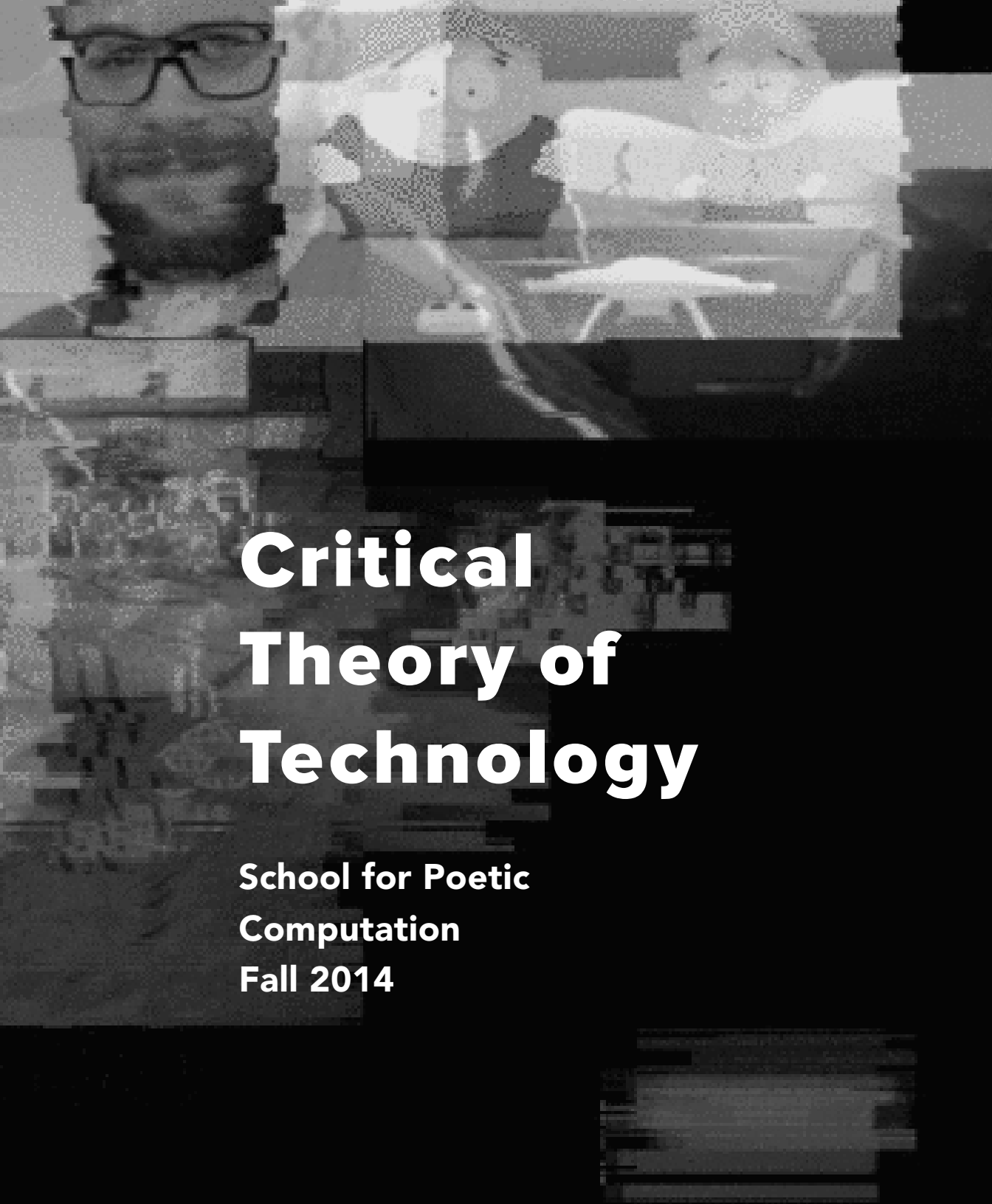


Critical Theory of Technology

School for Poetic Computation
Fall 2014

School for Poetic Computation

School for Poetic Computation (SFPC) is an alternative school for art and technology.

It was founded in 2013 to create a mode of education based on collaboration between faculty and students, and to actively participate in an emerging culture of open source and transparency. We think computation is poetic when technology is used for critical thinking and aesthetic inquiry – a space where logic meets electricity (hardware), math meets language (software) and analytical thinking meets creative experimentation.

The Fall 2014 session ran for ten weeks in New York City for 17 students from around the world. We had weekly classes on programming and hardware, 15 visiting artist lectures, a few public events and various student-led workshops. We present the school as a something between artist residency and technical research group for our students. For the teachers, the school is a laboratory for conceptual and technical experimentation and a platform to build a community of practitioners. The team behind the Fall 2014 session is comprised of Allison Burtch, Amit Pitaru, Casey Gollan, Ida C. Benedetto, Ramsey Nasser, Taeyoon Choi, Tega Brain and Zachary Lieberman.

In previous sessions, we had only a few visiting lectures on the history and politics of computational technology. We recognized our curriculum could be better balanced between practice (coding, hacking, building) and theory (thinking, reading and discussing). We invited artist and writer Allison Burtch to lead a class that engages in this ongoing conversation. Critical Theory of Technology provided an opportunity for students to explore concepts and issues unbound to the binary distinction between practice and theory. Their reading comments were often accompanied by sketches for prototypes, and their projects were supported by the conversation from the class. We are excited that this zine is an honest account of their collaboration and a blueprint for their continued exploration.

Taeyoon Choi, co-founder of SFPC

sfpc.io
blog.sfpc.io
github.com/SFPC

The Critical Theory of Technology

Politics, Utopia and Code, Fall 2014

Earlier this year, Taeyoon approached me to teach a class at SFPC that would fill a theory gap in a practice-based school. This class has been a dream. I was honored to experience the generosity of discussion that SFPC students so freely gave.

The description of the class was this: "The vast influx of telecommunications infrastructure has coincided with a massive centralization of wealth and power. How has this barrage of spectacles on screens brokered global inequality? What was the utopian goal of early tech-creators, and were those values embodied in the design of the tools we use today? With contemporary society and our collective future irrevocably changed by ubiquitous technology, the questions that makers, artists and technologists pose to society are increasingly relevant. This class at SFPC will provide a critical discussion on some of the most relevant aspects of technological society today."

It seems that discussions about technology are rarely actually about technology. They're about humans, money and power. And as the class was primarily theory, we read a lot. We read Alexander Galloway, Douglas Engelbart, Alan Kay, Jo Freeman, Ursula K Le Guin, Octavia Butler, William Gibson, Anne McCaffrey, Jodi Dean, George Orwell, Bruce Sterling, Philip Agre and Critical Art Ensemble. We read about the vision of tech creators, decentralization, language, utopias, privacy and politics.

There is tremendous misery and injustice in this world. How can anyone deal with it? And then, how do you pay the rent? My goal for this class was to live in this tension, to empower these makers, musicians, coders and artists to continue to make — wide-eyed and yet still open-hearted. Ursula K Le Guin calls it the Grand Inquisitor's choice: "Will you choose freedom without happiness, or happiness without freedom? The only answer one can make, I think is: No."

And though I found all the texts, it wouldn't have worked without such engaging and caring students. You will see in the following pages that they fully participated on this journey. They were willing to engage with difficult topics and in turn pose the questions back upon themselves. This is the end result.

— Allison Burtch

Students

download zine: git.io/SseA2w

The New Literature

by Todd Anderson

> Literature is first and foremost about having ideas important enough to discuss and write down in some form. So you have to ask, "What is the literature that is best written down on a computer?"
> — Alan Kay

> When there is a gap between one's real and one's declared aims, one turns as it were instinctively to long words and exhausted idioms, like a cuttlefish spurting out ink. Probably it is better to put off using words as long as possible and get one's meaning as clear as one can through pictures and sensations. Afterward one can choose -- not simply accept -- the phrases that will best cover the meaning"
> — George Orwell

What is the new literature? What is the most direct method of communication in an era of digital technology?

Much like Orwell's 'long words and exhausted idioms' I think there are similar over-trodden tropes in digital technology that emerge to fill in the empty space where real meaning might have been. A project where you use a Kinect to control X with your body. What does it say about X, or about your body? I don't know, but I guess it's kinda neat.

In my poetry studies in college we focused a lot on how "form is content, content is form." When Shakespeare leaves off the final stress in a line of iambic pentameter, he does it for a reason, it creates a palpable void that means something at that point in the poem. With our current state of digital technology we have unprecedented capacity to communicate with form, but instead we just see form being used to communicate itself. The Kinect shows you cool stuff you can do with the Kinect. Parallax scrolling shows you that parallax scrolling is pretty. I am all for things that are fun, cool or pretty and agree they are ends in and of itself, but they needn't be the only ones.

When Alan Kay asks, 'what is the literature that is best written down on a computer?' I think of a literature that is felt out through Orwell's 'pictures and sensations' and embellished with words to get the meaning across. People have become complacent in the complete control they have over endless pages of text across the internet: listicles thrive on their skimmability, longreads a gratifying self-flagellation. I want a literature that is more surprising, more frightening, more intentional in its medium, something that might require the reader to pay attention to *how* they are being told rather than just *what*.

But this creates a problem as to where one should focus attention: on developing technical skills to better communicate through 'pictures and sensations,' or on actually 'having ideas important enough to discuss and write down in some form.' Over the past two years I have been much more focused on developing new technical skills at the expense of interesting things to say, and mostly I think that is ok. I'm not convinced that important ideas and the ideal form for communicating them need to come from the same person.

In other mediums (music, film games) increased complexity of technology has simply led to more people being involved in the process. But writing, the discipline dedicated to the most direct communication of ideas, has remained the stronghold of the isolated auteur. I think it is important that there be people whose primary responsibility in life is to think about the world, but I don't think they should necessarily be solely responsible for figuring out the best way to convey that thought. Just as data visualization allows for public consumption of vast troves of statistical information, I'd like to see new forms develop for better public understanding of theory, human experience and political argument.

For myself I'm interested in experimenting with my role on both sides of the equation: making myself a vessel for other writers I admire (a la Keats's negative capability) and thinking long and hard about something and working with others to express it in in the best possible way. The new literature is immense and has barely been explored, there are so many things I still want to try. I hope you will join me.

by Andrew Kleindolph

I'M ALL OUT OF CHANGE. WOULD YOU HAPPEN TO ACCEPT BITCOIN?

Class Description; Note to Self

by Nathan Rosenberg

When I arrived at SFPC and started the *Critical Theory* class, had no idea what to expect. I was unsure how or if this class would tie in to the many technical things that I was looking to learn. But then again, everything was new.

I had never written a line of code in my life. Shutting down my business and finding daytime care for my kids presented some hefty challenges. My temptation was to triage coursework into one of two categories; those I felt I had time for (coding), and those I felt I didn't (everything else). But despite my temptation to step away, something kept me reading this course material, and engaging in these conversations.

It wasn't until now, at the end of it all, that the pieces came together. A connection formed—a synaptic snap pulling from our class analysis of "the internet of things", discussions around wearable tech, Sara Hendren's *Adaptive Technology* lecture, and the moving protests and online activitiy which followed the tragedy in Ferguson. There has been a shift in the way I examine new questions about technology. It's largely a result of the lens through which we have been looking at the world.

Thus I decided to approach this writing as if I were creating a class description. So here it is: my *Critical Theory* abstract, engineered to reassure a slightly less wise, cynical me and to explain why it is important to thoughtfully examine, our role as "poetic technologists" in a dynamic, socio-political, economic and artistic era.

Critical Theory Course Description

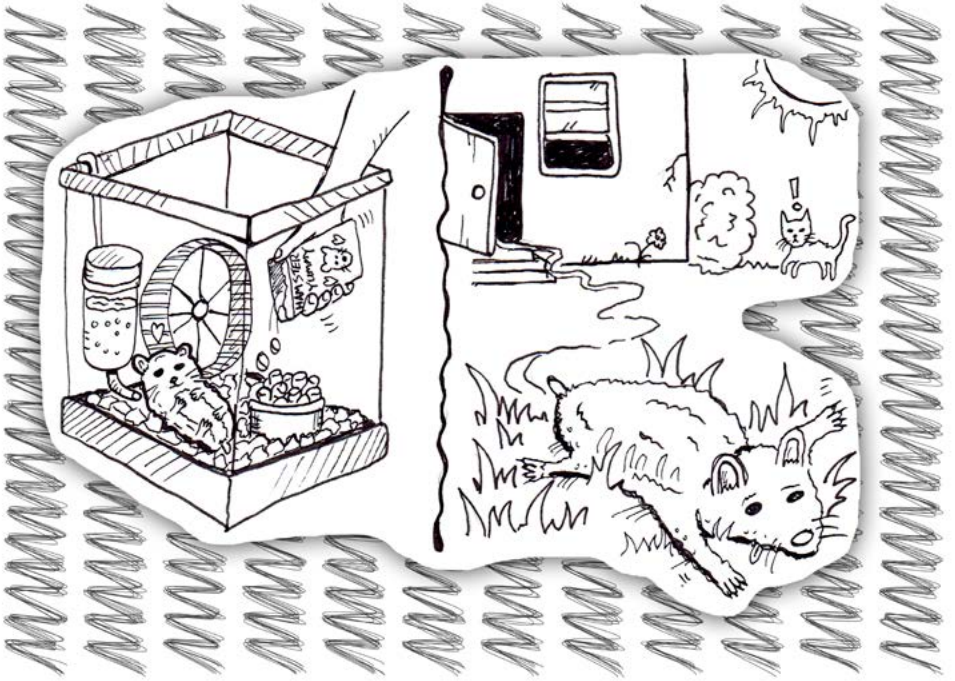
As computational power reached a critical mass in the eighties, society found itself faced with unique questions; some old, many new. Many are yet to be imagined. Within the technology of our time there still lies latent, a vast potential. We have already created unprecedented shifts in the balances of power, in our social interactions, in our perceptions of self, and in our vision for the future. We continue to be faced with new choices everyday. The stakes, it seems, have been raised.

As "poetic technologists", we have a responsibility to approach our craft thoughtfully. Our tools and our pallets are still in developmental infancy. And

like an infant, our medium is dynamic — impressionable. By reflecting upon our heritage, we stand a better chance of meeting new challenges informed with vision, purpose, and accountability.

Through readings and discussion, in this class we will examine the repercussions of our technological evolution. In exploring our own political and socioeconomic heritage, and by examining our creative and technological motivation, we will strive to develop an informed awareness—an awareness that may allow us to evolve responsibly and thoughtfully in our crafts.

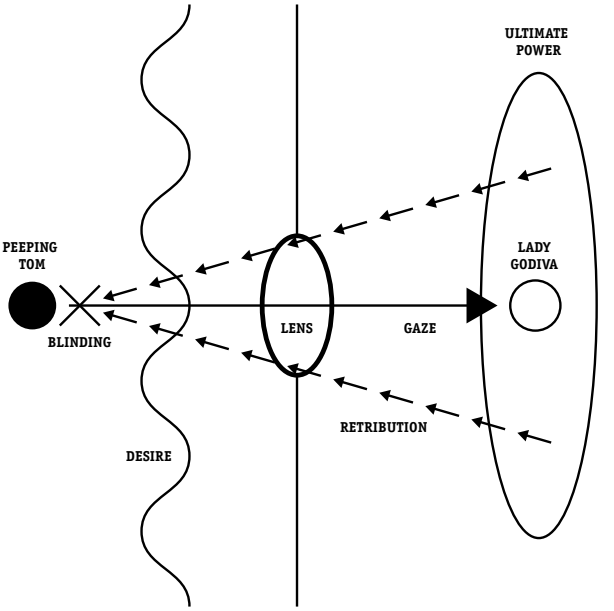
by Andrew Kleindolph



CHOOSE YOUR FUTURE: HAPPINESS WITHOUT FREEDOM OR FREEDOM WITHOUT HAPPINESS

Peek-A-Boo

by Christo Allegra



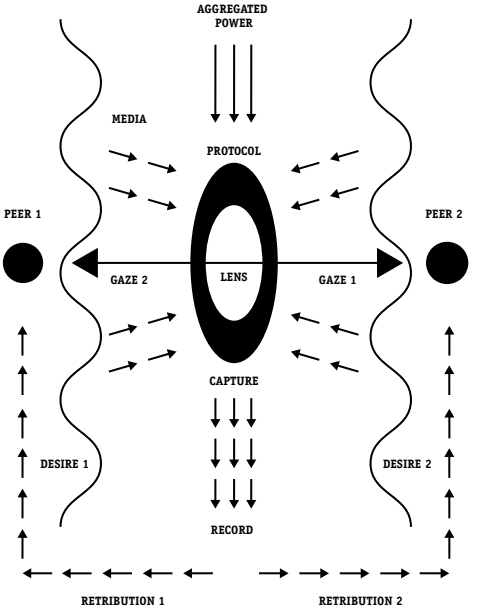
Voyeur

!

Digital surveillance is a leitmotif in media art practice. But, art and voyeurism have been entangled from the get go. New or old, "surveillance" is our new descriptor for scopophilia in our current "weaponized" social discourse. Surveillance is aligned with an act of an institutional power, while in our current mediated environment the individual is the capture and distribution method. Digital culture membership requires implicit or explicit participation in surveillance. Transparency goes both ways. I can see you, you can see me.

@

In media art, the frame has atomized and the observed record is fragmented into particles of information: data. The scale of the iota is offset by its volume, mass and sheer pervasiveness. This mountain of sand accumulates at the scale of petabytes and lives in silicon (eternally?) The technology/ technique of capturing this personal, biometric, and transactional data is a method not an end. It relies on reconstitution, presentation, distribution and access. Individual and institutional access to the previously inaccessible is the opportunity to peek at something that hasn't been seen before. This thrilling exposure is tricky territory though. Depending on how power dynamics are employed, the observation can become exploitation and — when mechanized — create a state of surveillance.



Surveillance

#

Voyeurism and its antecedent, the Peeping Tom, have not always required a sophisticated lens to satisfy their needs. Desire was once enough. The origin of the Peeping Tom story is part of the history of Lady Godiva. The story goes Lady Godiva was pleading with her husband to offer tax relief to the the town villagers. Her husband responded that he would stop collections when Lady Godiva rode naked through the town. Godiva instructed the townspeople to close up their windows and doors in respect for her and she took up the challenge. Yet one man, Tom, bore a hole through to see her and as she passed by he was struck blind.

$

Technology allows the voyeur to create distance from observational behaviors and their implications. If our telescope lets us look across the city and see the anonymous actions of another, our fascination — our engagement — is fed by access to privacy and intimacy, but also in our power to do so without consequence. The "extensions of man" are multiplied in n dimensions. The fetish of technology and our belief in its grand project allows us to further our distance, anonymize our watching as we sift through the most specific details, even the most mundane or arcane. We perceive we are closer to something that moves farther away in observability. What are we looking at, or maybe what are we looking for? Where is the art in it?

^

At what point will these infinite peepholes, our personal panopticons, our desire to see it all, flood us to incomprehension. Will we ever see it?

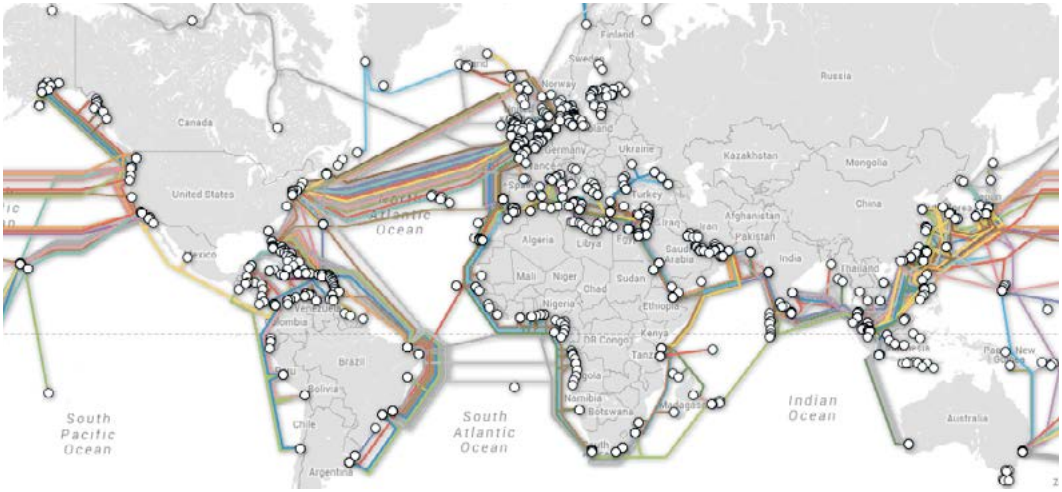
The Centralized Internet

by Jonas Jongejan

The transportation

In theory, the Internet is simple to explain seen on a global level. With just an IP address of the destination, all of our machines can send network packages with whatever content we would like to other machines connected to the internet. I can create a package with the command to get a webpage from a server (*http*), a packet with an email I want to send (*smtp*), or a packet with encrypted images that I send to another person. The Internet allows me to wrap arbitrary digital content in a packet, send it, and it will try to take care that it's delivered at the destination. For free (for the average user).

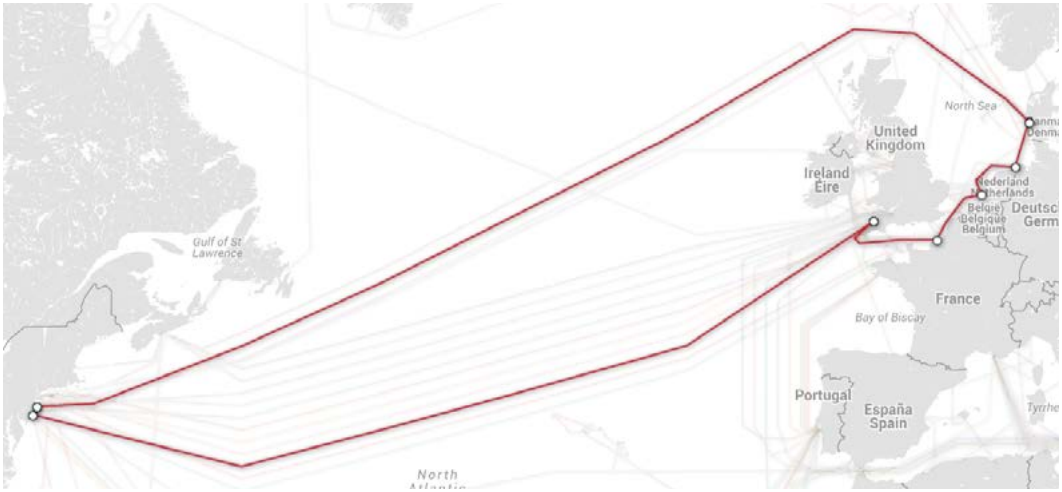
The route these packages will take is out of our hands. The transport layer of the Internet is a mesh of other machines all having a small knowledge about their surroundings. My packet jumps between all of these machines in the direction of the destination address until it is received by the destination. What are the machines that my packet will transmit through on its way to the destination? Machines form the infrastructure we expect as a human right to have access to in the western world. Its machines that are placed at telecoms all over the world and cables that are connecting them.



Current submarine cables connecting the Internet between continents

The image displays all current submarine cables connecting the Internet between continents. These cables are transporting 99% of the internet traffic between continents, and are an extremely important part of the global internet infrastructure (the last percent is satellite traffic). Without these massive cables, I would not be able to open a Danish homepage while I'm in the states. In 2009, an earthquake cut 8 submarine cables near Taiwan. It resulted in very slow internet to the US from Singapore, mainland China, Malaysia and other countries for weeks. This demonstrates the strategic power of these cables, and emphasizes our dependence on them.

In Denmark we have a couple of submarine cable landings. TAT-14 connects Denmark directly with New Jersey. According to Snowden leaks, TAT-14 is on the list of strategic infrastructure at NSA. Telia Sonera, the Danish company that maintains the landing site as well as half of the cable, estimates that 80-90 percent of the Danish internet traffic leaves Denmark and heads west to the states. This makes sense as this is where most of the big data centers from Google, Amazon, Facebook, etc, are placed. Not all traffic passes through TAT-14, but since it is by far the shortest route to the states, most of it probably does. What does this mean for me as a danish citizen? If



TAT-14 submarine cables connect Denmark with New Jersey

(when) the NSA or the danish FET is listening to traffic passing through TAT-14 at the landing sites in New Jersey and Denmark, most of my traffic would be analyzed by looking at one point in the internet mesh. Every time I perform a Google search, a Facebook login, syncing to Dropbox, etc., that action gets logged in a different country than I live in and added to my digital profile.

This contradicts my image of the mesh internet. An internet resembling a chaotic decentralized mesh of interconnected machines where packages fly between nodes until they get to their destination is no longer the same when information can be intercepted at central nodes and eavesdropped on. It's a weird centralization in a decentralized network.

The data

As a result of the last couple of years of cloud computing development, we now put more and more (meta)data in the hands of big American companies. A market to own millions of peoples data has formed. I am seeing a pattern for two different type of tech companies: one that provides free services for their users and collects all usage data from their network to use for advertisement control and third party sales in return (Google or Facebook), and one that earns its money in other ways, like selling hardware for example (Apple or Samsung). Companies classified as the first type can help explain why 80-90% of the internet traffic from Denmark goes out of the country, as everybody uses Gmail, Google, Dropbox etc.

> If the service is free to use, it's you who is the product. You pay the bills of facebook, you are getting traded.
> — Nikolaj Sonne, DR

Google and Apple recently tried to redefine mobile payments with Google Wallet and Apple Pay. When using Google Wallet and paying with your phone, the transaction happens through Google servers. Google becomes a 'man-in-the-middle' between you and your bank that in the end will do the transaction. This is valuable data for Google, as data about your purchases tells a lot about your interests. With Apple Pay, however, the transaction is designed to go directly to the bank without going through Apple. Apple highlighted this when they presented the service, and it makes sense since Apple doesn't get any benefit from this data. None of these services are yet released in Denmark, but when they are, an

interesting difference will be uncovered: a Google Wallet transaction in a local danish shop would be registered in the US, whereas an Apple Pay transaction would only be transmitted internally in Denmark and therefore much harder for NSA to detect.

This is not something I've seen a lot of awareness around in the general public, but my hope is that companies will promote this difference more in the future. Promoting this difference would increase awareness for us as consumers and help us pick the services that promote local, decentralized data. This would limit the amount of data that is flowing to the central nodes outside countries where the data belongs, and make NSA's job of creating digital profiles on everybody a bit harder.

I think we have started to see the beginning of this with companies that promote end-to-end encryption of data and peer to peer technology. This ensures that data that flows around is only readable by the sender and intended recipients and not by the companies who transport the message. Services that are designed to only store data locally and secure near you also help you get a better understanding of how your data is being used.

What was the vision?

by Lauren Gardner

Steve meant well but if he knew how many hours Candy Crush would be played on the iPhone would he have done things differently?

"It Worked." Said an ambivalent Oppenheimer upon the first successful test of the atom bomb. After Nagasaki, Oppenheimer traveled to Washington to hand-deliver a letter to the Secretary of War expressing his revulsion and his wish to see nuclear weapons banned.

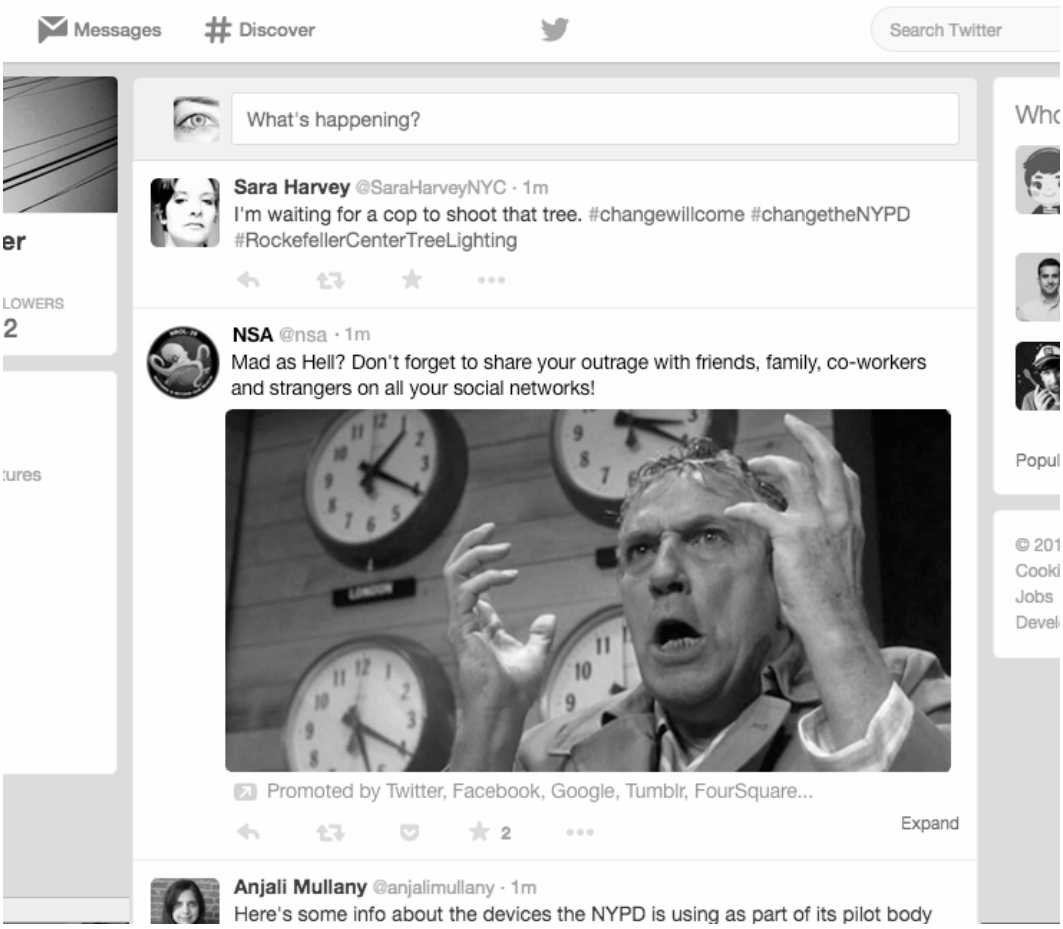
My vision would be for tools and software to be created with a humanitarian goal. More discussion and thought should be put into the benefits and unintended consequences of what we build *before* it is built.

We fetishize success. Making and creating a 'thing' has become the achievement itself, regardless of what the 'thing' does. Teaching mastery of tools may not be as important as teaching people to think critically about what they are making and why.

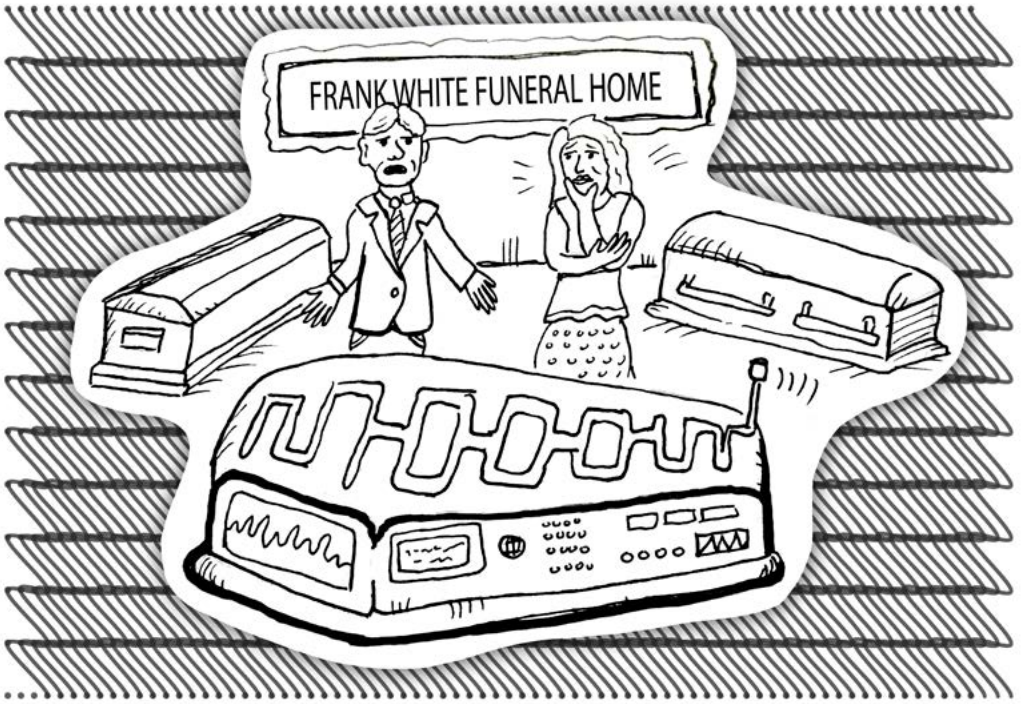
> Literature is first and foremost about having ideas important enough to discuss and write down in some form.
> — Alan Kay

Communicative Capitalism

by Lauren Gardner



by Andrew Kleindolph



Blurry B&W profile pictures and flip phones

by Franc Camps-Febrer

This article was originally posted on Craigslist.

How does social positioning and the judgement of taste work in digital culture?

The French sociologist Pierre Bourdieu would describe the judgement of cultural taste as a pure act of class stratification. In his best known book *Distinction: A Social Critique of the Judgment of Taste* (1979), one of the most important works of sociology in the 20th century, he claims that these kinds of judgements can be described almost exclusively as acts of social positioning, delineating class differences. Although not a novel idea, the exhaustive, quantitative evidence he presented was unprecedented.

Bourdieu claims by describing certain tastes as being unworthy of attention, one positions herself above the socioeconomic class associated with those tastes. Try mentioning Taylor Swift next time you find yourself surrounded with people who went to Oberlin. You'll see what I mean.

Hipsterism provides a familiar example of how culture operates as a mechanism for class division. In creative-class infused cities, consuming certain cultural objects provides status and acts as a sign of social positioning. Similarly, despising tastes associated with classes of lower cultural and educational capital can have similar effects.

Although sometimes described as a counterculture, hipsterism is and always has been central place in generating cultural products. Hipsterism plays very well with the establishment. In a way, it continuously produces trends adopted by the mainstream, while being fundamentally defined by its disdain for popular tastes.

So if culture is commonly used as a proxy for distinction and group identity, if our life is transported to the digital world, and if more of our social interactions happen in this environment, what are some of the behaviors in this digital context that could be understood as acts of social positioning?

Online, we work to create a public persona that presents us socially. It is natural for behaviors associated with social positioning to translate to the characters we curate as well.

Our displays of taste, such as our choices in art and music, t-shirts with band names, makeup, haircuts, and even the events we attend reproduce this classist effect simply through documentation on social media, or "sharing".

Personal branding describes many of our actions online: from the type of picture you choose for your profile, the music you listen on Spotify (knowing it will be *shared*), to any public affirmation on Facebook. To exemplify this, imagine a person with an artsy, black-and-white, slightly blurry picture profile, versus a person whose profile is of their favorite football team logo. See yourself making class assumptions. Semiotics are profoundly leveraged on social media. We are increasingly comfortable making these kinds of judgements.

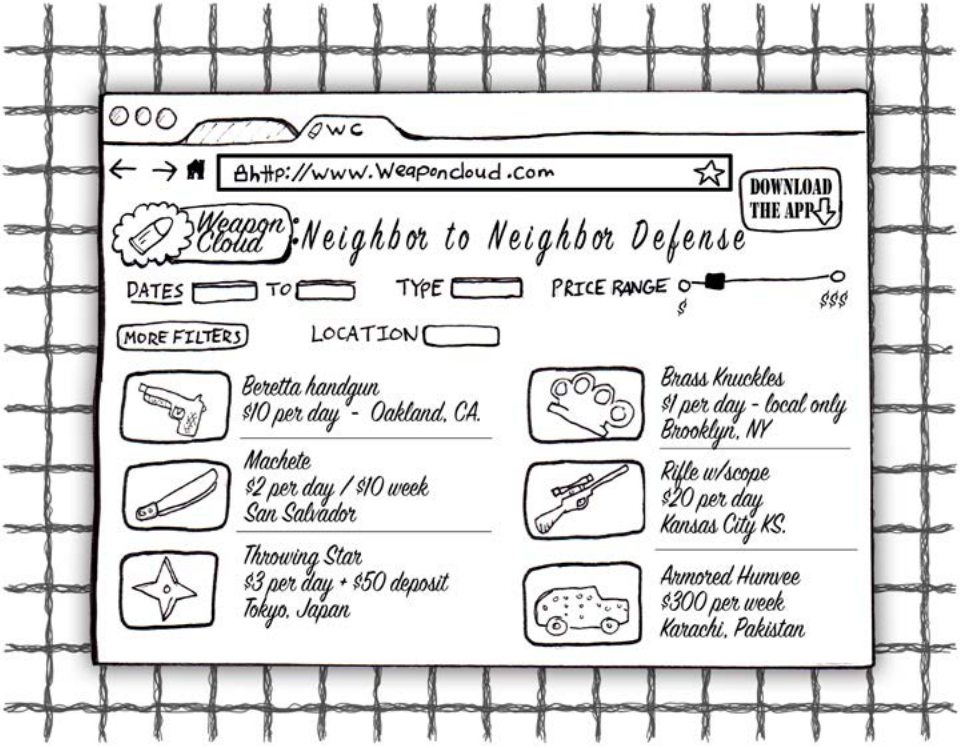
As technology becomes more a part of who we present ourselves to be, the choice of being part of one social network or another may also play a role in our social positioning. The choice of using an app over another, or joining at early or later stages of their adoption, has an effect on social differentiation. In the last year or so, my use of Facebook has decreased significantly. Simultaneously, I've noticed a sense of pride when I inform people of this. It's a similar feeling than the one I used to feel when announcing I didn't own a TV.

In an era where devices are no longer shared (smartphones vs. home phones, laptops vs. desktop computers), hardware choices also contribute to personal identity. They are also acts of social positioning. For example, the iPhone (or even better, the latest version of the iPhone!) is undeniably an individual display of class. In certain environments you would get the look for having some other smartphone.

Sometimes this can work in different directions. In Europe, politicians on the left using Apple products are accused of being "champagne socialists". In some hacker environments, a flip-phone can be a statement of non-mainstream adherence, increasing a certain hacker "street-cred".

As technology becomes an increasingly integral part of our social identity, technological choices become central to understanding the evolution of culture and the transformation of class hierarchies. In a time when technological applications are regularly presented as "democratizing" tools, it is especially crucial to explore the mechanisms by which class differences are inadvertently reinforced within digital culture.

by Andrew Kleindolph



A NEW RENTAL OPPORTUNITY FROM THE SHARING ECONOMY!

Internet of Garbage

by Yuki Yoshida

I realized I forgot to bring my turtle to the trash can at Starbucks on Delancey St.

Starbucks is now the most advanced technology company in the foodservice industry. All purchases at Starbucks are tied to your account. They serve the best coffee personalized just for you. Not only do they remember what you drink and eat, they track all your custom flavors including the amount of sugar and milk which are recorded and this will automatically be recalled when you visit next time. Their "barista" is no longer making coffee, they are Starbucks' symbol, giving you their smile and feelings of humanness.

Today, in a ubiquitous world each Starbucks's paper cup is connected to the internet. The cup takes data from your lips and saliva and sends it to their database. This is used to check your health conditions. For example, if you take too much sugar, it notifies to your smart device and recommends sugar-less product from their menu. Additionally, you can contribute your data as a part of a big data effort for healthcare research. Starbucks partners with several public and private organizations. Your data contribution is optional, you can opt-out when you register your Starbucks account but imagine the impact, even if a tiny sample, of all the people buying a coffee contribute to medical and biological research with such highly segmented data. For example, Harvard Medical School Research Center announced last week they found a new antibody for cancer by analysing DNA of people who have marshmallows in their coffee daily before 3pm. Also, most people contribute their data because they get "Sirens" as a reward.

"Sirens" are Starbucks digital currency. You can buy any product at Starbucks with Sirens. As the biggest coffee chain in the world you can pay with Sirens at any location around the world at a common rate, e.g. 400 Sirens for a tall latte. Using Sirens is cheaper than paying with cash because prices for cash payments were raised by 70% to drive forward use of the Siren. Some people against this policy. Boycott campaigns happened in New York, London and Seattle but I'm not sure how much it affected their global sales. On the other side, I hear they're trying to apply Sirens for fair trade of coffee beans with their traders because it eases political intervention and asserts more control on trade rates. I don't know how the digital currency works for beans suppliers though.

Starbucks is not just a coffee shop but is now a big data company with knowledge of people's health, diet and currency. However, I came here without any Siren or any cash

to buy coffee. The reason I came here is to earn money. I'm a garbage collector. I'm illegal or hopefully gray. I sell people's data by collecting empty Starbucks cups from the garbage. It won't personally identify a user from a single cup but if you look at many people who regularly drink coffee as part of their daily routine, same time, same location and same menu - they pay me to collect this. And who collects data is not just Starbucks, every trip, subway ride,, and activity on the internet are all in the internet. They shape your life in a virtual space. or example, even if you don't opt-in to Starbucks health tracking data collection insurance companies still like to see your health data. Just the other day, police arrested the leader of a robbery by tracing him in the virtual space even though he has deleted all of his SNS accounts two years ago. Did you ever notice the banners of supplements on the right side of Facebook are actually what your body is lacking right now? I don't know and I cannot say more. I'm just a garbage collector. My job is just to put data in my turtles and sell them and it's so stupid that I forget to bring my turtle today.

Yes, a turtle is storage. No, it's not a hard disk called "turtle" I'm talking about an actual living animal turtle. You know turtles are harder than metals and live much longer lives than any electric device. It stores around 32 PetaByte in an adult turtle eight inches long. As long as it lives it doesn't need electricity to activate its network connection inside its carapace. I know you don't believe me. I didn't believe it too at first. But do you know why Google's data center is in North Carolina? Or, why are there a lot of wild turtles in North Carolina? Do you believe they're really wild? Do you really think it's enough for Google to manage their huge data storage of the internet just in a building? What if the building is bombed? In early 00's they found the most efficient way to protect their data was decentralization so they made the turtles wild in vast fields of North Carolina. When uploading data, people say it's "Cloud" but it's actually feeding data to a crowd of groundling turtles

in the wilds of North Carolina. You may think how did we not know such a shocking fact but how can you "search" and find a secret of the internet on the internet? Turtles are your knowledge itself today. Like you have never seen your own brain with your own eyes, you can never see the turtles.

Oh. I just remembered I brought "Leo", a mini turtle in my left pocket. I use her to store my mp3 files. She is my personal turtle but she can work for now. he is slightly different from other turtles, she makes sounds like she is singing. I try not to wonder if data stored in a "living hard disk" affects its host. Ok, I finished the data transfer from garbage into her. he starts singing again. I cover her mouth with my fingers then, I walked away from Starbucks.

by Toru Urakawa

この授業で感じた最も大きな衝撃は、コンピュータを用いた表現に関心のある人間の、社会的な問題への関心と意識の高さだ。日本ではメディア芸術やその背景にある技術について語る場合、メディア芸術そのものの歴史や、技術の詳細などについて考える場合が多い(と私は思う)。一方こちらでは、皆がそれぞれの問題を社会的な話題や出来事にも触れて議論を行う。これが私にとって大きなカルチャーショックだった。しかし考えてみれば当然のことだ。我々はあるひとつの国の中で、その国の政府や経済の中で生きている。またその外側には世界的な国同士の問題があり、経済もまたしかりだ。我々のコンピュータを用いた表現はいま、光や音、そのほか様々な情報を自在に扱えるものとして広告や映像、舞台演出の世界で応用されている。東京では6年後にオリンピックを控え、開催国を競うプレゼンテーションでもスポーツのビジュアライズ表現などが大々的に発表され、国家的なプロジェクトにもそういったものがその姿を見せるようになっているのだ。しかし我々のそれには、社会的な目線はほぼないと言っていいかもしれない。「原子力発電所はコントロール下にある」と自信に満ちて訴えた首相の発言に疑問を唱えるものは我々の世界にはほとんどいない。ただそれのつくるユートピアに向かって、誰もが技術やその目新しさばかりに目を取られ、それが与える我々の社会に対する影響を顧みようとしていないようにも見える。私はsfpcへ「生活の中で作用する」ものを作りたいと宣言してやってきた。この「生活」の持つ意味が、今回の滞在ですごく広がったように思う。社会の中の、国の中の、世界の中の生活になった。この価値観を大事にしばらくものを考えたい。

English translation: https://gist.github.com/toruurakawa/9124fe85fe112a489cda

by ***Andrew Kleindolph***

WHAT WAS THE VISION?

by Rachel Rose Ulgado

This is a reflection, an internal dialogue, written in two parts. The first details my personal struggle to make sense of "utopia," and the second concerns how this struggle motivates/informs/problematizes navigating my creative endeavors and artistic practice.

I've been wondering what the term utopia means, trying to unpack its many and simultaneously loose yet constrained definitions.

As our class discussion on utopia and science fiction might have shown, it's really difficult trying to envision what utopia is and what it looks like. I found myself more confused after reading the Ursula K Le Guin pieces ("A Non-Euclidean View of California as a Cold Place to Be" and "The Ones Who Walk Away from Omelas"). I initially found it difficult to take seriously the belief that we, in this moment, are already living in utopia. I think about the child in the basement, in the bright and shiny fictional city of Omelas, and I find myself fervently disagreeing with Le Guin. I have to, because why is it that the child's miserable existence is deemed necessary for such a utopia to exist?

It's not difficult to see the similarities to, or even think of this piece as a critique of its real life counterpart - Silicon Valley, and the cheap child labor in Shenzhen. There are so many other examples, but that's the one I pick because I'm closest to that, I participate in that. I let that sink in for a few seconds, and my reaction remains intact; I still have to disagree with Le Guin. I don't see this as utopia, but rather its exact opposite, this is dystopia, plain and simple.

There's nothing utopian about it, unless...

utopia = bliss = (blatant) ignorance.

And with that, I can no longer trust my gut - a much slower revelation than I care to admit, but now I can't help but silently agree while hanging my head in shame.

I don't want to get into a whole conversation about privilege, but I can at least admit I have it, and that I'm more than comfortable. My problems are first world problems. I know, because my lifestyle enables me to not only have the time to think about these things, but also to type this on a machine that costs as much as one month of rent. It doesn't take much to trace the provenance of this machine. I don't even have to do a Google image search to envision the latex gloves, masks, the homogenous Ford factory assembly line. Ah, I knowingly helped a company turn a profit off of cheap labor, as so many of us do. But anyway. No one wants to be guilt-tripped. And what is there to do?

So many questions. What are the right ones to ask, the answers to the wicked problems? What are the right questions to ask that will lead to fruitful conversations, ideally with the outcome of

by Rachel Rose Ulgado (continued)

a bulleted, actionable to do list? I wish I knew. The following are some of the scattered fragments that come to mind, and it's all I can conjure up, all I can contribute thus far:

Utopian for whom? Who does utopia include, who does it exclude?
(Utopia is selfish. Utopia plays favorites.)

Who decides?
(I didn't vote for you.)

Can utopia only exist if everyone is happy? Is that possible?

What about fairness? Fairness != happiness, shouldn't utopia be able to support both?

I don't know, I don't know.

These are things I'm starting to think more critically about. I've been wondering about how I would be "one who leaves [1]" (because that's what I would choose, right?) and what those metaphorical next steps might be as an aspiring artist, designer, creative individual.

I feel frustrated - filled with anxiety even - not knowing what happens to those who leave. What do they do next? How do I fill in that gap for myself? I'm just getting started, I'm new to the game. I think telling the next part of the story, and by that I mean through my work and practice, could potentially explore a number of different roads, different lenses, different perspectives. I'm already lost, I'm bad at directions (really).

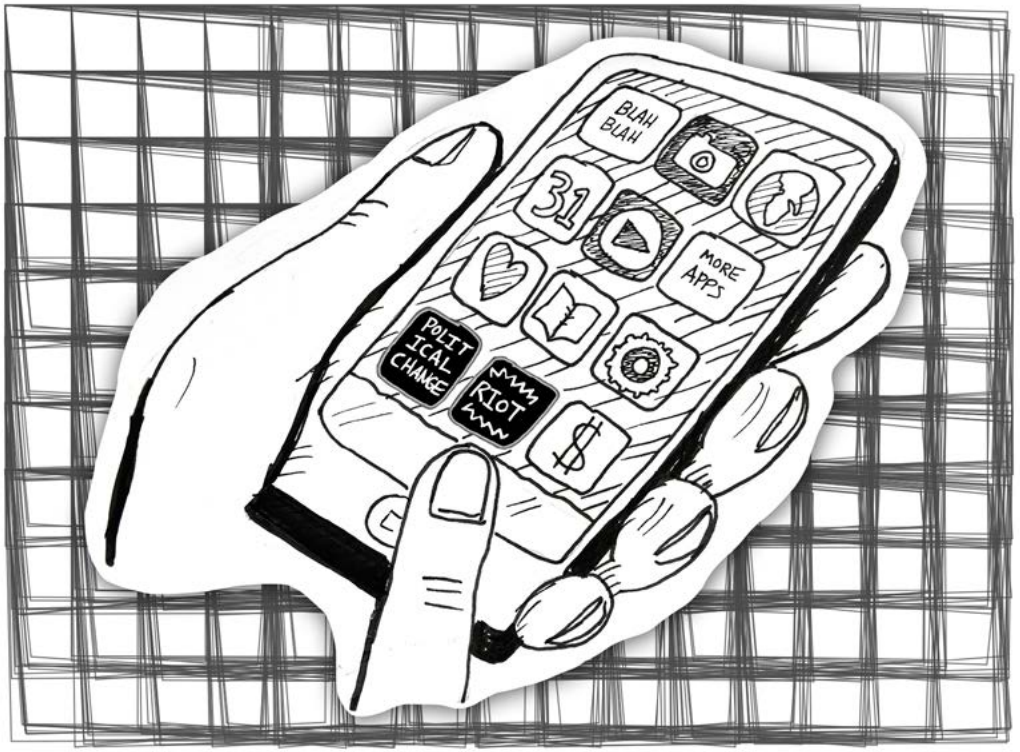
How could I, through my work, render the invisible visible, encourage new audiences to participate in complex dialogue, to help them come up with more of the right questions? How might I enable people to look at the systemic level with a magnifying glass, trace provenance, kill the roots, start over, support regrowth?

Maybe all I can do is speculate and make those speculations tangible. I'm uncomfortable with the idea that anything I make is finished, a means to an end. I want them to be moldable, flexible, generative, participatory, honest, naive, human.

Stepping back: how could I get people to care? Could I avoid the guilt trip, or is it inevitable? If the latter, could I soften the blow?

[1] In Le Guin's "The Ones Who Walk Away from Omelas," the ones who leave refers to people who choose to leave the city of Omelas after encountering the child in the basement. We don't know who they are, or where they go.

by Andrew Kleindolph



by Zach Dunham

How did we end up here, talking about riots, and protests in a school centered around "*exploring the creative and expressive nature of computational approaches to art and design?*" There's very little mention of engaging in a kind of critique of technology in either the school's explanation of itself or in my application, three months ago. After spending eight weeks discussing the critical theory of technology at the School for Poetic Computation, I have been surprised by what I see as a kind of anti-tech sentiment coming from a school centered - in one way or another - around tech itself, even if its purpose is "to demystify" technology.

After the first three weeks at SFPC, I had to skip out on a CTOT class to attend a two day hardware workshop, hosted by a NYC accelerator. I ended up feeling completely out of place in the conversations that took place around market-fit, funding strategies, and navigating hardware markets dominated by venture capitalists, not only because my background is in music and sound design, but also because we had been thinking critically about the history of computation and the role technology plays in politics and socioeconomics. I felt like I was almost fraternizing with the enemy attending this conference at RG/A as I'd been in a bubble of sorts, incubating ideas about art and politics with classmates.

The oscillation between design, code, and theory - learning algorithms for animation and blinking LEDs to reading dense texts around the misunderstanding of distributed networks as they relate to politics, and the seemingly democratic control structure of the world wide web - has been an enriching part of SFPC, but to me was really disorienting. And so after writing a long blog post about the hardware workshop and reflecting a bit, I realized that I felt caught between these two tech communities - one which explores artistic practices using technology as a medium, and another which exploits technology simply as a tool, for corporate capital. I'm generalizing a bit, but I felt myself asking the questions: *How do we as creative technologists sustain ourselves economically, culturally and artistically navigating this friction between these two communities? Does working for a tech company make you a bad person?*

As a result of these questions I felt somewhat disconnected from the CTOT class, somewhat unsure about how to participate in these communities I'd previously desired to be a part of - and ended up focusing instead on the opportunities at school to continue with the "demystifying", spending the middle of the semester thinking about motion, sound, animation, and design.

by Zach Dunham (continued)

I came to SFPC with lots of questions about *how* to do something (how to: write code, design interactive experiences, etc) and am instead leaving asking '*why*'. Having spent much of our time making things move about on the screen, and happily wrestling with attempts at manipulating data, it's easy to get sucked in to the act of *making*. Simply making for making's sake. Looking back, the CTOT class seemed to help provide a larger historical context for questioning our motives behind engaging with technology, as we use it as a medium for much of our work and it continues to be ever more present in our lives.

Exploring the critical theory of technology in an art and tech residence like SFPC there's a delicate balance in discussing the politics of technology, as a kind of anti-tech sentiment is often confused with an attempt to de-fetishize tech, and I worry sometimes that by often bringing morality into the conversation around technology and politics, the discussion about these practices can become unnecessarily polarized, and disregard perhaps socially or culturally important work.

There are plenty of software bootcamps that turn out developers to work for large financial institutions in return for large salaries, but also at the same time these bootcamps provide free education to inner city and underrepresented populations. So how do we parse these paradoxes?

I'm less interested in hiding under tinfoil as it were, and encrypting all of my electronic transmissions than using the web and it's resources as a tool to continue to learn and educate. Admittedly selfish, I'm not as concerned with tracking or surveillance, because I don't feel as affected by them on a day to day basis. But I do however, feel affected by the ways in which technology seems to be encroaching on our lives, distracting us at times from the opportunities of physical human connections. In a way I might advocate a kind of fighting fire with fire. That by knowing how to code, work with electronics and hardware, manipulate and interact with the web you're afforded an enriched perspective and potentially louder voice in this conversation of how we exist in a world so dominated and dictated by the intricate protocols of technology, and as so, the work that can come out of a debate around the critical theory of technology becomes that much more enriched when we allow for this gradient in our judgements on how we engage with technology in our lives.

by Andrew Kleindolph

A WRONG TURN ON ROBERTA'S WEEKEND GETAWAY LEFT HER DEEP IN SURVEILLANCE FOREST.

World & Work

by Meghana Khandekar

There is incredible injustice, prejudice and violence in the world. Environmental problems are crippling agriculture and communities. Entire demographics of people are more or less subject to a separate system of justice. Mountains of debt is stifling entire countries and individuals. And yet, there is astounding technological innovation. Every generation is becoming more accepting of people different than them. The world is waking up — people are being pushed to their human limits in Egypt, Syria, Israel-Palestine, Ferguson, New York — and people are protesting the powers that made these circumstances a reality.

> Riots are a thing that human beings do because human beings have limits.
> — Jay Smooth

Being aware of what is happening in the world, and wanting to respond in a way that is effective, I often feel inadequate. I feel like I don't speak the language of, or have access to the systemic and global issues that really move me. I want to do work that responds in a way that is effective. Am I effective when I'm in the streets protesting the recent swell of police non-indictments or NSA's activities? It's difficult for me to know when I'm making a difference. I'd like to think that I'm starting to define and live to my values, in each moment, while the interaction designer in me knows that anything can be iterated upon and honed, including my beliefs.

When I look toward my profession, I often see technology being held up as the answer before the problem has even been defined. I see technology being used to take people's rights away, to exploit, to give more power to the already powerful. And I see people without access to technology being completely left behind. The more technology-centric environments I'm exposed to, I increasingly and surprisingly find myself adopting an anti-technology sentiment — while simultaneously knowing that much of our work is also being used to move communities forward to reach their goals. I imagine I will carry my contradictory feelings for many years to come, but that's not a bad thing. Healthy skepticism and informed beliefs help us to stay awake and aware of the immense possibilities as well as tragic pitfalls when responding to problems.

Perhaps instead of feeling frustrated and helpless in the face of things happening in the world, can we look at our life on this earth as a choice? That we *get to* and we *choose to* live in this time, to take on the challenges of today, to do the lifetime of work that will leave a better world for the next generation. In a time of snap

judgements, can we also see that everyone we encounter has *also* chosen to be alive at this time, and to approach a differing opinion with empathy and patience. And can we have faith that every sincere action that we take individually is us living to our values and thus has purpose.

As technologists, artists, musicians, thinkers, we act as translators between worlds. We know some things really well — we listen, notice the overlooked, find pain points, ideate until something sticks, and iterate as circumstances change. Any successful social and political movement from the past tells us that action and participation is needed at every level: the subversive, on the streets, within communities, within organizations, and on the policy level. What's important for me to translate? Who can I work with to most effectively apply my skills in the movements that matter to me? What sincere action that I can take today?

I've started something this Fall that I'm excited about. Navigating cultural differences has been part of my entire life. Recently, I have continually been in conversation about racial tension especially within the United States, which is becoming increasingly more diverse while simultaneously becoming more difficult to dismiss misrepresentations and biases. One of the first steps to understanding intersectionality of race, ethnicity, gender, sexuality, and class is to learn from others who are already constructively engaged in these topics. With a couple of collaborators, I'm starting a podcast that inquires: *What can we learn from couples navigating cultural differences in their relationship?* Its aim is to show that it's possible to have a productive dialogue in a non-judgmental and open environment.

This work is my way of responding to what is happening in the world. It seems important and urgent for me to do. What work is important and urgent for you?

> Is there something more important you can work on? Why don't you do that instead?
> — Aaron Swartz

by Paige DeRaedt

There's been a huge focus at SFPC on education - SFPC itself is an education experiment. Again in the new audiences theme: 'how can we spread what we care about far and wide to diverse new groups?' focuses on sharing technology and making it more accessible to those who may not be naturally exposed. This focus on technology education excites me because I like the idea of spreading something I find so interesting to others, but I was always felt like I didn't fully identify with it.

In reading sections of Seymour Papert's 'Mindstorms' for our Critical Theory of Technology class, he talks about the idea of '*mathphobia*' and how '*our culture has a general perception of mathematics as inaccessible*.' I was lucky to be exposed and find out at an early stage that I really enjoy math and other STEM subjects, but I know plenty of people who had mathphobia as well. I do believe that there is a culturally imposed divide of skills that people can have: If you're good at reading/writing then you're probably not good at math; if you're good at math then you're probably not good at reading/writing. Most of the focus is centered on improving the way we teach people math/programming and making technology more accessible to them as its use becomes more prevalent in the world. However, knowing that I liked math imposed an inherent lack of ability to write - I was terrified of english and literature classes. It was weird though, because I loved to read. I didn't really understand this disconnect fully until I came to SFPC, read 'Mindstorms', reflected, and discussed it with others like Sara Hendren.

I made a visualization that displays the frequencies of certain letters in text (books, music lyrics, etc.) by visualizing the transition from one letter to another of all of the words that make up the text in the form of a circle. My motivation for making this was based on pure curiosity. I didn't really have a clear intention of why I was doing it at the time. But after thinking more about it during my time here, I realized it was my attempt to make writing more math-y. I was able to deconstruct the way others wrote and think of it as data, rather than the anxiety provoking thing that language was for me. This was the only way I could be comfortable with it. Thinking back, it also explains why I was so interested in my previous work experience at a startup whose products were built with natural language processing and computational linguistics concepts. These sorts of avenues were ways to connect to something that I was formerly afraid of. This was my pathway into feeling more comfortable with something that I had been telling myself my whole life that I couldn't do.

by Paige DeRaedt (continued)

Being exposed to and asked to reflect on 'Mindstorms' has really inspired the vast majority of ideas and mini projects that I've chosen to focus my thoughts on at SFPC. Overall, I think my end goal is to try to make language more math-y and more accessible to people like me and also other engineers for whom writing a paper was a freaking huge deal in university. I don't know that this is any kind of perfect end solution, but it would be nice to explore a momentum in education that moves towards a more fluid combination of disciplines rather than focusing on improving distinct sides of a divide.

What is Poetic Computation After All?

by Sarah Groff-Palermo

This piece is adapted from an essay originally posted to http://essays.sarahgp.com/what-is-poetic-computation-after-all

The Semiotics of Poetic Computation Is a Call To Arms

Poetic computation is computation in favor of people — and the term itself is a call to arms. An actionable theory of critical technology must necessarily start with humans, and this is the project of poetic computation.

That this project is at the heart of all SFPC is made clear in the Eyeo talk in which Zach Lieberman first introduces the school, and in which he details the semiotics of the phrase itself.

Skipping *school*, we go directly to *poetry*, which Zach identifies with smallness, with hiddenness: poetry is the weird section at the back of the bookstore, filled with self-published chapbooks; it is the piece where two small boats are better able to charm and reflect us than a million-dollar blimp powered by brainwaves.

In contrast *computation* is Big Tech. It is the monster driven to be "newer, bigger, faster" and can only be restrained by the injection of poetry, which here becomes the inoculation for capitalism, computation's twin face. And poetry is the vaccine because it is impractical and because it is human. The school *for* poetic computation, which advocates in favor of said work, is an un-vocational school, in Zach's description: an anti-bootcamp.

What worries me most in this formulation is the idea that computation is the footman to our drive to a technocratic dystopia; it does a great disservice to the work of non-poetic computators whose nearest bridge to us is a love of creation.

For to me, then, poetic computation is the work that complicates our relationships with code and tech by demanding they consume and reflect the human. It is at the level of code that we can search for computation with a soul, computation that works for us, an alternative view to the technocratic assumption that we are all finally little more than defective meat robots who must adopt logic to be worthy of our machines.

In this, computation itself is value neutral, just the way we have right now of talking to machines. And the poetic is the romantically human. Poetry uses aesthetics to express what straightforward declaration cannot; it is the opposite of what machines seem to demand: the explanation of

everything. Poetic computation stands as a bulwark against a-poetic computation.

And a-poetic computation is the technocratic narrative. It is not inherent to the work of machines but to those who would seek power and for whom machines are a convenient means. The most poetic work then is not a certain type and does not demand a particular manner of interaction with computation (though I love the language focussed ones myself) — rather, it is the work that privileges the dignity of the human and the examination of itself.

Distinction

When we look at poetic computation this way — as work with computers organized around a particular goal — it is clear how it is distinguished from being just a genre of new media art, just a method of literature, just a clever game. It is distinct to the extent that it work against technocracy and for people: as simple and as hard as that.

It is possible for the output to be co-opted and integrated into advertising. It is possible for work to sprout anywhere anyone is working with aesthetics.

Throughout these past few weeks, I keep coming back, as a touchstone, to two different ideas. The first is the core conceit of "The Ship Who Sang" series: in the future deformed humans are sealed up into ships, giving what might be objects life and personality. The best AI is augmented human.

The second is the talk given by Sara Hendren, wherein she discusses the notion that *all* tech is adaptive tech. If we begin at this point it is so easy to question what we do, what we adapt for, what we want to note, augment, expand.

Works that keep these same spirits, kindred, are works of poetic computation.

Description: What one must be

Willing to keep looking. Willing to fail. A little bit in love with machines and the spirits that live inside them.

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