Of Glitch Art

"Failure" has become a prominent aesthetic in many of the arts in the late 20th century, reminding us that our control of technology is an illusion, and revealing digital tools to be only as perfect, precise, and efficient as the humans who build them.[01]

- KIM CASCONE

THE PREDICAMENTS OF DEFINING GLITCH ART

Artists often find themselves on a frontline, reflecting on the cultures, politics and technologies of their time. Over the last decades, audiovisual media and computers have gradually gained more and more importance in an art field that is still fundamentally ruled by classical media forms and genres. Noise itself is of course not new; similarly, contemporary glitch art relates to a long history of noise art and artists battling in different ways against media forms and their flows and conventions, including especially what I have outlined as the convention of transparent immediacy.

While not being new, noise art arises unpredictably in new forms across different technologies and cultural scenes. Over time, noise artists have migrated from exploring the grain, the scratching and burning of celluloid (for example, A COLOUR BOX by Len Lye, 1937) to the magnetic distortion and scanning lines of the cathode ray tube (a significant work being Nam June Paik in MAGNETTV in 1965). Subsequently, glitch artists wandered the planes of phosphor burn-in, as Cory Arcangel did 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 cracking LCD performances took place (of which my favorite is %SCR2, by Jodi, under the Pseudonym webcrash2800 in 2009).

To some artists, myself included, it has become a personal matter to break the assured informatic flows of media. While normally, transparent media screens generate conventional impressions of immediacy, there is a desire to force the viewer to think beyond his comfort zones. Glitch artists make use of the accident to 'disfigure' flow, image and information, or they exploit the void – a lack of information that creates space for deciphering or interpreting the process of creating (new kinds of) meaning. Through these tactics, glitch artists reveal the machine's techné and enable critical sensory experience to take place around materials, ideologies and (aesthetic) structures. Their destructive or disfiguring processes have no technological name, definition or explanation (yet). For this reason, it is necessary to not only define and categorize glitch at technological levels, but also to look closely at how specific media are exploited on a more complex techno-*cultural* level. The artists I discuss here include Ant Scott, 5VOLTCORE Gijs Gieskes and Jodi. Of course many other artists whose practices are invested in the moment(um) or culture of glitch could have been included here. An actual historiography would for instance also include signal processing artists like Karl Klomp, Lovid, Morgan Higby-Flowers and Max Capacity, aesthetic glitch-tricksters like Jon Satrom, jonCates, fabric artist Melissa Baron, and databend generative artists such as stAllio!, glitch-irion Pixelnoizz and Hellocatfood. This historiography is still unwritten (partly because it is still in progress).

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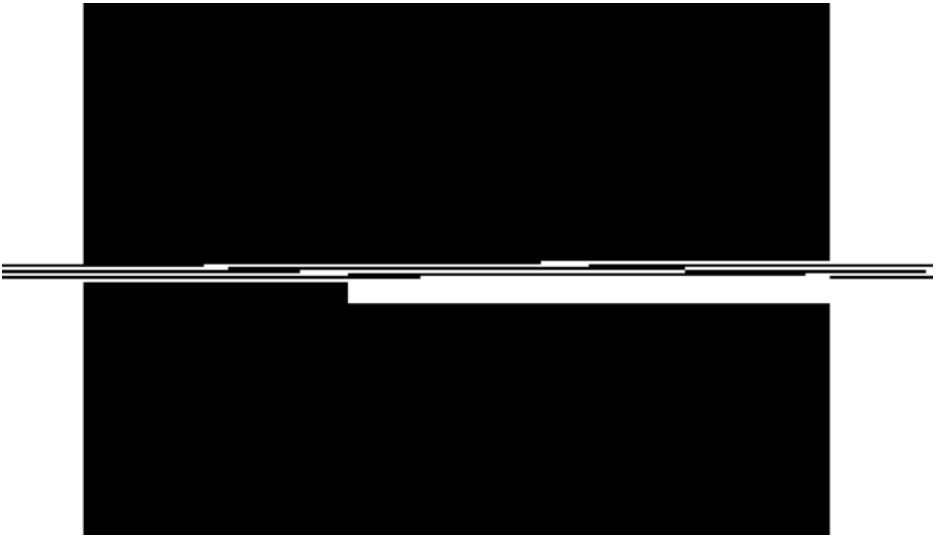
01 | Kim Cascone, 'The Aesthetics of Failure: Post-Digital Tendencies in Contemporary Computer Music', Computer Music Journal 24.4 (Winter 2000): p. 13.

As is clear by now, the inherent openness of glitch as a concept makes glitch *art* difficult, if not impossible, to define. Although a glitch can take place strictly within the computational system, the majority of artifacts that are called or referred to as glitches within glitch art are not purely informational, but make sense only through a synthesis of agents and contexts involved. Glitch is post-procedural (a break from a procedural flow) and so, dialectically connects to, while departing from, a linear and informational model of media communication ('information source-> encoder-> channel-> decoder-> destination'), while also incorporating contextual and social processes of interpretation and making meaning. Furthermore, it is necessary to recall that the word 'glitch' in 'glitch art' is often used as a metaphorical concept, even by glitch artists, and therefore varies from the standalone technical or informational term 'glitch'.



ANT SCOTT. SUQQE. DIGITAL SCREENSHOT. 2002.

The complexities that must be faced by a theorist or researcher when trying to define or demarcate some kind of 'essence of glitch art' (if this is even possible) come to the foreground upon close engagement with Ant Scott's (Beflix) work. For years, Ant Scott has been a leading figure in the realm of glitch art. From 2001 until 2005 he published hundreds of glitch images – static and animated – on his blog, appearing here as the first glitch artist actually using the term 'glitch art' for his work. These images don't have a common source; further, some of them are 'found' glitch artifacts turned into or framed as *art*, while others are intentionally made from scratch by the artist. Ant Scott describes his series GLITCH (2007), a collection of 25 'works' (small digital renders of lo-fi captured glitches) accessible via his home page, as the best of his 'pure glitch' phase. The images, which at first might appear bewildering, are actually created from computer crashes, software errors, hacked games, and megabytes of raw data turned into colored pixels.[02] They originate or are con-

02 | Ant Scott, GLITCH #12, GLITCH ART, 2007, http://www.Ant Scott.com/works/glitch.php?id=12.

structed from thorough trial and error processes, to which Scott carefully reassigns colours, and crops select areas of interest. The result is the works that make up the GLITCH series.

Ant Scott's working process presents all kinds of dilemmas in the quest for a definition and categorisation of glitch art. *What kind of 'glitch' is this 'glitch art' exploring? How can the glitch be explained as an unexpected, abnormal mode of operation, when the artist's working process and what he aims for are these abnormalities to begin with? Can the intended error be really described as erroneous?* On the other hand, Scott's wide-ranging interrogation of glitch aligns with other aspects of glitch that I have outlined. A glitch can indeed exist within and across different systems, for instance the system of production and the system of reception. Similarly, a glitch can depend on different actors within these systems; not just the technological elements that Shannon described, but also the ideological and cultural contexts of the technology, which brings aspects of time, place and structure (aesthetics) into the art work, all of which differ *between* different publics, involved in the process of making meaning. Despite glitch art having no solid, or single definition through time and place, just as Virilio argued that it is helpful to describe a difference between non-figurative and disfigured art, I believe it is useful to make a similar distinction between different dimensions of 'glitch' in 'glitch art'. Glitch art then potentially incorporates a range of works that are post-procedural, deconstructive, accidental and so on, alongside works more focussed on a final end-product, aesthetic or design.

CATEGORICAL PRECURSORS: A BINARY APPROACH TO GLITCH ART?

The post-procedural essence of glitch art is opposed to conservation; the shocking perception and understanding of what a glitch is at one point in time cannot be preserved for a future time. The artist tries to somehow demonstrably grasp something that is by nature unstable and ungraspable. Their commitments are to an unconventional utopia of randomness, chance and idyllic disintegrations that are *potentially* critical. The core of a work of glitch art is therefore best understood as the momentary culmination of a history of technological and cultural movements, and as the articulation of an attitude of destructive generativity. In short, glitch art practices are invested in processes of non-conforming, ambiguous re-formations.

At the same time, however, many works of glitch art have developed into archetypes and even stereotypical models, and some artists do not focus on the post-procedural dialectics and complexity of glitch at all. They skip the process of creation through destruction of a flow and focus only, directly, on the creation of new formal designs for glitch, either by creating the final imagistic (or sonic) product, or by developing shortcuts to recreate the latest-circulated glitch re-formation. Purposive, design-driven efforts at glitch can be created in plug-ins, filters or 'glitching software' that automatically emulate, simulate or mimic a particular glitching method. These tools tend to surrender 'affect' (the shocking *moment(um)* of glitch) in favor of 'effect'.

Design-driven glitch art has tended to be referred to as artificial or 'glitch-alike'. Iman Moradi has gone so far as to develop a true-false binary to deal with these matters of glitch imitation, which he explains with the following statement and schema:

> Because of the intrinsic nature of this imagery and its relation to pure glitches, both in terms of process and viewer perception, I felt the need to form a word that adequately describes this artifact's similarity with actual glitches and present it as an obviously separate entity. Thus the term "Glitch-alike" came about to fulfil this role. [...] Glitch-alikes are a collection of digital artefacts that resemble visual aspects of real glitches found in their original habitat.[03]

Pure Glitch	**Glitch-alike**
Accidental	Deliberate
Coincidental	Planned
Appropriated	Created
Found	Designed
Real	Artificial

While Moradi's scheme can be a useful starting point for consideration, I also see a lot of issues with it. The creation of a binary opposition within glitch art seems not only too simple, but also in conflict with a genre that so often scrutinizes and aims to violate binary oppositions. The glitch genre is primarily about breaking categories *open*, uncovering what is in-between and beyond. The 'glitch' in 'glitch art' does not only depend on technology, but also involves ideologies and visual structures (aesthetics) including the artist's individual perspective, and the context of viewing. Instead of denouncing a non-informational glitch (or glitch practice) as artificial or false, I think it is more interesting to research why and how a particular investment in glitch is actually understood as *glitch art* within a larger media culture. This can be done by describing existing cultural instantiations of, and relations between, a range of differently spawned glitch art practices in context.

FROM PASSIVE APPROPRIATION OR 'PURE GLITCH ART' TO ACTIVE, 'POST-PROCEDURAL GLITCH ART'

When all is said, what remains to be said is the disaster. Ruin of words, demise of writing, faintness faintly murmuring: what remains without remains (the fragmentary).[04]

- MAURICE BLANCHOT

At a most basic level, glitch artists can challenge the standard mode of operation of a system by appropriating glitches that are spawned (partially or completely) by production processes. Typically, these glitches are encountered accidentally and often unstable (both in their process and in terms of results), which means that the artist has to somehow capture the glitch, in order to appropriate and present it to his audience. An example of this first kind of glitch art is an image by Greg J. Smith. The image shows a Mac interface going haywire for no understandable reason. Although the image can be described as compelling or titillating in terms of aesthetics, the work does not signify more than what was captured in the first place: a broken computer interface. It is a passive capture of failure, sent off to an audience.

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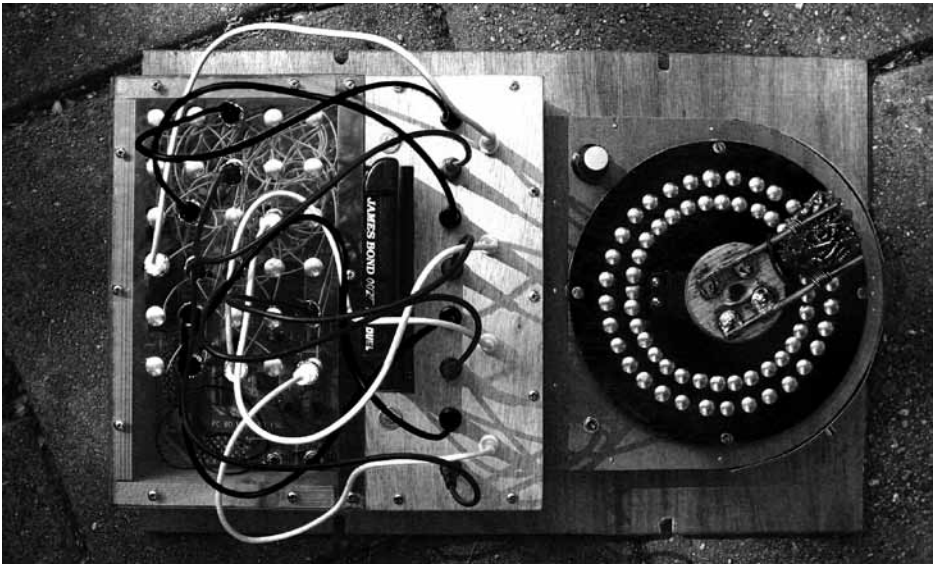
03 | Iman Moradi, Glitch Aesthetics, unpublished bachelor thesis, Huddersfield, UK: University of Huddersfield, 2004. http://www.oculasm.org/glitch/download/Glitch_dissertation_print_with_pics.pdf, p. 10.

04 | Maurice Blanchot, The writing of the disaster, Nebraska: University of Nebraska Press, 1995. p. 33.

Another form of glitch art relies on errors within the production system that the artist actively triggers. These purposively triggered breaks from the flow are at least partially understood and can often be debugged. In this case the artist chooses to exploit a production system (the protocols built into the machine's hard- and software), or the input that makes a system's protocols behave in a particular way, or both. An example of this second category of glitch art is 5VOLTCORE. During their live performances, the men of 5VOLTCORE attack the computer with power interruptions from an audio signal, which produces short circuits that generate unexpected signals.[05] This process tortures the machine and makes it scream out shreds of powerfully colored images, until the computer eventually dies, which ends the performance. In their performances, 5VOLTCORE take issue with the governing charge of the computer. Working in direct opposition to the computer's procedural flow, actively overturning it, their aggressive glitches lead always to one fatal endpoint, rather than breaking open the future; they are not so invested in the generative qualities of post-procedural glitch.

POST-PROCEDURAL GLITCH ART OR THE INTENTIONAL FAUX PAS



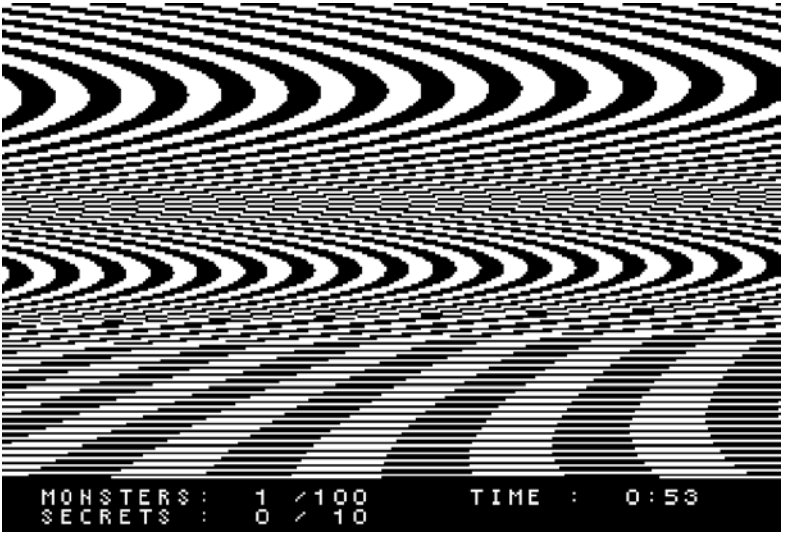
GIJS GIESKES. CIRCUITBEND SEGA MEGADRIVE2.2. MODIFIED SEGA. 2007.

A less aggressive and more 'positive' example of an intervention in machinic flow can be found in Gijs Gieskes' work. Gieskes takes machines apart and changes their circuitry. Through circuitbending, he redefines the technology and its contents, penetrating and exploring the machine from the inside. First, he dismantles the system and then he de-constructs and re-appropriates it. One of his circuitbent machines, the CIRCUITBEND SEGA MEGADRIVE2.2 (2007), consists of a Sega console with a modified circuit, actively transforming the videogame console into an autonomous video synthesising machine.

05 | 5VOLTCORE, 5VOLTCORE ||| SHOW, 2006, http://5voltcore.com/typolight/typolight257/index.php/show.html.

Gieskes did not add any code to the chips or the videogame; he only changed the circuitry of the console. This means that the glitches that appear on the television screen were already part of the videogame's software (the ROM); the generated visuals are readymade, manipulated appropriations of mass-produced objects. The look and feel of these videographic utterances is dependent on the technology inside the original machine. This introduces questions around the built-in aesthetics and conventional usage of the CIRCUITBEND SEGA MEGADRIVE2.2.[06] Gieskes' work perverts a classical sense of aura, which according to Walter Benjamin, would be built upon unicity and authenticity. Contrarily, the CIRCUITBEND SEGA MEGADRIVE2.2 doesn't possess one particular 'here and now'.[07] Instead, the artwork is generated every time the machine is activated. Therefore, the aura is situated within the interpretations and context of the user or viewer and the changed technology of the machine.

Another example of the *intentional faux-pas*, or glitch art that is in violation of accepted social norms and rules, is UNTITLED GAME (1996-2001), a combined series of 11 modifications of the first person shooter game (FPS) QUAKE 1 by the Dutch/Belgium art duo Jodi. Jodi makes subversive glitch art that battles against the hegemonic flows of proprietary media systems. They work to reframe users' or consumers' perception of these systems. The duo's work is often simultaneously politically provocative *and* confusing. This is partly because Jodi originally never prioritized attaching explanations to their work, but also because of the way in which their practice itself overturns generic expectations. They challenge the ideological aspects of proprietary design by misrepresenting existing relationships between specific media functionalities and the aesthetic experiences normally associated with them.



JODI. UNTITLED GAME. 11 QUAKE MODIFICATIONS FOR PC MAC. 1999. MODS: E1M1AP AND CTRL-F6.

06 | Gijs Gieskes, CIRCUITBEND SEGA MEGADRIVE2.2, 2007, http://gieskes.nl/circuitbending/?file=segamegadrive2.

07 | Walter Benjamin, 'The Work of Art in the Age of Mechanical Reproduction', in Hannah Arendt (ed.), Illuminations, New York: Schocken, 1968, pp. 219-254. p. II.

In an online interview in 2006 I encouraged Dirk (di from Jodi) to break the duo's silence around the description of their art. About the work UNTITLED GAME, Dirk said:

> Our point was to erase and make this other version of Quake and then deny [the Quake game] the name. [...] to call it UNTITLED GAME (meant) that it was just a prototype of any of these games that (consists of) these kind of standard construction elements and things you can do as a user.[08]

In UNTITLED GAME, Jodi critically exploited errors in the source code of the original game. The glitches created by these modifications destabilize and alter the normal laws of physics, so that steering and shooting becomes unpredictable and illogically geared, while the sounds and designs of the game itself are also modified to surprise. By changing the algorithms that define the videogame's playability, the game becomes seemingly 'unplayable', at least, according to what is expected as normal game-play. The game itself is not totally ruined; it actually functions quite well, albeit in a wholly non-Newtonian, visually nonsensical way that the FPS-player is *not* trained to be aware of, or competent with. In E1M1AP for instance, one of the 11 mods making up UNTITLED GAME, Jodi used the gravity algorithm to create unsettling vortex effects, while in Ctrl-F6 the collective exploited anti-aliasing to create cubes filled with beautifully evolving moiré patterns.[09]

UNTITLED GAME is an intentionally ruined videogame that questions conventional and normative videogame goals, for example 'self-improvement', 'competition', and 'winning', all of which are naturally embedded in the software design codes of the games that dominate the videogame battlefield. The modified algorithms, visuals and sounds of UNTITLED GAME generate a new ensemble of conventions, aims and feelings, in which visual and dimensional experimentation takes hold over competitive logic, and the outcome of the game is no longer a score but a colorful, disconcerting experience.
In this way, UNTITLED GAME rebels against the techno-social determinism of (game) technology and consumption, and frames this particular medium of 'play' as a taken for granted technique of enculturation. When read through McLuhan – who as early as the 1960s identified media technological developments as the most important (and at that time, under-acknowledged) sites of social cultivation – Jodi seem to indicate that not only *media content and socially determining genres* (game conventions), but also *specific material forms* (interfaces) and *techné* (the game's operational elements) are important to interrogate as objects of study. Recall McLuhan's own words here:

> "the medium is the message" because it is the medium that shapes and controls the scale and form of human association and action. The content or uses of such media are as diverse as they are ineffectual in shaping the form of human association. Indeed, it is only too typical that the "content" of any medium blinds us to the character of the medium.[10]

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08 | Rosa Menkman, Beauty in the Age of Digital Art; aesthetic, poetic or rhetoric, June 2006. http://rosa-menkman.blogspot.com/2006/05/beauty-in-age-of-digital-art.html.

09 | Rosa Menkman, Jodi op de Pijnbank, unpublished master thesis, Amsterdam: University of Amsterdam, 2006, http://home.student.uva.nl/rosa.menkman/Jodi%20op%20de%20pijnbank.pdf.

10 | Marshall Mcluhan, Understanding Media: The Extensions of Man, New York: McGraw Hill, 1964.

In digital glitch art like UNTITLED GAME, the medium is redefined as a platform that doesn't follow its genre, form or technique. This triggers the user to reflect upon her conventional frames of reference for the particular game and perhaps even the commercial game in general. The work criticizes the flow of a specific *medium*, its *interface* and its inherent *conventions*, but does not necessarily break it (as opposed to 5VOLTCORE's performance). The fact that the game still 'works' while being programmed to glitch, makes it all the more critically challenging as media experience. Jodi shows that software is more than just a preprogrammed tool: it is a materialization of social modalities, which can furthermore be endlessly re-modified to different interpretive or social conclusions.

The irrational and conceptual glitches within UNTITLED GAME, its voiding of original and received meanings, forces the viewer to make active sense of the work. The structures of original meaning are intentionally ruined. But in this case, 'ruin' is both a conceptual orientation and a technique that underlines the constructedness of media (art), forcing the viewer to consider the computer as no longer just a device of standardization but instead as a technology that functions within a social reality. Only after reflecting on this new form of the work, can the user see that what the glitch does is not just destroy the old videogame, but in fact modify its existing denotations and exchanges, entangling it within new lines or architectures of meaning. The 'techniques of the void' – the systematic distortion of communication – helps to open media up for discussions of their internal politics. This is how, through the tactics used within these glitched games, users can re-territorialize these techniques.

THE CONCEPT AND TECHNIQUE OF RUIN

You cannot prohibit the catastrophe, you must surf it![11]

- PAUL VIRILIO

Today news and current affairs is generated and spread not only through rich and powerful press monopolies and infrastructures, but at the same time through smaller, more independent and autonomous agents that do not require a great capital outlay to contribute to debate online. This is why social blogging softwares like Blogger are often described as democracy-enhancing tools; they are celebrated as an ideal medium supporting the political mythology of 'freedom of speech'.[12]

During 2006 and 2007, Jodi made the work <$BLOGTITLE$>, based on the social publishing tool Blogger, from Google.[13] <$BLOGTITLE$> looks like a Blogger page in a broken state. The pages generated by Jodi's (mis)usage of the tool are either filled with gibberish or in ruins. It's hard to say: perhaps you are looking at back-end code, broken on to the surface of the site, or perhaps it is just nonsense that was never part of any codified language system?

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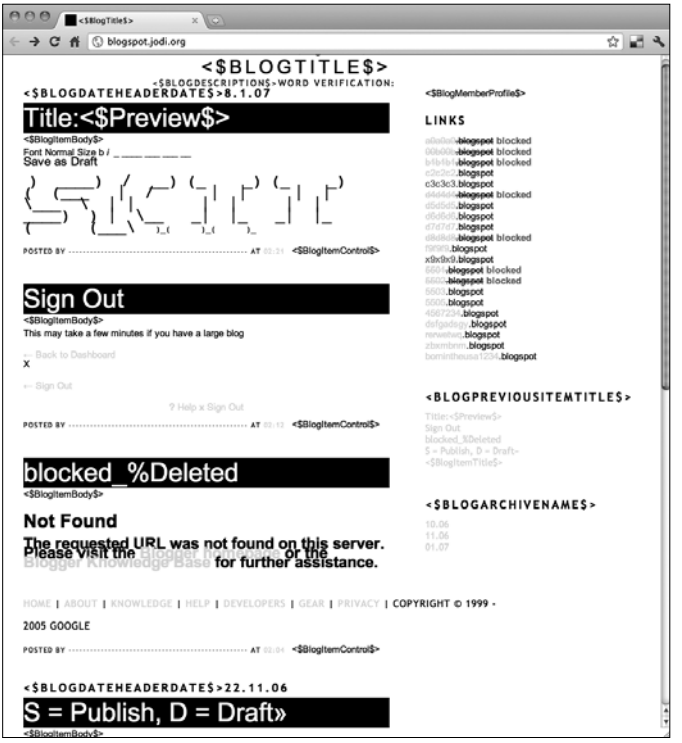
11 | Andreas Broeckmann, Joke Brouwer, Bart Lootsma, Arjen Mulder and Lars Spuybroek, The Art of the Accident, NAI Publishers/V2_Organisatie: Rotterdam, 1998. p. 30-32.

12 | Donald Matheson, 'Weblogs and the Epistemology of the news: some Trends in Online Journalism', Sage Journals, London: SAGE Publications, Thousand Oaks CA and New Delhi Vol 6.4 (2004): pp. 443-468. p. 445.

13 | Jodi, <$BLOGTITLE$>, 2006-2007, http://blogspot.jodi.org/.

In these works, Jodi indeed plays with different language systems, for instance the visual and the non-visual source (code) of the Blogger software. Template formats such as the title of the blog, the post headers and certain blog addresses in the link list appear all in ruins, while Blogger-specific images like comment-icons, dates and additional otherwise functional visual elements are now reduced to theatrical objects. What is normally invisible as the infrastructure of the blog – snippets of code and interface commands like "S = Publish, D = Draft»" or "Allow New Comments on This PostYes No"[14] – are moved to the front of the site, where normally only a 'human discourse' would be visible.

Jodi's <$BLOGTITLE$> partially exposed the mythical notion of 'democracy enhancing' social blogging tools, when Blogger blocked 7 of its 22 blog pages. In this case, the process of 'free online publishing' resulted in censorious destruction. This unforeseen eventuality made it clear that Blogger-users (any blog users) answer to a built-in (political) system and don't operate completely under their own authority. Moreover, the system is governed by the belief (shared by both the creators of the technology, the conventional users, and the audience) that the software will be used to distribute only conventionally formatted knowledge. Bloggers that do not subscribe to the conventions risk the possibility of being blocked or having their blogs completely deleted.



JODI. MY BLOG IS BLOCKED. BLOGSPOT.JODI.ORG. 2007.

14 | Jodi, <$BLOGTITLE$>, 2006-2007. http://blogspot.jodi.org/.

<$BLOGTITLE$> stands apart as a purposeful artifact that captures what Deleuze and Guattari have described as a 'line of flight': an elusive, divergent, inherently political moment(um) through which axioms are questioned, genres are broken open and categories are created.[15] Jodi uses the glitch to emphasize a rejection of what can be referred to as 'software-determinism' or in the case of blogger, 'platform-determinism'. In an interview with Tilman Baumgartel, Jodi states: 'It is obvious that our work fights against high tech. We also battle with the computer on a graphical level. [...] We explore the computer from inside, and mirror this on the net'.[16] <$BLOGTITLE$>, as an example of this working method, enacts this battle at the border between system and entropy, standardization and corruption, expression and code, meaning and non-meaning, thwarting the user and the viewer's expectations and understandings.

<$BLOGTITLE$> is generated within the system of Blogger, but does not follow the rules, the language or the syntax of that blogging system. On the one hand, the work can be understood as a social criticism towards Blogger and other celebrated 'direct' read/write web 2.0 platforms or as a blog that entails a (re-shuffled) sign system through which the viewer can navigate and glean her own select fragments of meaning.

In <$BLOGTITLE$>, artistic negation has become a generative and creative force. In a seeming void of meaning, the spectator is forced to use his imagination while reflecting on the work. The glitch's formal fragmentation signifies that the work is 'open' to interpretation and meaningful engagement. This *new* text is no longer a work that displays or retells conventions, but a writerly software where meaning can be actively (re)constructed. By ruining the Blogger medium, Jodi's use of formal fragmentation opens the platform itself up to deconstruction, interpretation and further active engagement. As a result, the meaning of the ruined work is never finished, whole or complete. Instead of being static it differs from reading to reading, or with each fragmented element of the syntax. In this sense, the work has become a virtual space where the audience can actualize an infinite amount of potential meanings. However, for the reader to actually give meaning to the ruins, they must take the initiative of imposing (their own select) new constraints, new frameworks of analysis and limitations on other possibilities. The viewer becomes aware that every act of creating meaning is *also* just as strongly an act of destruction (of more infinite possibilities).[17]

Moreover, in the case of <$BLOGTITLE$>, this openness also had a negative consequence: Blogger interpreted the blog as a malicious spamblog and consequently blocked it. This act could be described as a rather rigorous 'death of the author', in which the meaning of the work is not negotiated, but instead dismissed and deleted. In fact this could be understood as a second death. The author 'dies' in a Barthesian sense at the moment of (web) 'publication' when the viewer's interpretation takes over from authorial intention, but also in a second and more violent way when the corrupted, 'writerly' text is totally eliminated from the blogosphere altogether.

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15 | Gilles Deleuze and Pierre-Félix Guattari, A Thousand Plateaus: Capitalism and Schizophrenia, Trans. B. Massumi, Londen: The Athlone Press, 1988. p. 213.

16 | Tilman Baumgärtel, 'TP: Interview with Jodi. We love your computer', Telepolis. May 2006, http://www.heise.de/tp/r4/artikel/6/6187/1.html.

17 | Gilles Deleuze and Claire Parnet, Dialogues II, London and New York: Continuum, 2006. p. 112.

<$BLOGTITLE$> opens up and intervenes into the normally inter-locked relations between conventional information, a possible message, and the back-end coding of Blogger, and treats these relation as a system that can be modified or expanded towards new possibilities through 'glitching'. Here glitches articulate an alternative language that blends *systems* into a form that nobody can read (yet). The 'voided' <$BLOGTITLE$> shows the conventions by which the user/reader navigates online, and the norms that help him to operate these daily technologies transparently. The constructedness of such discourse, in terms of locked down proprietary software is not necessarily negative in itself, but sometimes (as <$BLOGTITLE$> suggests) leads to generalized assumptions and the under- or non-acknowledgement of invisible political forces in the *form* of underlying conventions. The glitch can help us uncover these obfuscated political dimensions as well as create strategies to see through them. In <$BLOGTITLE$>, Jodi shows that a glitch can be completely constructed (by the artist), but also that such constructs can in turn reveal the constructedness of software-generated knowledge and expression. Jodi's investment in glitch shows that Blogger can, like QUAKE 1, be used in many more ways than users pacified by convention might assume.[18]

CREATING THE 'PERFECT GLITCH' USING CRITICAL MEDIA AESTHETICS

[The] absence of meaning is in this case the presence of all meanings, absolute ambiguity, a construction outside meaning.[19]

- JACQUES ATTALI

Within the constructed ruins of glitch, new possibilities and new meanings arise. There is something more than just destruction: new understandings lie just beyond the tipping point. The glitch generates new understandings of techno-culture through the gestations of *Glitchspeak*, glitch's constantly growing vocabulary of new expressions.

I use the term 'Glitchspeak' in opposition to George Orwell's 'Newspeak'. For Orwell, Newspeak is a language whose political goal it is to shrink its vocabulary and grammatical nuance over time, so as to render any alternative thinking – which he referred to as 'thoughtcrime', or 'crimethink' – impossible. The final goal of Newspeak is to construct a society in which only politically approved (dominant and conventional) statements can be articulated, at the expense of the possibility of free expression, rebellion, and so on.[20] Fighting Newspeak, Glitchspeak contests the obfuscated limitations of language created by proprietary technology, to capture the constant transformation and growing wealth of glitch artifacts and their meanings.

Most glitch artists are always, directly or indirectly, trying to answer one question: *How much agency should I provide to my systems of destruction?* Their post-utopian strategies aim to identify where the 'tipping point' is: *When and how can a glitch be found and transition*

18 | Michael Truscello, Behind the Blip: Essays on the Culture of Software (review), Cultural Critique, no. 63, (2006): pp. 182-187.

19 | Jacques Attali and Brian Massumi, Noise: The Political Economy of Music, Manchester: Manchester University Press, 1985. p. 33.

20 | George Orwell, Nineteen Eighty-Four, London: Secker and Warburg, 1949. p. 372.

into something new? The perfect glitch exists, momentarily, at the shocking tipping point between (potential) failure and a movement towards the creation of a new understanding. The glitch's inherent moment(um), the power it needs or has to pass through an existing *membrane* or semblance of understanding, helps the utterance to become an unstable articulation of counter-aesthetics, a destructive generativity. As an exoskeleton for such (post-utopian) progress however, the glitch does not just take place on a critically ruined surface. The choice to accept the glitch, to welcome it as an aesthetic form, means to accept a new critical dialectic that makes room for error within the histories of 'progress'.

Following this dialectic of *critical media aesthetics*, the glitch can obtain a place within larger media cultural scenarios of political productivity and evolution. The role of glitch artifacts as (instances of) critical media aesthetics is, again, twofold. On the one hand, these aesthetics show a medium in a critical state: a ruined, unwanted, unrecognized, accidental and horrendous moment. This transforms the way the consumer perceives its normal operation (every accident transforms the normal) and registers the passing of a tipping point after which it is possible for the medium to be critically revealed at greater depth. On the other hand, these aesthetics critique the medium itself, as a genre, interface and expectation. They radically challenge the technological, social or ideological constructedness of all media cultural formations while producing a theory of reflection.

THE TIPPING POINT OF COOL: CRITICAL MEDIA AESTHETICS' BECOMING COMMODITIES

In *The Laws of Cool*, Alan Liu asks himself: 'What is "Cool"?' He describes that cool is the ellipsis of 'knowing what is cool and of withholding that idea'. 'Cool is information designed to resist its status as information, a paradoxical "gesture" through which the unknown struggles to arise (or resists arising) in the midst of the economies of knowledge work'.[21] Liu concludes that those who insist on asking what is cool are definitely uncool. Keeping Liu's statement in mind and thus paradoxically over-theorizing cool glitches, I suggest that the cool glitch can be found at the moment of its preliminary non-definition; when it is still denied its existence – before its tipping point – where errors are deleted, or remain ignored, blocked or unaccepted, unwilled.

Liu-cool glitches only exist during the moment(um) of glitch – before the glitch is overcome as failure or has become a new established form. To think a glitch is 'cool' is to acknowledge that the glitch is still actively reflected upon and has not yet been established. Indeed the coolest work of glitch art is denied existence at the same time as it incorporates this very dismissal into its momen(tum), so as to implicitly say something about this action: the deletion of <$BLOGTITLE$> gave Jodi the opportunity to exploit this Liu-cool logic and incorporate it into the informational lure of their work.

Cool is in a constant state of flux, as is 'cool glitch art'. The latter exists as an assemblage relying on, on the one hand, the construction, operation and content of the technology (the medium) and on the other hand the work, the writer/artist, the interpretation by the

21 | Liu, Alan. 'What's cool?', in The Laws of Cool: Knowledge Work and the Culture of Information, Chicago: University of Chicago Press, 2004, pp. 176-179.

viewer and/or user (the social meaning) and the work's aesthetics. The tipping point, the application of (aesthetic) meaning or value, can move the glitch from the realm of cool glitch art to *hot, established* or even *commodified*. It is however important to realize that not all glitch art is 'cool', or progressive or something new. The popularization and cultivation of an avant-garde of mishaps and breakages has indeed become predestined and unavoidable. What is now (or next) a glitch will become a *hot fashion* soon enough - reproducible, standardized, automated by softwares and plug-ins. This movement is an integral part of a movement that should be theorized as the genre of glitch art.