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A FAUSTIAN EXCHANGE: WHAT IS IT TO BE HUMAN IN THE ERA OF UBIQUITOUS TECHNOLOGY?

Imaginary computational systems: queer technologies and transreal aesthetics

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Abstract Turing, like queerness, was invested in creating logics and codes, which are undoubtedly intertwined with his desires as a human, scientist, and homosexual. We are interested in Turing as a striking figure in queer and feminist histories, as the hidden queer figure behind the Apple logo and as a creator of logic and worlds (Halberstam in Fem Stud 17(3):439–460, 1991). In this paper, we first want to briefly highlight how Turing has been cast in queer and feminist histories and theories. Then, we will discuss how Turing's work and life have influenced our own artistic practices.

Keywords Art · Media art · Contemporary art · Queer · Feminism · Transreal · Queer technologies · Femme disturbance · Politics · Speculative design

1 Introduction

Becoming Transreal, Micha Cárdenas and Elle Mehrmand, UCLA Freud Playhouse, 2010 photograph by Tracy Cornish

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As a transgender woman and queer man, we are interested in Alan Turing's breasts—they provoke us—because they are a material site of a conflict between war, queerness, technology, and the state. Turing, a war hero for code-breaking during WWII, was convicted by British authorities of gross acts of indecency for being homosexual. Thus, while his computational research was prized, his homosexuality was punished by being forced to take estrogen hormones and implants.

We are particularly struck by the figure of Alan Turing at his death, a failure to the state: chemically castrated by the British government and forced to grow breasts, he committed suicide by taking a bite out of an apple laced with cyanide, based on his love of *Snow White*—what queer theorist Jose Muñoz might call a queer utopian performance (King forthcoming; Muñoz 2009). Still today, Turing remains a queer failure (Halberstam 2011), having been rejected from receiving a 2012 official pardon from the UK Prime Minister Gordon Brown, while his crucial contributions to computer science remain celebrated (Wainwright 2012).

When we look to Turing's work and his breasts, we do not necessarily think that Turing's work is queer—but that it can be queerly inflected. It is not because Turing was gay that he was creative in mathematics—but that his desires played a part in the construction of his research.

To ask whether Turing's homosexuality shaped his research, and as a result, contemporary computing, raises an interesting series of questions. Following that logic, one could similarly ask whether heterosexual mathematicians and scientists create models and technologies that are infused with heterosexuality. While materialist ontologies, such as the one proposed by French philosophers Deleuze and Guattari (1987), would reject the possibility of such essences infused into objects and concepts, we want to

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suggest that the drives and assumptions of a heterosexual sexuality produce certain ways of producing and knowing that can be embodied in objects created by heterosexual scientists, whether they are conscious of this or not. Similarly, homosexual desires can inform and help to materially construct the technicity of objects.

Turing, like queerness, was invested in creating logics and codes, which are undoubtedly intertwined with his desires as a human, scientist, and homosexual. We are interested in Turing as a striking figure in queer and feminist histories, as the hidden queer figure behind the Apple logo and as a creator of logic and worlds (Halberstam 1991). In this paper, we first want to briefly highlight how Turing has been cast in queer and feminist histories and theories. Then, we will discuss how Turing's work and life has influenced our own artistic practices.

2 Queer and feminist histories

Turing has always been a crucial figure in queer and feminist histories of digital technology, both praised and criticized. In the 90s, cyberfeminists like Plant (1997) critiqued Turing's binary logic as patriarchal and phallogocentric. But queer theorists like Halberstam (1991) have claimed that Turing's life and work reveal that gender is a technology that can be imitated, which fits nicely within the canonical queer theoretical claim that gender is a performance through imitation and repetition, which Butler (1990) in her seminal *Gender Trouble*. Media theorist Katherine Hayles (1999), in *How We Became Posthuman*, offers a different reading of gender, critiquing Turing for basing the Turing Test on gender, claiming that this proves nothing because gender is not reducible to symbols. And, as we have already cited, most recently, feminist theorist Homay King's work on Turing attempts to tease out how his computational and scientific research is infused with his erotic desires (forthcoming).

While Turing considered gender in the Turing test, his homosexuality seems quite separate from his scientific research, although Homay King has recently suggested that Turing's work, especially the Turing machine, bears connection to his personal, erotic desires (forthcoming). Following this, we are interested in heightening the connections between the personal and the professional: what would Turing's work be like if his scientific research and homosexuality were more explicitly combined? Turing, for us, is a starting point to accelerate the fusions of erotic desire—which is political desire—to the technological and scientific. In fact, this is exactly what we do in our works.

We extract from Turing and these feminist theorists the power to desire logics and to make those logics in order to construct alternatives. However, we differ from Turing in that we do not want a universal logic. Our logics are multiplicitous yet partial, erotic and embodied, uncompromising, and of the impossible. We like Deleuze's (1997) comment that "universals of communication ought to make us shudder."

3 Desiring and creating logics: the Turing machine and universal mathematical logic

We are intrigued by the Turing machine as a diagram, an abstraction. The Turing machine, importantly, is separate from the binary computational logic running on digital devices—it is an abstraction of that logic.

The Turing machine, on its own, requires a bit of performativity and imagination. In a recent episode of *Radiolab*, the Turing machine was described as "the world's most impractical machine," noting that one of its requirements is never-ending tape. We savor these small, impractical components of the Turing machine—these components that require one to imagine a logic—to imagine how a machine might perform (2012).

Just as the Turing machine is a diagrammatic mechanism for digital computation, we have been interested in constructing diagrams and abstractions for queer technologies and transreal aesthetics (Blas 2008; Cárdenas 2012). Through the imaginary computational systems we have created, one can see some of the limitations of Alan Turing's Universal Turing machine and his attempt to create artificial intelligence.

4 Queer technologies

Queer Technologies, *Disingenuous Bar* installation detail, New Wight Gallery, University of California Los Angeles, 2008, photograph by Christopher O'Leary

After learning more about cyberfeminism, Alan Turing, and the various heteronormativities and militarizations surrounding contemporary technologies, Blas began to develop queer technologies. Queer technologies is an organization that produces a product line for queer technological agency, interventions, and social formation. Queer technologies aims toward automating perverse possibilities (Queer Technologies, 2012). QT products include

1. *transCoder*, a queer programming anti-language, provides new programmatic and linguistic possibilities for the queer sociality.

Queer Technologies, *transCoder* installation display, New Wight Gallery, University of California Los Angeles, 2008, photograph by Christopher O'Leary

2. *ENgenderingGenderChangers*, a "solution" to gender adapters' male/female binary, offer a wider array of gender adapters for the increasing complexity and demands of technological compatibility. By expanding serial adapters beyond male and female configurations, *ENgenderingGenderChangers* allow for new and unforeseen serial connections. For example, the Female DB25 to Power Bottom DB25 is for the hardware risk-taker. This *ENgenderingGenderChanger* connects to a male serial cable; its hollow and seemingly ineffective interior merges with a connected flow of power and takes control of the signal, redirecting current based on pin configuration. Perfect for surreptitious data manipulation, the power bottom gender changer utilizes a pacified design to undermine traditional hardware control structures.

Queer Technologies, *ENgendering Gender Changers* installation display, New Wight Gallery, University of California Los Angeles, 2008, photograph by Christopher O'Leary

3. *Gay Bombs*, a technical manual manifesto that outlines a "how to" of queer networked activism, is a reverse discourse, a reinscription, a mutating body politic, a multitude, a queer terrorist assemblage of networked activists, deploying new technologically queer sensibilities. *Gay Bombs* is a technical manual designed to explicate and frame the discourses of queer technologies. In this user's guide, a "how to" of queer political action and formation is outlined through the use and distribution of *queer technologies*. Topics include understanding queer technological tactics, creating and organizing, working with consumerism, and managing output.

Queer Technologies, *Gay Bombs* installation display, New Wight Gallery, University of California Los Angeles, 2008, photograph by Christopher O'Leary

QT products are often displayed and deployed at the Disingenuous Bar, which offers a performative space for political support for "technical" problems. QT products are also shop-dropped in various consumer electronics stores, such as Best Buy, Circuit City, Radio Shack, and Target. Queer technologies identifies its larger discursive practices as a viral aesthetics, in that it encrypts itself within flows of capital to replicate/permeate itself in relation and tension to capital's own modulating, viral structure (Liu 2004; Blas 2012a, b).

Queer Technologies, *Disingenuous Bar* installation, New Wight Gallery, University of California Los Angeles, 2008, photograph by Christopher O'Leary

QT is particularly interested in the viral as a way to conceptualize a queer infection of media, networks, and capital. QT is also interested in the viral as a way of thinking about aesthetic practice because it suggests a parasitical relation—a kind of subversive mimicking—and definitely a queer attack on *Apple* computers. Queer technologies was developed to create another kind of technological logic rooted in queerness that would be practically, technically, and functionally queer.

Queer Technologies, *QT Logo Swarm* video still, 2008, photograph by Zach Blas

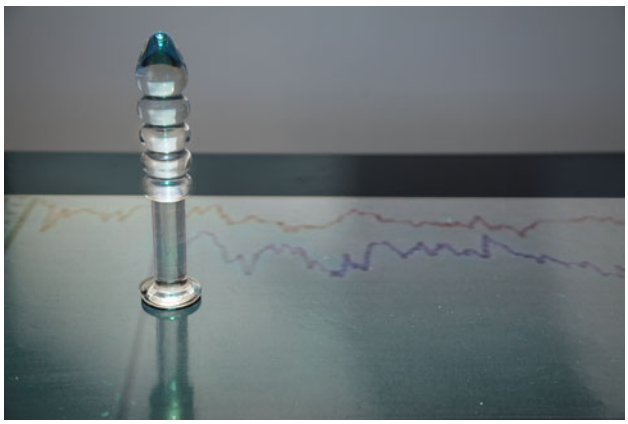
5 *virus.circus*

virus.circus.probe, by Micha Cárdenas and Elle Mehrmand, reveals another limitation of the supposed universality of systems that are computable or decidable by the Turing machine. *virus.circus.probe* is an augmented reality installation that posits an imaginary computational system that runs on ejaculate fluid. Viewers entering the gallery see a table with props, video, and biometric data scrolling across the table and upon walking around the pedestal to the left, they can see a stereoscopic augmented view of the table with Cardenas and Mehrmand standing on either side of it performing erotic acts.

virus.circus.laboratory, Micha Cárdenas and Elle Mehrmand, Los Angeles Contemporary Exhibitions, 2011, photograph by Christopher O'Leary

The *virus.circus* series follows the viral as a transversal line of inquiry that intersects with the militarization of medical authority, microscopic transnational migrations, and global economic inequality. Consisting of an episodic series of performances using wearable electronics, soft sensors, and live audio to bridge virtual and physical spaces, the performances explore queer futures of latex sexuality and DIY medicine amidst a speculative world of virus hysteria. The history of queer politics shows that the rhetoric of viruses such as HIV are used to control marginalized populations, while viruses such as H1N1 reproduce these structures of power.

In *virus.circus.laboratory*, an imaginary system with a direct cortical interface, facilitated by nanobiotechnology, gets its power from the chemical contents of ejaculate fluid, including glucose and fructose (*Nano Patents and Innovations*, 2010). By imagining such a system, *virus.circus.probe* highlights the moment when the Turing machine advances the tape and asks how is the tape advanced? By what power source? It reveals the assumptions of a western imperialist system of thought that would assume that power is in infinite supply, and therefore any string is computable by a Turing machine. Instead, *virus.circus.probe* reveals the corporate-oriented concerns and desires of contemporary computing interfaces by asking, what if computers required a heightened emotional state in order to function, or a state of sexual pleasure and satisfaction?



virus.circus.laboratory, Micha Cárdenas and Elle Mehrmand, 2011

6 Queer code

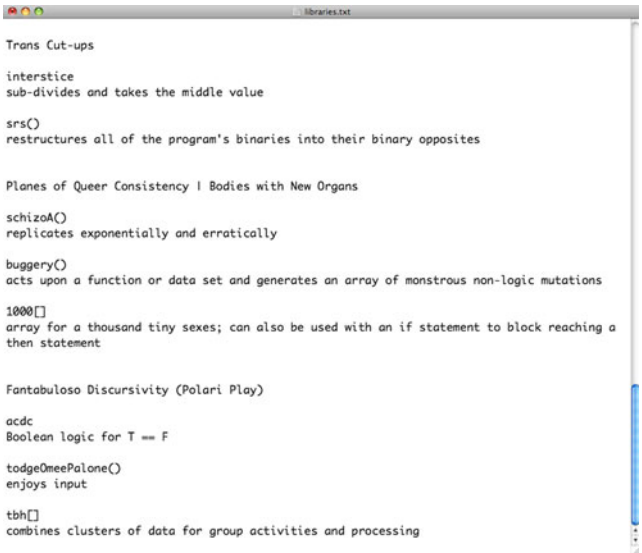
Queer Technologies, *transCoder Instruction Video* still, 2011, photograph by Zach Blas

Queerness has always had it codes, just like technologies. In Homay King's work on Turing, she claims that in the Turing machine, these two codes collide, in that the Turing machine has a queer capacity, which is to abide in the undecidable, to think when confronted with indeterminacy, to bear the burden of secrets, as she puts it (forthcoming). King connects computational coding with the "coded" ways in which Turing would have to exist as a homosexual in the UK during the 40s and 50s (forthcoming).

7 *transCoder*

Queer Technologies, *transCoder* product display, 2011, photograph by Christopher O'Leary

One project from queer technologies explicitly explores the possibilities of queer code. *transCoder* is a queer programming anti-language. Imagined as an update and adaption to queer slang languages, like Polari, transCoder is a sociolinguistic coding orientation designed to transcode between cultural layers and computational layers (Baker 2002; Manovich 2002). Manufactured as a Software Development Kit, transCoder offers an open-source environment for collaborative coding and making.



Queer Technologies, *transCoder* coding library sample, 2008, photograph by Zach Blas

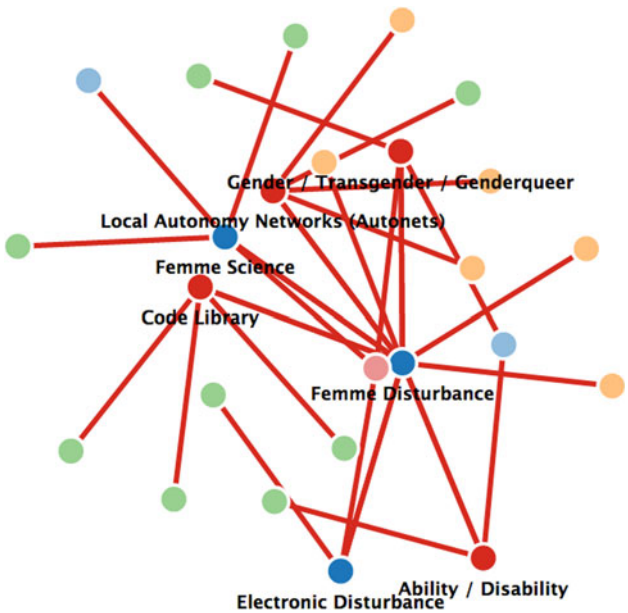
The Slash Goggles Algorithm, developed by Russo (2008), is the first program written with transCoder. The Electronic Disturbance Theater has also developed code poems using transCoder for The Transborder Immigrant Tool (Cárdenas 2011).

Julie Levin Russo, *Slash Goggles Algorithm*, 2008, photograph by Julie Levin Russo

transCoder reveals a number of limitations of digital computation, such as its reliance on linear models of time. The qTime function of the *transCoder* library highlights what queer theorists like Halberstam (2005) have called queer time and queer space, which emphasizes the coexistence of multiple times and spaces.

8 femmeDisturbance

Just as *transCoder* reveals the heteronormative assumptions underlying most programming languages, Cárdenas' *Femme Disturbance* explores another intersection of gender, sexuality, and technology through a poetic use of computer code. The *Femme Disturbance* series considers the possibilities for queer femme affect to disturb rationalist traditions that give rise to capitalism, heterosexism, ableism, racism, and other forms of exclusion. These performances explore the way in which a femme attraction, between a genderqueer transgender person and a queer woman, can create a sense of solidarity for different forms of embodiment deemed excessive: the femme, the mentally ill, the differently abled, and the gender nonconforming.



Femme Disturbance, Micha Cárdenas

In her essay "U.S. Operating Systems at Mid-Century," digital humanities scholar McPherson (2012) considers the racial logics that underlie and support the development of Unix and their implication in neoliberal capitalism. She urges digital humanities scholars to consider the systems, such as source code, which underlie contemporary representations of culture, saying "we cannot read the logics of these systems and networks solely at the level of our screens (2012). Capital is now fully organized under the sign of modularity. It operates via the algorithm and the database, via simulation and processing… to

study image, narrative, and visuality will never be enough if we do not engage as well the nonvisual dimensions of code and their organization of the world" (2012). The Turing machine is one such underlying system, which is at the heart of all computing systems. By looking at the assumptions and limitations of the Turing machine, we hope to reveal something of the nature of contemporary computing.

What might the racial logics underpinning the Turing machine be? A product of the mind of a dedicated military code-breaker for the british empire, can we understand the Turing machine to represent the imperial drive for global conquest? Perhaps the name the Universal Turing machine best represents the racial and cultural assumptions of the Turing machine. The machine begins by thinking that any problem can be encoded into symbolic logic and thus computed. Thinkers of race and colonization such as Frantz Fanon would seem to disagree that any problem can be universally encoded or even represented. In Kara Keeling's discussion of the black femme function, the ways in which the black femme disrupts forms of common sense that support capitalism, she uses Fanon's thinking as an example to explain how the femme exceeds representation. She cites Samira Kawash: "Fanon's absolute violence of decolonization… [is] an uncanny violence in excess of any instrumentally conceived ends, a violence that cannot be contained or comprehended within social reality. The absolute violence of decolonization is outside agency or representation" (2007).

As part of *Femme Disturbance*, Cárdenas has written a code poem in the form of a software library. Inspired by Keeling's black femme function, Cárdenas decided to write an actual function in code to describe her concept, as well as a few related concepts.

```
femmeDisturbance.keeling.blackFemmeFunction () {

      delete visibility;

      if( commonSense.disrupt(racist) && commonSense.disrupt(sexist) &&
commonSense.disrupt(heteronormative) )
      {
            //once these forms of commonsense have been disrupted
            //exit this entire computational paradigm and
            //split off into a new imaginary computational system
            //yet to be defined
            fork(blackFemme(revolutionary, anticapitalist));
      }
}

femmeDisturbance.anzaldua.atravesados(){

      //conjure involves becoming, summoning, imagining and loving

      conjure(serpent);
      conjure(squint-eyed);
      conjure(perverse);
      conjure(queer);
      conjure(troublesome);
      conjure(mongrel);
      conjure(mulatto);
      conjure(half-breed)
      conjure(thoseWho(cross over, pass over || exceed("normal") ) ;

}


femmeDisturbance.myMom.compassionUnderDuress(){

      see(beauty);

}
```

Femme Disturbance, Micha Cárdenas, Institute for Multimedia Literacy, 2012, photograph by Veronica Paredes

9 On the further politicization of computation and technology

Today, in academia and media arts, an explosion of work is being done now on the politics of digital technology, exploring how technological structures and logics that appear objective and depoliticized are socially, culturally, and politically inflected. We identify our work as exposing, playing with, and reconfiguring digital technologies to make them align more with our politics and desires. For us, Turing is a crucial historical figure for thinking the politics of digital technologies from queer and feminist perspectives.

Returning to Tara McPherson's urging to understand the systems that underlie contemporary representations of culture, perhaps what these examples of queer media art reveal is that contemporary computing is strongly shaped by the desires and interests of corporations. In contrast to Turing's time, when technology could be best understood as an outgrowth of the state military apparatus, today's technologies are products of globalizing neoliberalism and, therefore, are powerfully centered in the interests of multinational corporations. The limitations of computers being designed for linguistic, emotional, and physical appropriateness of the workplace, from programming languages to physical interfaces, both reveal that the form of the contemporary computer is still defined by the demands of the neoliberal capitalist workplace.

As new forms of computing develop, such as tablet and cloud computing, one can see a radically more controlled form of society being reflected, one in which all software installed on a computer must be approved by a computer manufacturer. In the case of the iPad, even compilers which would allow one to create one's own software are restricted. As movements against neoliberal capital around

the world are gaining momentum, from Occupy to the *Indignado* movement in Spain, they are developing their own technologies, such as a decentralized mesh network to replace the Internet as their primary means of communication (Garcia 2012; Vila 2011). One can hope that new models of computation that have autonomist and sustainable interests at their core will arise from these movements, but queer new media artists are already imagining and prototyping other possible futures for computing.

References

Baker P (2002) Polari: The Lost Language of Gay Men. Routledge, London

Blas Z (2008) Queer Technologies / Gay bombs: user's manual. http://www.queertechnologies.info/gb/QueerTechnologies_GayBombsManual.pdf

Blas Z (2012) Queer Technologies. http://www.queertechnologies.info

Blas Z (2012) Virus, viral. Women's Stud Q 40(1&2) Spring/Summer 2012

Butler J (1990) Gender trouble: feminism and the subversion of identity. Routledge, London

Cárdenas M (2011) net.Walkingtools.Transformer.shift(). http://crg.berkeley.edu/content/catalyst-mcardenas

Cárdenas M (2012) The transreal: political aesthetics of crossing realities. Atropos Press, New York

Deleuze G (1997) control and becoming. In: Negotiations 1972–1990. Columbia University Press, New York. See: http://www.amazon.com/Negotiations-1972-1990-Gilles-Deleuze/dp/0231075812

Deleuze G, Guattari F (1987) A thousand plateaus: capitalism and schizophrenia. University of Minnesota Press, Minneapolis, MN

Garcia T (2012) Return of the Indignados: Spain's anti-austerity movement marks a year of protest. Alter net. http://www.alternet.org/story/155444/return_of_the_indignados%3A_spain%27s_anti-austerity_movement_marks_a_year_of_protest

Halberstam J (1991) Automating gender: postmodern feminism in the age of the intelligent machine. Fem Stud 17(3):439–460

Halberstam J (2005) In a queer time and place: transgender bodies, subcultural lives. Duke University Press, Durham, NC

Halberstam J (2011) The queer art of failure. Duke University Press, Durham, NC

Hayles N (1999) How we became posthuman: virtual bodies in cybernetics, literature, and informatics. University of Chicago Press, Chicago

Keeling K (2007) The Witch's flight: the cinematic, the black femme and the image of common sense. Duke University Press, Durham, NC

King H (forthcoming) Keys to Turing

Liu A (2004) Laws of cool: knowledge work and the culture of information. University of Chicago Press, Chicago

Manovich L (2002) The language of new media. MIT Press, Cambridge, MA

McPherson T (2012) U.S. operating systems at mid-century. In: Nakamura L, Chow-White P (eds) Race after the internet. Routledge, London

Muñoz J (2009) Cruising utopia: the then and there of queer futurity. NYU Press, New York

Plant S (1997) Zeros and ones: digital women and the new technoculture. Doubleday, Garden City, NY

Radiolab (2012) The Turing problem. http://www.radiolab.org/blogs/radiolab-blog/2012/mar/19/turing-problem/

Russo J (2008) Slash goggles algorithm. http://thearchive2.livejournal.com/1465.html

VIla S (2011) How the #occupy movement is spurring tech innovation. Mashable. https://mashable.com/2011/12/12/ows-tech-innovation/

Wainwright M (2012) Government rejects a pardon for computer genius Alan Turing. The guardian. http://www.guardian.co.uk/uk/the-northerner/2012/feb/07/alan-turing-pardon-lord-mcnally-lord-sharkey-computers