Unconsciousness by Design

Addictive Technologies and the Escape from Freedom

By Cheryl Hsu

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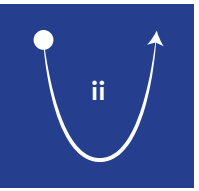

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Abstract

How does human-centred design lead to addiction? This normative research project explores how designers of technology are complicit in the co-production of addictive user behaviour, unconsciously shifting the burden of responsibility by deferring to the desirability of "what people want." These unconscious designers are themselves ideologically "addicted" to the promises of the technological fix, creating surface solutions that reinforce a status quo that commoditizes users of technology for profit. By foregrounding the technocratic intolerance of uncertainty and the need for existential responsibility, this research proposes how designers must consciously take an ethical stance to their practice in order to manifest empowering technologies that are respectful of the human condition.

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This research project has been a deeply personal and existential journey, and I truly believe I would not have made it out to the other side without the moral, emotional and intellectual support of an incredible group of humans around me.

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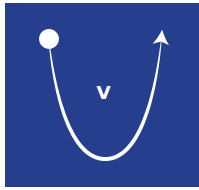

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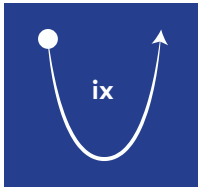


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Preface

"As you will discover, people find it very difficult to act on what they know. To act is to be committed, and to be committed is to be in danger. In this case, the danger, in the minds of most white Americans, is the loss of their identity. Try to imagine how you would feel if you woke up one morning to find the sun shining and all the stars aflame. You would be frightened because it is out of the order of nature. Any upheaval in the universe is terrifying because it so profoundly attacks one's sense of one's own reality."
—James Baldwin, A Letter to My Nephew

As the car enters the city by highway and the lights of the glass towers stream past me, my hands unconsciously grasp at my pockets and my fingers ghost over the smooth glass of my phone. I experience a sudden flash of urgency, a mild but still harrowing feeling like I might be missing something.

I deleted my Pokémon Go application six months ago, and I still occasionally catch myself wondering if I've missed a Pikachu.

This kind of personal distraction feels part and parcel of the the post-Trump media-saturated present, also declared as the "post-truth" world. As the stabilizing foundations of fact and truth and its safeguard industries – journalism, science, academia – are questioned, I'm not sure if I can trust my reality anymore. What I can trust however, is the cloying presence of a virtual Japanese animated character and my capacity to forget the world in catching it.

The media has declared that we have entered a crisis of **directionality**. This void of post-truth is ambiguous, destabilizing and isolating, and its blanket of darkness denies a clear path forward. Trying to connect to the world through news consumption merely heightens fear and anxiety. The mood of our time is uncomfortable, anxiety-inducing, and at its worst can produce a kind of paralyzing despair that makes it impossible to imagine possible alternative futures. I also believe we're in crisis of **agency**, where people lack the ability, tools of empowerment and structures of support to be able to find footing in the midst of this void. Surrounded by an abundance of technological conveniences, the lack of direction and agency has led to fearful passivity, and the most vulnerable landscape for ***addiction***.

An easy and compelling narrative is black and white: there is an evil cabal of technologists, capitalists and politicians determined to take advantage of and profit from our attention. This neoliberal, profit-maximizing, market-obsessive elite is deliberately creating the conditions – the incentives and systems – for addiction simply because passive users are more profitable for the tech companies. While there may be some truth there, I want take a step back from the vilifying perspective to ask: how might these designers and technologists be addicted to underlying ideologies? As Hannah Arendt described in her book *Eichmann in Jerusalem* (1963), the banality of evil is a result of the apolitical retreat from ***ethical consciousness*** through the modern technocracy. I wonder whether designers (and by this term, I describe the people afforded the social and material privilege to create) also seek to escape the responsibilities of the human condition through the delights of technology.

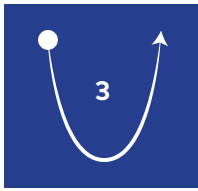
What is my reason for bringing the language of addiction to this research with all of its normative baggage? This research project started because I wanted to understand when and

why something that is supposedly beneficial for humanity – technology in this case – becomes so desperately bad for people? Addiction occurs where a person no longer has agency over a compulsive behaviour, pathologically depending on it despite harmful consequences. There are no simple causes for addiction; the very things that we have the capacity to become pathologically dependent on – food, sex, technology, religion - are also things that can be good for us, nourish us, and give us meaning. So what is about the modern condition that compels people to escape the world through addiction?

I want to preface this journey by warning that this research project does not offer the comfort and reassurance of answers, but confronts the need to ask more and deeper questions. I wrote this paper for other similarly-minded designers who want to understand the enormous responsibility and ethical role of a designer. As designers who want to make *good* things for the world, we must always be critically investigating: Who and what defines that concept of "good"? Who benefits from our designs? Who doesn't? The discomfort of the slow and arduous questioning is a necessary condition of the kind of thinking that precedes ethical action. This is a necessary counterbalance and antidote to a productivity-obsessed culture that glorifies speed and efficiency.

All designers hold the responsibility of shaping the future. The choices that designers make, conscious or not, are the normative scripts that get written into the artifacts and environments that we design. These scripts then influence the actions and thoughts of the people who use and live in our designs, and create ontological ways of being-in-the-world. (Willis, 2016). At the same time, we also live in a contingent world where it is impossible to control the exact consequences of our designs. However, this is the joy and pain of the existential condition; our ability to make meaningful choices and imagine possible futures in the face of uncertainty.

As Sartre says, "if we can imagine, we are free." We might have to look up from the phone once in a while.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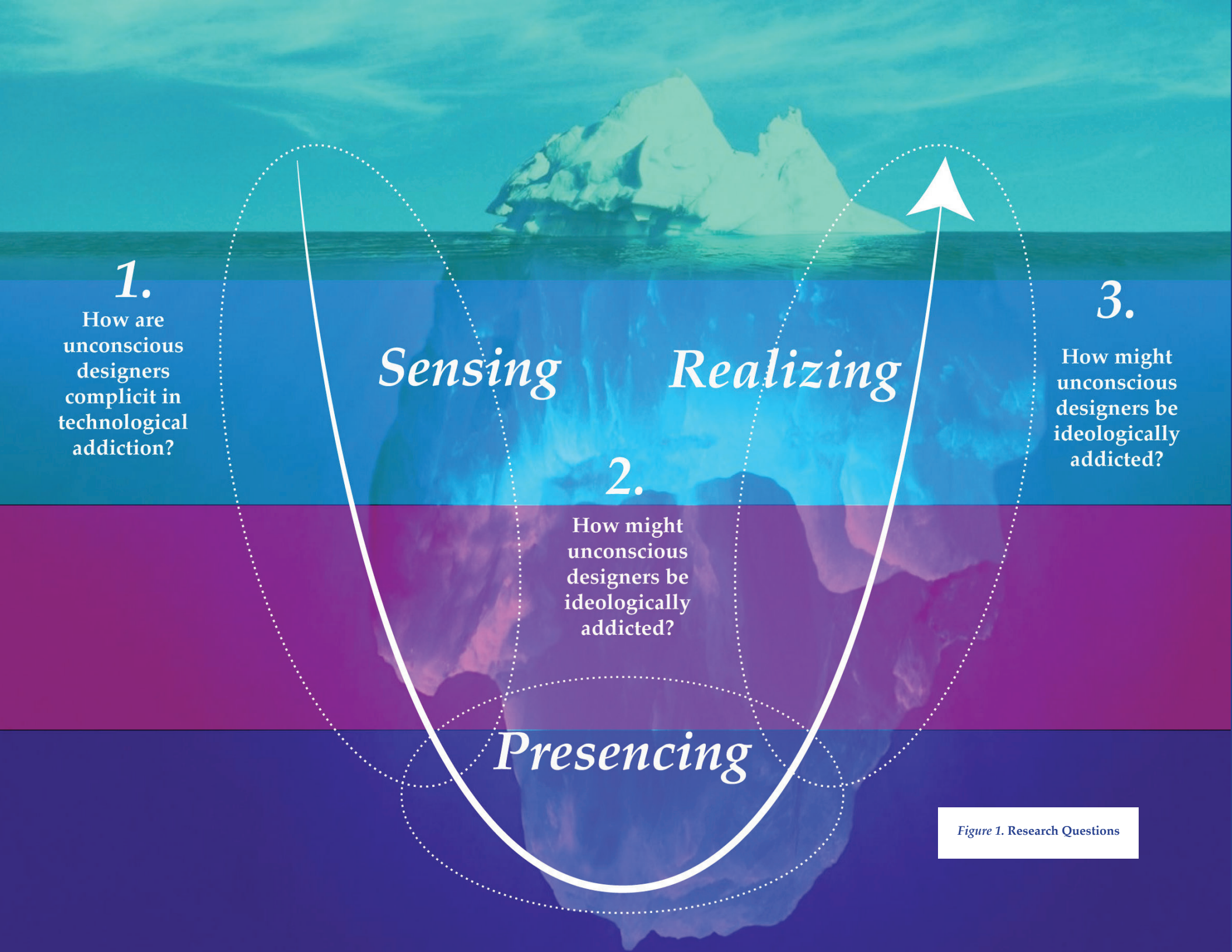


Figure 1. Research Questions

Introduction

"What is addiction, really? It's a sign, a signal, a symptom of distress. It is a language that tells us about a plight that must be understood."
— Alice Miller

The technological progress of Silicon Valley operates at break-neck speed, with tech platform behemoths like Facebook, Google and Amazon prototyping innovations through immediate behavioural feedback and informed by a veritable flood of user data. For users, digital environments are endlessly shifting and moulding to meet their desires. Digital menus are engineered for the optimal pleasure of the user experience: seamless and frictionless delight. Designers and technologists create these interfaces to nudge, suggest, and seek out recommended behaviour (or conversion) through manufactured choice architectures. As a user, it starts to feel like the machine knows her desires, needs and preferences better than she knows them herself.

The good news is that the essential role of human-centred design is being recognized at these technology companies. The value proposition of the designer is to advocate for the user experience, ensuring that the product is desirable and reflective of "what people want". At the same time, these designers are beholden to the constraints of their companies, designing for the optimization of pre-set metrics to meet corresponding business objectives. In order to increase engagement and conversion metrics, designers have optimized digital interactions by conflating the desirability of the user experience with the measurement of "time spent": the more desirable the product, the more users want to stay on the platform for as long as possible.

However, the paradox of increased digital connectivity is that the more people rely on their phones, the more they feel alone, and the more isolated they feel, the more they depend on their phones (Turkle, 2011). The business prioritization of the acquisition of attention is leading to an adversarial relationship between users and products, where users feel like they are no longer in control of their interactions with technology, even characterizing their relationship to their devices as an *addictive* one. Despite the fact that these platform companies purport to put user desires at the centre of their products, why does the digital interaction provoke such a profound sense of disenfranchisement for these users?

When I first embarked on this research project, I wanted to ask: how might addiction to technology be by design? As I continued to dig deeper into the question, the question of intentionality around the design of addiction came up; while designers are part of co-producing the conditions for the addictive interaction, they aren't necessarily doing it on purpose. Through this research, I investigate how designers might be complicit in creating the conditions of user addiction through a form of ethical unconsciousness, which I argue to be a mode of thinking that is automatic and non-critical. I argue that design thinking and human-centred design methods, when practiced thoughtlessly and within the context of a data-driven technology company, enable this ethical unconsciousness in treating the "human", or "user" at the centre of design as an interchangeable commodity — a decontextualized set of numbers and behaviours — to be manipulated, managed, and controlled. Embedded within an business environment where they must design for growth, designers end up reinforcing exploitative practices that harm the people they design for.

Two forms of unconscious design are explored are critiqued in this research: the first is **unconsciousness by limitation** where designers opt out of the burden of responsibility by choosing to limit their power to a narrow field of influence. These designers focus on the success of their work as defined by the methods and craft of their practice without consideration of its deeper political and ethical implications. The second form of unconsciousness is **unconsciousness by worldview,** where designers recognize that their work has powerful consequences, but defer ethical responsibility to their companies and industry norms. Here, designers *shift the burden* of their ethical consciousness to their companies and underlying ideologies, electing to offload the uncomfortable burden of responsibility.

As my original research question on **"how might addiction to technology be by design?"** expanded, other questions emerged around how the design of addiction may be a symptom of something much deeper. This report is structured through a synthesis of Otto Scharmer's Theory U with the Sohail Inayatullah's Causal Layered Analysis (described in Chapter 2: Project Framework) to reflect a research journey asking the following questions:

How are designers unconsciously complicit in technological addiction?

The first arc of the research sets the context of addiction theory, exploring different perspectives on addiction to technology to understand what people might be seeking and avoiding through technological distractions. Next, I interrogate how human-centred design thinking and methodologies can lead to harmful and addictive outcomes as long as they are practiced within an apolitical and neutral vacuum. I show that the non-critical practice of behavioural design, persuasive design for the goals of pleasure and desirability are rooted in philosophies that undermine the freedom and dignity of the human condition. The central argument is that the power of design is not sufficiently coupled with the responsibility of the practice. As long as designers remain unconscious of the ethical conditions of their design practice, they will continue to reinforce the status quo by designing unconscious users - users that remain passively prone to addiction and manipulation.

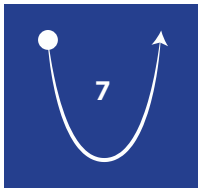
How might designers be unconsciously and ideologically addicted?

Through the hypothetical framing of the addicted and unconscious designer, the second arc is an exploration of the social causes, world views and myths underlying the ideological addictions of the designer. I suggest that ideological addiction is a form of "unconsciousness-by-worldview" for designers, limiting imagination of other possible futures outside of these closed-world ideologies The ideologies of Technological Solutionism, Capitalism and Techo-Scientism are revealed to shape the kinds of values and assumptions taken as common-sense within Silicon Valley. Through an philosophical investigation, I propose that societal addictions to technology stem from an avoidance of the existential malaise of the human condition – or more specifically, the avoidance of existential human freedom in an uncertain and contingent world. This has lead to the pathological dependence on a framing of a life world that can be measured, controlled and exploited.

How can designers consciously ethically create alternative futures?

The concluding third arc of this research puts forward a process-oriented recommendation relaying two key messages, First, ethics in design is uncomfortable but empowering: the process of critical thinking and philosophical reflection allows the designer to escape the reinforcing ideological loop to imagine and enact emancipatory futures. All theories of ethical action rely on the revealing of ideological-moral biases in order for designers to create better and more democratic ways of being of the world. Secondly, the starting point for design ethics is the optimistic embracing of ambiguity and contingencies of human freedom.

By accepting the whole of human experience, which includes discomfort as much as pleasure, designers are able to steward the design of ethical technologies that reduce the harm of its users and reinforce the dignity of human condition.



CHAPTER 1
Addiction to Technology: The Context

Addiction to Technology: The Context

Where we are now: Addicted to our Devices

"We're addicted to our phones". This headline has been pervasive in the news cycle, from personal stories guiltily admitting phone dependency (e.g. Andew Sullivan's article *I Used to Be a Human Being*) to discussions around the ethical responsibility of technology companies regarding addiction (e.g. Tristan Harris's *Time Well Spent* movement). The media is obsessed with the spectacle of phone and internet dependency, describing the prevalence of addictive behaviours and comparing tech companies to casino owners. However, despite using the language of addiction, phone addiction still tends to be trivialized as a "benign" affliction. Internet addiction or device addiction has not been labelled as an official disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM) or diagnosed with a commonly agreed upon definition. Although it has become widely acknowledged as a phenomenological trend – for example, 50% of youth report feeling addicted to their mobile device (Common Sense Media, 2016) – the problem remains in the fuzzy realm of subjective experience.

This contextual chapter explores the phenomenological relationship between people and technology characterized by ***addiction***, generally agreed upon as a habitual behaviour that feels uncontrollable and compelling despite harmful consequences (CAMH, 2017). The literature review of addiction theory reveals the contradictory positions that experts hold around the causes of addiction. Is it a mental illness, hereditary disposition, or weakness of will that sits with the individual? Is it the responsibility of the companies who design and manipulate technology to create experiences of pleasure, delight and convenience that make the addictive products impossible to resist? Or is addiction a deterministic condition of the technology itself? Perhaps we can adapt Marshall McLuhan's famous statement: if the medium is the phone device, the message is the addiction.

I believe that the reason why addiction is so fascinating to us is because at its core, it is a discussion about the paradox of freedom and autonomy. Dr. Gabor Maté, a physician specializing in addiction expresses a fundamental question of addiction as: "who is in charge, the individual, or their behaviour?" (Maté, 2010) This is the philosophical puzzle of *akrasia*, described by Socrates as the state of acting against one's better judgement. The modern individual is told that she **chooses** her addiction by opting into a social media platform, or buying a phone. However, the "choice" does not always seem to belong to the self-interested, rational, and economic person. Is it in anyone's long-term self interest to neglect work in order to binge on Netflix or obsessively scroll through social media statuses? This is the paradox with the abundance of choices seemingly made available through technology; the more we have, the more we crave. The machines (phones, computers, video games) that surround us – with their corresponding promises of everything that we "desire" such as convenience, entertainment and delight – fail to satisfy us. Instead, they trigger the insatiable desire for more: more friends, more likes, more products, more distractions.

A Pocket of the Future: The Slot Machine of our Phones

'Patient Zero' of the technological addiction epidemic is the North American gambler found in Las Vegas, an opulent and carnivalesque enclave of abandon architected for people to escape the ennui of their everyday lives. Las Vegas is also considered a marvel of innovation and technological sophistication from which adjacent industries can draw inspiration how to thrill, entertain and delight people. Media theorist Neil Postman in his book *Amusing Ourselves to Death* saw Las Vegas as a city that is singularly devoted to the idea of entertainment, serving as an example by which human lives can take on the form of show business.

In her book *Addiction by Design: Machine Gambling in Las Vegas*, anthropologist and researcher Natasha Schüll spent over a decade in Las Vegas to detail how the physical and digital shape of the casinos and slots machines have been designed intentionally for addiction. The architecture and interior design of the casino is an unapologetic and pathological exploitation of sensory delight, where the labyrinthine space is designed to induce information overload and confusion. However, the real innovation is the digital slot machine, from which 85 percent of industry profits are drawn estimated in 2003 (Schüll, 2012). The digital slot machines are decidedly different than a poker or blackjack game: as opposed to human interaction, the remoteness of the interaction with the machine makes the game even more compelling

Schüll discovered that the machine gamblers that she spoke with are not actually playing to win, but simply to continue their play. The slot machine's allure is the speed and efficiency with which it is able to pull the gambler into pleasurable "flow", which is a mental state of full immersion (Csikszentmihalyi, 2009). Schüll describes this immersive escape experience as "the zone", an affective state where everything – including one's sense of self and body, seems to disappear. The zone operates though the tight cybernetic loop of perfect contingency between the player and the machine, where the feedback provided by the machine is in complete alignment to the action. It is this sense of certainty that is so alluring to the gambler, even if it is only the certainty that he or she will lose. This illusion of control creates a numbing sense of comfort where the contingencies of real life recede.

While the "zone" state is freely "chosen" by the free individual to engage with, the entire environment of the casino and the machines are designed to get gamblers into the zone as quickly and for as long as possible. The gambler is at the mercy of complex, intentionally designed machines fed by intensive data gathering and surveillance. Schüll notes that there is an "asymmetric collusion" in the co-production of the addictive interaction, where the designer has all of the rational control and decision-making power for maximizing profitability, while the gambler unconsciously chases the affective zone state (Schüll, 2012).

The same forms of design manipulation and coercion occur outside of Las Vegas and much closer at hand. Tristan Harris, an ex-Googler and "design ethicist" has been diligently sharing the ways in which internet companies use "technological hijacks on psychological vulnerabilities" in order to keep users hooked, from intermittent variable rewards through notifications to the cultivation of FOMO (fear of missing out) (Harris, 2016). For example, 'like' buttons on social media reinforce our cravings for social approval and drive our need to stay on the machine as much as possible. All of this reveals the spreading of a design ethos normalizing psychological exploitation and unchecked by the ethical responsibility.

As William Gibson says, "the future is here, it's just not widely distributed yet." The celebration of endless consumption exhibited in Las Vegas, from machine gambling, to the gluttony of buffets, to excesses of shopping and sex, is a pocket of a future where the world is configured as a self-annihilating pleasure zone. Without questioning the endless pursuit of pleasure and comfort as the highest order of happiness in the Western world, the end game of design becomes addiction.

What is addiction: Shifting the Burden

"Why do men fight for their servitude as stubbornly as though it were their salvation?"
— Spinoza

It is important first to understand what addiction is: is the need to compulsively check your email on your phone really the same as Natasha Schüll's gambling addict?

Addiction is commonly defined in clinical practice as the prevalence of the 4C's: 1. Craving; 2. Loss of Control; 3. Compulsion to use; 4. Use despite Consequences (CAMH, 2017). While the official definition of addiction typically points to substance dependency on alcohol or drugs, the experience of addiction has also been extended to excessive behaviours such as gambling, over-eating, sex, and even power-seeking and religious zeal. Researcher Dr. Bruce Alexander defines addiction as the "overwhelming involvement with any pursuit whatsoever that is harmful to the addicted person, to society, or to both" (Alexander, 2008). Alexander saw the term addiction as an indispensable word because it gives name to a basic fact of human psychology, where human beings have the propensity to become so involved with a new habit or pursuit that it can be compared to "voluntary slavery" (Alexander, 2008). The difference between passion and addiction can be a thin and subjective line; passions feel fulfilling and meaningful, but addictions only offer a fleeting sense of gratification but leaves one unsatisfied. Therefore, addiction is worth questioning on two accounts: what can be so desirable that it compels people to commit to "voluntary servitude"? Furthermore, why and when does society choose to shame and condemn some addictions (ie. smoking and drugs) while celebrating others as passions (ie. work)?

Another representation of addiction in systems thinking is the **shifting the burden** archetype, which is a causal loop that arises when people relieve the symptoms of a problem through

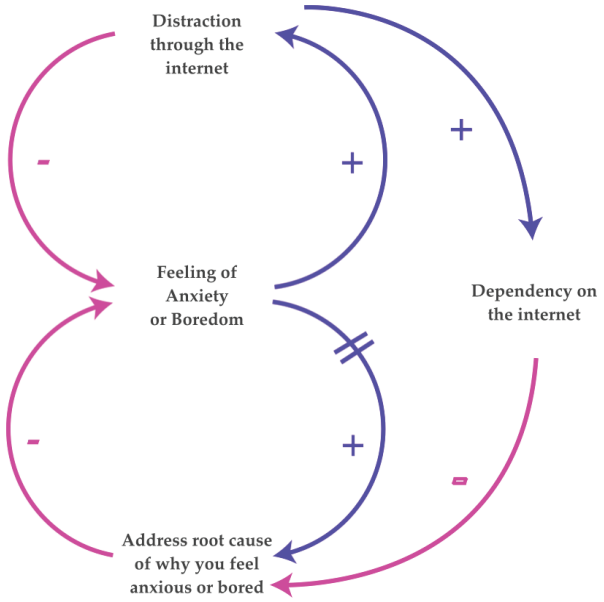


Figure 2: Shifting the Burden Systems Archetype: Internet Dependency

a "symptomatic solution" and become increasingly dependent on it (See Figure 2) For instance, one's compulsion to check Facebook, watch Netflix or play a video game is a reaction to boredom and anxiety stemming from a root issue – perhaps the avoidance of work. While the internet proves successful in the short-term by providing delight and distraction, overtime, the increasing dependency on the internet will negatively impact one's ability to see the real solution: facing the responsibility of one's work. The **delay** and effort of the actual solution makes it harder for the individual to choose it, especially when the short-term offers immediate gratification (with often hidden harmful consequences). This reinforcing loop of shifting the burden to a short-term solution instead of addressing the root cause mimics the cycle of addiction. As Senge and Scharmer discovers, "the growing reliance on modern science and technology and our growing sense of disconnection both arose from the same underlying 'shifting the burden dynamic." (Senge, Scharmer, Jaworski, & Flowers, 2008)

Addiction remains controversial because its definition radically differs between disciplines (e.g. neuroscience, behavioural psychology, and sociology) and personal and professional philosophies. Its treatment is also highly contingent on how researchers identify the cause(s) of addiction: is it is a result of disease, genetic disposition, weakness of will or determined by one's social environment? While the disease model of addiction is the predominant perspective, a counter argument is being made by some doctors, psychologists and neuroscientists about addiction as a holistic phenomenon that cannot be managed by reductionist silver bullet solutions. For example, individual abstinence is the most common form of addiction therapy – if you can't handle your addiction, cut it off. These researchers argue that the overwhelming focus on the individual ignores the fact that addiction is a public health issue that is a reflection of the overall health of society.

Dr. Gabor Maté, the author of *The Realm of Hungry Ghosts: Close Encounters with Addiction* and an advocate for harm reduction policies, sees mental illness and addiction not simply as genetic diseases but also as the product of social determinants of health – e.g., race, class, gender, economic status. Maté takes addiction as a spectrum, where the normalised behavioural addictions of society, addiction to money, power, material consumption - are only different in degree of severity to the drug addicts we cast as outsiders. Furthermore, the complex causal relationships within the phenomenon of addiction means that sources of addiction cannot be simply identified as an isolated problem to solve. Addiction is a "wicked problem", described by Horst Rittel as a difficult and often contradictory problem with no definitive definition or obvious right or wrong solutions.

Understanding addiction as a **co-production** means that one must avoid isolating the problem to an individual or to the substance. The social environment of the individual has been shown in research to impact addiction, revealing that emotional isolation, powerlessness and stress are conditions that promote the neurobiology of addiction in human beings. For example, US military personnel post Vietnam succumbed to addiction because "there was too wide a gap between what they've been told and the reality they witnessed and experienced. Lack of meaning, not simply the dangers and provocations of war, was the major source of stress that triggered their fight to oblivion" (Maté, 2010).

In the study titled *Rat Park* (1981), Dr. Alexander hypothesized that it was not the drug (morphine) that caused addiction for rats but social isolation and dislocation. Rats studied for addiction were typically placed in standard "Skinner box", a standard laboratory apparatus and operant conditioning chamber that kept the rat isolated to study behavior. As an alternative, Dr. Alexander created housing colony of rats that was 200 times the area of the Skinner box, and then made morphine available. He discovered that the caged rats took to morphine instantly, whereas the rats in Rat Park resisted the morphine and drank the water instead. Dr. Alexander's research provided evidence that addiction can be considered a symptom of social dislocation, concluding that Skinner box rats were induced into addiction they were forced to cope with the stress of "social and sensory isolation" (Alexander, 2010). In a later book titled *The Globalisation of Addiction: A study in poverty of the spirit*, Alexander examined similar historical cases where people who were similarly socially and culturally isolated (e.g. colonized native people in Canada) had much higher cases of addiction to alcohol, drugs, television, gambling, internet etc. These individuals, similar to Schüll's gambler, used their addictions as an anesthetizing mechanism to cope with their dislocation. However, the attribution of addiction to genetic vulnerability makes it easier to isolate the cause to a problem population, rather addressing a more complex and systemic root problem.

In this research, I will be looking at addiction through a systems and ecological framework, exploring the dynamic interrelations between personal and environmental factors including social, institutional, and cultural contexts. While the genetic disposition to addiction is acknowledged, the trauma of addiction needs to

be understood as a fuzzy matter that crosses the lines between the nature vs. nurture debate. My core understanding of addiction is that it is a symptom of deeper and more systemic problems, manifesting as a "shifting of a burden" to a quick fix that is unsustainable and harmful in the long-run.

Shifting the blame on the Addict

It appears that the hyper-individualist and competitive global society places the blame of addiction on the individual, operating on the premise that the individual has full control and autonomy over the self. The impoverished myth of the individual as a rational economic agent is still embedded into our policies and social expectations, so that the instances where people reveal any loss of control over their urges become sources of great shame and indictment. We exploit extreme stories of addiction – cases where people have self-sabotaged their lives by gambling away their life's savings – as forms of public spectacle, demonizing addicts who exhibit more violent forms of addiction to create distance from the safe non-addicts. This practice of other-ing enables the offloading of the responsibility of addiction.

For those who are able to "control" their habits, we create profitable protective enclaves where we deem permissible people's vices and desires as long as they reinforce the growth of the economy and keep people productive. Physical spaces (e.g. Las Vegas, Disney World, shopping mall) and virtual spaces (e.g. Netflix, Facebook) are used to blow off the steam of our behavioural impulses. However, these spaces reflect and trigger the desires and whims of the everyday addict, holding witness to the willful abandonment to the consumption of gaming, food, sex, shopping and gambling. Philosopher Jean Baudrillard saw contemporary spaces like Disney World, Las Vegas as "hyperreal" simulacra – they no longer simulate reality, but conceal the fact that there is no "more real" reality underneath (Baudrillard, 1994). Disneyland, Las Vegas and the Internet are reality as we know it- it is North America commoditized as an addicting world of excess.

So long as society limits itself to the disease-model of addiction or disregards addicts as morally weak or flawed, it can pretend that it is not complicit. We become blind to the fact that addiction is a continuum that we are all vulnerable to, and that we all in some way choose to shift the burden of anxiety, boredom and discomfort to short-term solutions that don't address collective social problems. Furthermore, as designers, we ignore the complex ecology of addiction and the level to which we are directly complicit in a system that promotes and reinforces addictive behaviours.

The User: Seeking Disconnection through Connection

"Gaming and social media have addictive structural features, like status, social connection, mastery, something to do. It feels like escape, you get to keep score and rank, that's where all your friends are."

— Lisa Pont, Addiction Therapist, CAMH

We are all, to some extent, familiar with the attraction of our phones as "users" of technology. The central question is why it is so alluring, and when it becomes a pathological dependency? While the degrees of harm are different, there can be parallels drawn between Natasha Schüll's addicted gambler and the everyday user of the internet and digital devices. The addictive interaction, in direct opposition to the naïve guarantee of connectivity through networked technology, sees users seeking disconnection and escape. Internet addiction researcher Kimberly Young sees the addiction on a continuum that goes from mild to severe based on a criteria of internet dependence such as increasing tolerance: you need more to achieve satisfaction over time; failed attempts: you've repeatedly made unsuccessful efforts to cut back on internet use; withdrawal: you feel restless, moody or depressed when you try to cut down on internet use and escape: you use the internet as a form of escaping from problems.

Technology, like any substance used for short-term relief, escape, distraction or comfort, has a short term benefit but long term consequences. I interviewed Lisa Pont, an addiction therapist at CAMH who deals with gaming, gambling and internet overuse, and is mostly working with males at a transitional age (between 16-25 years old). Pont acknowledges the youth she works with relies on technology as a form of escapism, seeing the digital world as preferable to the challenges of the real world. Pont expresses that people who are already at risk with social anxiety and depression are more likely to go online to meet their social needs because the online world is less threatening and more predictable. However, their methods of escape can reinforce the underlying problem of their social isolation due to the conditions of internet use, like the exacerbation of social comparison on social networks or simply the fact that users are often physically alone when they conduct in online activities. The social networks anesthetize the stresses of the present, but reinforce existing psychological distress in the long-term.

One of the chief causes of addiction is boredom, which has been studied by psychologists and philosophers as a form of restlessness or ennui stemming from a lack of purpose, motivation and direction. The desire to avoid boredom is so strong that people are willing to choose unpleasant experiences as an alternative; a 2014 study revealed that research participants were more willing to give themselves electric shocks than to be left alone with their thoughts ((Wilson et al., 2014). Boredom is especially unbearable for younger people as indicated from a 2003 US survey, where teenagers who reported being bored were 50% more likely to take up smoking, drinking and illegal drugs (CASAColumbia, 2013). Pont pointed out that youth are particularly vulnerable to addiction from boredom because they have yet to learn how to establish hobbies and other activities that give them a sense of meaning. Instead, they turn to gaming and social networking in order to distract themselves.

Digital technologies prove the potential of the most pleasurable self-annihilating escape, where a phone is capable of propelling the user into a world of architected distractions. As gainful employment becomes more competitive and conversations arise about a future "world without work" through automated labour, virtual reality technology has been heralded as a new way people can live enriching cyber-existences that fill the eroding sense of purpose that had previously come from work. The likelihood of this future already has its proof in the present. Researcher Erik Hurst discovered through a study that 22% of young men in their twenties who had not worked at all in the prior 12 months eagerly turned to gaming to fill their leisure time. (Hurst, 2016). When the conditions of the "real world" fail these young adults, video games are meticulously designed as a desirable alternative world through its physical artifact design, seamless narrative delivery, and the reinforcement of achievable goals and reward economics. All of these design choices collude to create a comforting but passive experience for the user, where the user transforms into an "ambiguous conduit" where the game mechanics "solve the question of meaning in a world where transcendent values have vanished" (Guan, 2017).

The desire for escape through connection is a phenomenon that is not just limited to the western world. This tendency is exemplified through the rise of Hikikomori in Japan, a social phenomenon where Japanese youth (the majority of whom are male) are refusing to go to school or get jobs, opting instead to live in their bedrooms surrounded by screens. Named the "post-modern hermits of Japan", these young men see technology as simultaneously their escape from the hyper-productive demands from Japanese society, as well as their one connection to a fantasy life where they create their own sense of order and independence (Rizzo, 2016). Ultimately, the Hikikomori are young people who feel alienated from a society that is intolerant of ambiguity and promotes gambari, a concept that marries virtue with the the act of working hard and enduring difficult situations in order to achieve one's goals. It is interesting to note how different national cultures impact the behavioural response – where Japanese youth in a culture moralizing conformity find escape in muted withdrawal, and North American youth enculturated in the

western values of free speech and freedom choice use technology to blissfully enact their whims.

In a popular article, writer Dale Beran shared a fascinating perspective on the North American members of the anonymous internet forum 4chan, primarily adolescent boys who felt alienated from their social environments and sought escape and connection through the internet community. However, the forum's aggressive and unapologetic demand for libertarian free speech and support of Donald Trump reflected a violent rejection of the status quo and the nihilistic vulnerability of its members. The 4chan culture is an apolitical inversion of the helpless flight from a "real" world where these boys lack esteem and control, transformed into the infantile desperation to claim absolute control and to "win". Beran describes this sense of control and power as "one that only provides a momentary sense of relief ("you are acting powerful by retreating into video games and the internet!") but like scratching a mosquito bite, it ultimately causes more dissatisfaction" (Beran, 2017). This internet forum reveals how important it is not to merely dismiss addicts as passive and fearful escapists, switching off from the world due to an inability to deal with it. As philosopher Leslie Paul Thiele describes, boredom and addiction "does not always produce enervated resignation and passivity. As often as not, it produces a fast-paced systematic exercise of power.'(Thiele, 1997) Addiction can be an act of rebellion as much as an act of escape – from this example, it seems to be about self-destructive rejection a world that seems to offer no other alternative.

As long as jobs become increasingly automated and the need for human labour is questioned (for the better and for the worse), an inarguable fact is that people will have more access to leisure and free time. The experience of profound boredom and void of meaning and purpose will be an increasing concern not just for youth but for everyone. It is necessary to critically debate how we will design for this future, and resist the automatic assumption that technology (like VR) will inevitably fill and solve the social, cultural and psychological dimensions of this lack. However, the relentless speed of tech economy also makes it hard to slow down the innovation enough for long-term ethical considerations. Pont wonders about the invisible trade-offs and long-term public health impact of the people's inability to tolerate boredom, especially when it is further reinforced through the reliance on digital distractions. She understands that in market economy of free choice, people will demand these new technologies because they are novel, comforting and ubiquitous. On the supply side, big business will blindly drive technological adoption because progress demands it. As long as the technology industry profits off people's intolerance of boredom and anxiety, designers can justify preying on the "negative emotions frequently serving as internal triggers" (Eyal, 2014) that further promotes the addictiveness and subsequent profitability of digital products.

The Online Skinner Box for Addiction

The experience of escape and illusory control can be an addicting interaction for the disenfranchised, alienated and bored, especially when the everyday environment of the user is specifically designed to trigger psychological need to be on device. How often have we been in the company of friends, and one person checking their email triggers a chain reaction of glowing screens? The sheer ubiquity of the social networks makes it difficult to opt-out, as the network effects of the product infringe on all aspects of social life. The social engineering of the platform intensifies a common fear: the fear of missing out (FOMO). You feel the need to be on a platform because your friends are on a platform. While the degree to which the physical world can be artificially configured has its natural material limitations, our online worlds can be architected from scratch to grab and guide the attention of the user.

Digital Ethicist Tristan Harris and journalists like Alexis Madrigal (How Facebook Designs the 'Perfect Empty Vessel' for Your Mind) expose to the public the level to which their digital environments are architected for the conditions that

induce as much time online as possible. The business interest in user addiction – as long as it is "benign" – is that time spent on a platform is incredibly profitable for companies because it translates to the accumulation of user data and advertising attention. Social media platforms promote a culture of explicit performativity in order to draw data – the more information that Facebook, Snapchat and Twitter can extract from users, the more successful it is. Like Skinner's rats, platform users live in environments that are designed for operant conditioning through reward mechanisms while designers observe and control user behaviour. The "like" operates as intermittent positive reinforcement, creating a pleasurable rush of dopamine that compels users to go online, stay online, and keep pressing the buttons that give them the pleasurable stimuli. The user attention in return allows for flow of information for business, where designers and engineers mine data and insights to be then transferred into the design of more desirable traits into the product. This reinforcing loop of data and attention for the design of desirability further enhances the product's "stickiness" and the ability to "hook" its users (See Figure 3).

Using euphemistic language about "stickiness" and "hooking users" makes the engineered irresistibility of products seem benign. The industry draws a hard line between a "real" addiction, for example to harmful drugs like heroin, and a "false" addiction, such as the harmless craving for Netflix. The levels to which the industrialized production of addiction have been normalized should not be surprising. By looking at adjacent areas like the tobacco and junk food industry, we see how how **marketing** and **science** have long been employed to be able to enhance the addictiveness of products for consumption. The widespread smoking of cigarettes was made successful as a social phenomenon through the natural addictiveness of the product (tobacco and nicotine) and the effects of targeted advertising around making cigarettes "cool". The tobacco companies profited off the addiction enormously, and reinvested their profits into the advertising and engineering of the product to boost its addictiveness. It was only when the explicit link between

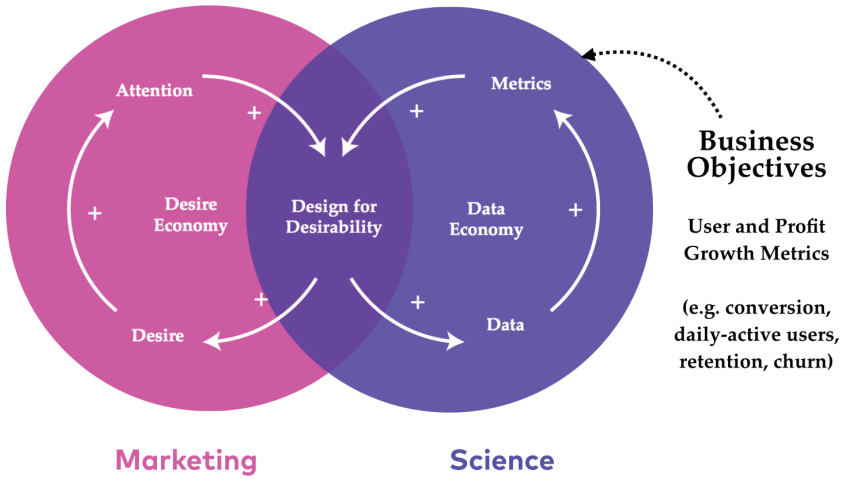


Figure 3: The collusion of marketing and science for desirability in the digital economy.

smoking and lung cancer was made that the harm of cigarettes had to be curbed through regulation and cessation campaigns. Similarly, the success of the junk food industry happened at the intersection of marketing and science; these companies hired food scientists and engineers to enhance the addictiveness of food products that hit the maximum "bliss point", which is the amount of salt, sugar or fat necessary to optimize pleasure and palatability (Moss, 2013) These junk food companies aggressively advertise their products to consumers, especially children, ensuring that schools and supermarkets had a ready supply of drinks, confectionery and chips in vending machines and check outs. In a study commissioned by the Heart and Stroke Foundation, it was discovered that children between the ages of 2 and 11 view over 25 million food and drink ads on their favourite websites (Heart and Stroke Foundation, 2017).

The level to which addictive interactions are exacerbated and preyed upon by gambling, tobacco and junk food industries through the power of science and marketing must be

foregrounded as we approach the regulatory nuances regarding technology use. There is no question that addiction is extremely profitable. However, the neoliberal free market society still demands responsibility of the individual in terms of self-regulation, turning the "problem population" of those especially prone to addiction as an edge case problem.

What scientists and philosophers agree on is that desire is self-reinforcing: the more pleasure you pursue, the more you crave it. This kind of "motivated repetition" of the pleasurable act changes our neural pathways where "synaptic patterns reinforce over countless repeated occasions." (Lewis, 2015) As Bruce Alexander asks through his study *Rat Park*, insights about needs and desires drawn from the observation of behaviour determined within isolated environments need to be questioned. Click-bait might not be the root problem just like the morphine wasn't the sole source of addiction for the rats; solving a symptomatic solution without addressing the root problem means that people will just find another addictive substance to shift their burden to. Furthermore, compliant with the neoliberal exercise of conforming the responsibility of free will to choice, the difference between the skinner rat and the internet user is that people aren't trapped against their will, they desire it. People ultimately want these products and services and choose to opt-in to Facebook and other internet platforms. However, this desire for escape is in direct confrontation with the dual crisis of **directionality** and **agency**, where people lack the meaning and support to be able to face reality. Instead, addicts continue to live in and for the present, shifting the burden to short-term escape mechanisms that erase the responsibility, or even consciousness, of long-term solutions.

Switching off the device doesn't switch off the problem

Popular books such as Nicolas Carr's *The Shallows* (2011) and MIT sociologist Sherry Turkle's *Reclaiming Conversation* (2015) have captured the contemporary zeitgeist by critically examining the kinds of trade offs people unconsciously make for benefits of digital technology. Turkle worries about the social and cultural phenomenon where people increasingly prefer the virtual over the real as an escape: the real carries risks of boredom, discomfort and awkwardness, whereas the digital presents the supposedly unconstrained freedom to design one's idealized self. However, the pattern of addiction reveals that as people seek and depend on technology in pursuit of greater control, they come to feel controlled by their devices instead (Turkle, 2015). In response, the act of "unplugging" from our devices has become the symbol for regaining control and autonomy over the self. However, the black and white vilification of the digital and preference of the real – an established theme in the "disconnectionist" literature – can also be an oversimplified fix.

Are the social interactions that are embedded within our devices and technologies a product of the technology itself, or is it largely determined by a complex web of social relations that overlap the digital and the physical? Other theorists like Evgeny Morozov and Nathan Jurgenson suggest that "disconnectionists" have committed to digital dualism, which wrongfully splits contemporary experience into the real world (IRL) and the online. According to Jurgenson, "digital connection is deeply interwoven through social life; it is made of us and thus as infinitely complex as we are." (Jurgenson, 2013) Digital users are like Donna Haraway's cyborgs, where lives are enmeshed in relationships both digital and physical. These relationships held with and through digital devices is not a simple one between the self and device but is a manifestation of a complex matrix of power relations, politics, culture, space, and language that mediate our experiences.

The conditions of addiction cannot be simply relegated to the digital, and the problems won't be switched off simply by putting away the technology. The power structures that create technology dependence are embedded within the social, political, and technological systems that act upon and structure our relationships – even when we go offline. As scholar Bruno Latour said: "It is neither people nor guns that kill. Responsibility for action must be shared among the various actants" (Latour, 1994).

Addiction to "fixing" addiction

For designers and technologists, the "addiction problem", which has received considerable fear-mongering in the media, can seem like another opportunity for a shiny solution. New products and services have been created in reaction to growing adversarial relationship with technology, from digital detox retreats "to avoid becoming a slave to your smart phone" to the "Digital Sabbath", which proposes giving up digital connection on Sundays a way to "disengage from the corporate machine". Apps like Freedom which help users block and manage internet connectivity are sold as productivity hacks. A lot of these solutions are designed to empower the individual to manage and control their device addictions, and to recover their sense of freedom and productivity from mindless technology-enabled distractions. However well-intentioned, these shallow interventions do little to address, or even question, the underlying problems underneath.

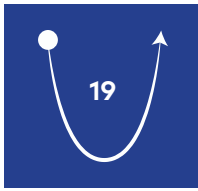
Evgeny Morozov is a vocal critic of self-regulation interventions that put the responsibility of curbing addictive behaviour on the individual. Are these shallow solutions to "fixing" addiction another case of "shifting the burden", a situation where instead of addressing the root cause, we merely distract from the real problem? How do we question the underlying values that a technological "fix" to technological addiction might script: for example, digital detoxes that serve to protect productivity and effectiveness within our work-obsessed culture? Morozov is justly concerned that as long as people defer their judgement to what technology is able to fix, users and designers alike ignore the complex problem(s) underneath that is mired in the matrix of the economic, political and social. Morozov's indictment is labelled as technological solutionism, a pervasive ideology in Silicon Valley that "given the right code, algorithms and robots, technology can solve all of mankind's problems. Efforts at making life "frictionless" and trouble-free" roots from seeing the world and its problems and solutions through the limiting technological frame (Morozov, 2013). This kind of ideological blindness "uncoupled from any radical project of social transformation" does not fix the problem, and is yet another function of mass distraction.

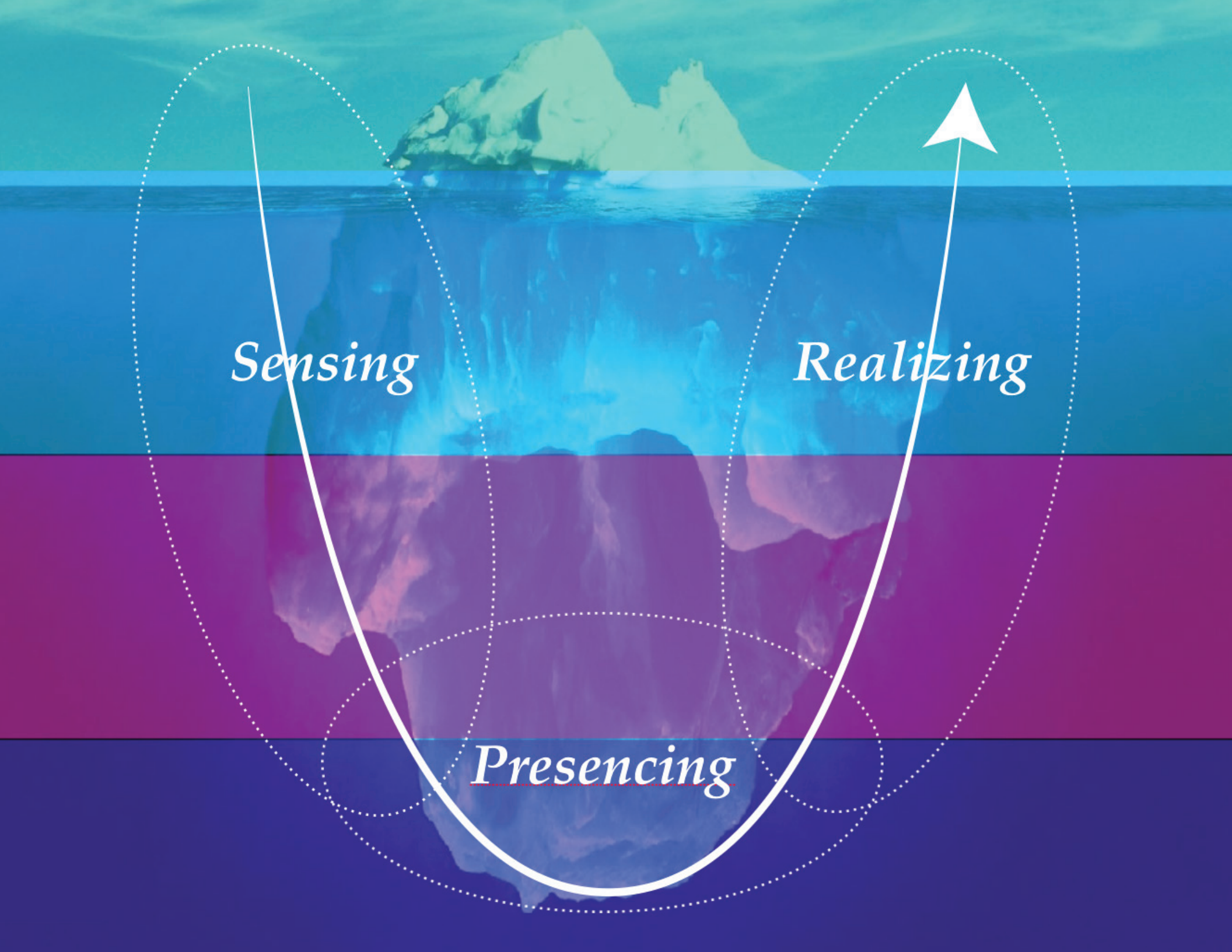
Acknowledging the Complicity of the Designer

Critical discussion addressing addiction to technology necessitates an ethical and normative journey. My research engages in a rich debate already established within the discourse, where many have been arguing for the consideration of ethics in design and tech. Respected and influential voices within the technology industry (e.g. Anil Dash, Kate Crawford, David Heinemeir Hansson, Tristan Harris, Dana Boyd, Maciej Cegłowski) have been raising awareness about the need for more critical and humane design considerations. Other writers, academics and theorists (e.g. Sherry Turkle, Astra Taylor, Evgeny Morozov, Douglas Rushkoff, Jaron Lanier, Nicolas Carr, Tim Wu) have also thrust the debate into mainstream attention by writing popular books on the topic. In the area of design, while there are design academics (e.g. Tony Fry, Cameron Tonkinwise) and design practitioners (e.g. Cennydd Bowles, Thomas Wendt) who advocate for ethics, the discipline overall has meditated less explicitly on the designer's responsibility in technological systems. However, these individuals are in the minority, and are swimming upstream against the mainstream currents of unapologetic technological disruption. While it is clear that ethics is acknowledged in the design and technology zeitgeist, it remains as a fringe conversation.

This research extends the discourse by exploring how the increasing power of design has not been sufficiently coupled with the responsibility. In order to problematize the role of the "neutral designer", I propose that designers are complicit in addiction. They limit themselves to the shallows of the aesthetic, or choose to defer responsibility to the companies and systems that they operate within. I believe that designers are ideologically addicted to the promises of human centred design (HCD) as a magic bullet solution for "good" design. I argue that when popular methods of design are divorced from critical ethical investigation and the consideration of long-term consequences, this is a form of **unconsciousness by limitation**. These designers are unconsciously involved in the co-production of harm as long as they limit the responsibility of their design practice. Without critical ethical reflection, designers remain in collusion with a design practice that can be deceitful and manipulative, ultimately designing for unconscious, addicted and passive users. Many designers are also well aware of the power of their designs, but shift the burden of responsibility instead. I examine this **unconsciousness by worldview** where designers choose the anesthetizing comfort of believing that the systems which they occupy will ultimately fix the problems, whether it is their company that purports to "do no harm", or the neoliberal choice that pushes the responsibility to the user.

In the following chapters, we will move down the Theory U journey to understand the deeper and invisible drivers of the design of addiction, and how designers can consciously break down their own ideological limitations to ethically design for empowering technologies.




Sensing
Realizing
Presencing

Chapter 3: Research Framework

"Psychologically and politically we would much rather assume that the cause of a problem is "out there," rather than "in here." It's almost irresistible to blame something or someone else, to shift responsibility away from ourselves, and to look for the control knob, the product, the pill, the technical fix that will make a problem go away."

— Donella Meadows, ***Thinking in Systems***

This research framework is informed by Otto Scharmer's **Theory U** with the intention of bringing the reader through a consciousness-building journey of self-knowledge through observation, reflection and potential action. (Scharmer & Kaufer, 2013) This section describes how Theory U is used in synthesis with Sohail Inayatullah's **Casual Layered Analysis (CLA)** in order to explore as a multi-dimensional framework for narratively working through the personal change journey (Inayatullah, 1998).

Otto Scharmer's Theory U is a change management theory proposing any successful of change needs to come from the interior change of the individual, as the "quality of the results that we create in any kind of social system is a function of the quality of awareness, attention, or consciousness that the participants in the system operate from." Scharmer's approach runs counter to the dominant behavioural models of change, seeing the need for a deeper shift in consciousness in order to embody ethics. The Theory U moves from sensing – which requires one to pause, observe and listen, to presencing, where one retreats and reflects to allow knowledge to emerge, and then realizing, where one is then able to take action informed by the reflective journey. (Scharmer & Kaufer, 2013)

The intended audience of this research is the design community, and I ask readers to pause and consider how designers might be "addicted" to certain mental models of the world that make it difficult to design alternative futures. The research moves down the Causal Layered Analysis (CLA) to "allow the spaces of reality to loosen and the new possibilities, ideas, and structures, to emerge." (Inayatullah, 1998). Through the deep dive into the individual and collective myths and imaginaries that surface symptoms of addiction, the goal is to make space for a heightened state of attention. For the philosopher Martin Heidegger, presencing or anwesen is to endure in the unconcealment of "things in themselves" and let answers naturally unfold. Rather than challenging forth a solution, the process of presencing is to cast the human out of the comfort of habitual ground, and opens up the space in which new futures can emerge.

The other reason I use Scharmer's "Theory U" is that it mirrors the methods and models of addiction therapy, where the addict must start from acknowledgement, "I have a problem," to contemplation, "Where does this problem come from?" to action and maintenance, "how do a maintain my awareness and support others?" Both theories require the rigorous commitment of the individual to access the root cause of the problem in order to escape the destructive addiction cycle. Similarly, I'm interested in how the designer is able to discover and destabilize the root causes of their assumptions as an ethical journey.

Research Methods

My introduction to the research methodology are presented in alignment with the Theory U process of Sensing (observation and listening), Presencing (retreat and reflect), and Realizing (acting in an instant).

Sensing: Observation and Listening:

Literature Review

The normative research journey employs critical hermeneutics (Roberge, 2011) as a deconstructive and interpretive method and philosophy to understand addiction, design and technology discourse in relation to its underlying ideological and historical contexts. An in-depth literature review was conducted to explore various disciplines including design, technology, addiction theory, philosophies of existentialism and phenomenology, and psychology and sociology related to capitalism. I also examined the role of design in technology through Science and Technology Studies (STS), and the philosophy of technology to gain a more situated historical understanding of western society's relationship with technology.

Observation of discourse taking place through social media platforms such as Twitter and Medium, as well as through mainstream news, was useful to keep a contemporaneous understanding of how the conversation around the intersection of technology and design is developing.

Expert Interviews

I spoke with relevant experts, included designers working in technology, as well as addiction experts. Two of the interview subjects were selected on the basis of subject matter expertise in addiction and design ethics.

Lisa Pont, Addiction therapist, CAMH
Thomas Wendt, Independent Design Consultant

Three of the interview subjects are practicing designers and practitioners working in technology, who were selected to get a more in-depth understanding of the ethical and professionals constraints of a designer working in tech at various levels. I have kept the names of these designers anonymous in order to protect their identities.

Senior Design Lead, IBM
Product Manager, Twitter
Co-Founder, UX Design Consultancy

Presencing: Retreat and Reflect

Systems Analysis

As an effort to understand the "wicked problem" of addiction to technology without undermining its complexity, the systems lens inspired by Donella Meadows was taken in order to understand the problem. As Meadows eloquently described of systems problems, I frame addiction as an "undesirable behaviour characteristic of the systems structures that produce them." (Meadows, 2008) Addressing the root problem of addiction occurs if "we reclaim our intuition, stop casting blame, see the system as the source of its own problems, and find the courage and wisdom to restructure it." (Meadows, 2008)

A systems analysis was used to be able to better understand the motivations of the contemporary "tech industry" with a focus on Silicon Valley and the design communities that have been influenced by its philosophy. The causal dynamics of ideological systems were explored through the development of systems diagrams and archetypes. In particularly, the "Fixes that Fail" and the "Shifting the Burden" archetypes to understand addiction was useful illustration of the behaviour of complex systems.

Philosophical Inquiry

This design research emphasizes the need to access philosophy, history and cultural theory as the groundwork for exploring and interpreting questions that are existential, ethical and spiritual in

nature. In a contemporary society where time is a scarce resource, investigations around abstract ideas of meaning and value, truth and authenticity, freedom and choice, can seem naïve, whimsical or unproductive. However, foundational assumptions that define the architecture of our day-to-day lives are taken for granted and ossify over time, falling invisibly into the background and even confused as the natural state of the world. We become dependent on, even addicted to, the certainty and reliability of these models of the world, forgetting that these "maps are not the territory" (Korzybski). The redesign of the myths of the human condition can be accessed by truly radical designers - designers who design from the "root". Through the destabilizing process of philosophical investigation, designers question what is taken granted in order to make space for the new ways of being.

Foresight Exploration:
The research journey uses Sohail Inayatullah's Causal Layered Analysis (CLA) as the framework for the literature review (See Figure 4). Inayatullah's goal with the CLA is to "open up the present and past to create alternative futures" through a vertical dive into the worldviews and myths that drive the surface phenomena. Using the metaphor of the mostly submerged iceberg, the surface layer is what we can see and point to "above the water". This is also the "the litany" in the CLA, an exploration of trends and topics of mainstream conversation. Underneath are the the "social causes" are the economic, cultural, political and historical factors that drive these trends. Beneath that are the discourses and worldviews that legitimizes and supports the structure. At the very bottom at the unconscious myths and metaphors and myths that are assumed and foundational to our worldviews.

The goal of the CLA is not to predict the future but to create the space to open up other discourses and possible futures. Inayatullah borrows from post-structuralism as a critical research method to critique dominant ideologies and critique the hegemony of a particular future. Therefore, to "disturb the present power relations through making problematic our

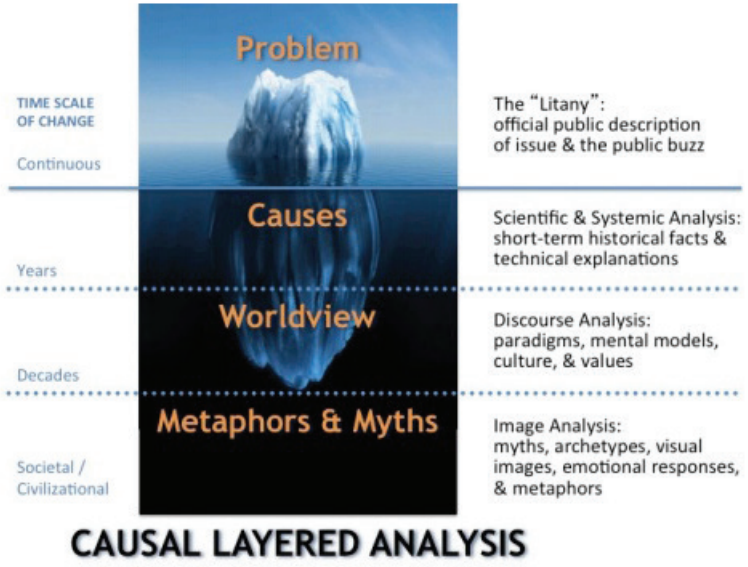


Figure 4: **Causal Layered Analysis (Sourced from: https://libarynth.org/futurist_fieldguide/causal_layered_analysis)**

categories and evoking other places or scenarios of the future" is to make the present be less rigid.

Realizing: Acting in an instant:

The Ethical Imagining of the Future
Once one goes deep down and expose the underlying myths and metaphors through the casual layered, it is important to go back up to the world above the water in order to act. When coming back up the other side of the Theory U, the prototyping of the future requires open exploration of ideas that may seem counterintuitive and disruptive of the status quo. Inspired by Carl DiSalvo's approach to adversarial design, I examine how designers are able to act in ways that disrupt the current social imaginary to be able to make space for alternative and more positive futures.

CHAPTER 3
Complicit Designers

Complicit Designers

Unconscious Designers do harm

In March 2016, a group of designers created a competition called "Building the Border Wall" (see figure 5), noting that whether or not the Great Wall of Trump is a good idea, "it is an idea that is gaining some traction among a significant amount of Americas" and therefore "it should be considered as a serious architectural question" (Third Mind Foundation, 2017). While the group itself may be calling for a more ambiguous critical approach to expanding the idea of the border wall, the story that the competition tells is a normalising premise that wall is inevitable, and designers should still do what they do best – contribute to the aesthetic form of the wall. Not long after, Dezeen, a popular design magazine, launched an unofficial competition to redesign the Brexit passport that "presents a positive vision of the post-Brexit UK to the world." In both of these scenarios, participating designers are asked to retreat to a politically neutral position and commit to what they do best: making something more beautiful and visually appealing, while implicitly assuming that there is no possibility of challenging the presumed status quo beneath.

What kind of harm does this type of normalising design practice engender? In Adam Curtis' film Hypernormalisation, the director describes the normalising functions of the modern world where no one can imagine any alternative to the status quo. In the face of paralyzing intolerance of uncertainty and unpredictability, Curtis describes the collective creation of an unreal world that preserves itself through a tight feedback loop where people cling onto familiar and comforting details in order to blind themselves to the total inauthenticity of that world. The retreat passive into fantasy is made frictionless and accessible through technology and its dissociative mediation of an abundance of news and information, only filtered by what we want to see. Philosopher John Ralston Saul describes society's addiction to the world

Figure 5: Cover page of Building a Border Wall Design Competition (Sourced from: http://buildingtheborderwall.com/)

of illusions, and subsequent shedding of all civic and ethical responsibility, as the unconscious civilization. (Saul, 2005)

At the same time, the digital age has transformed the ways in and by which designers have power. In his Design in Tech 2016 report, design leader John Maeda notes that designers who work in technology have to design for billions of people at scale, and there is high demand for designers who can design for culture and complex systems. With design-led organizations like Apple and Airbnb succeeding in their ability to understand the emotional and rational needs of their consumers in the development of new products and services, tech companies are hiring designers in roles that include UX design, product design, interaction design, design strategy and design research. Corporations like Accenture, Capital One and Deloitte have scooped up design consultancies, and tech organizations like IBM has made enormous investments into developing design capability. The successful modern-day designer must specialize in understanding the human relationship to technology and master the discourses and practices of the technoscape.

Maeda is not wrong, but this is also not new. Designers have long been creating tools that afford ecologies of possibility around them. However, with the rise of the tech sector, designers have entered a strange position when it comes to responsibility. On one hand, the power of design is reinforced with the widespread popularity of design thinking incorporated into business jargon, and the whispers of a new breed of "design-led" organizations where the designer finally occupies a seat at the strategic decision-making table. On the other hand, designers also struggle with the ownership of complicity in problematic and harmful outcomes – for example, in the co-production of addictive behaviours, systemic oppression, and divisive politics.

There is a paradox in the concepts of choice, autonomy and freedom in neoliberal capitalism– when convenient, individuals are expected to own the full responsibility of the choices they make as an expression of the freedom that must be preserved. On the other hand, people are able to use their roles and their jobs, their subjecthood to a company, in order to absolve responsibility for their choices and actions. For example, Natasha Schüll sees the addictive interaction as the point of asymmetric collusion between the user and the designer – while the designer has created all of the conditions for the addiction, the onus is still on the user to makes that choice to play (Schüll, 2012). The neoliberal expectation is that the individual who makes the choice to gamble assumes the full burden of responsibility of the harmful outcomes. This isn't surprising in a landscape guided by free market ethics, where the value of supply naturally matches demand by Adam Smith's invisible hand. However, no one knows the needs and desires of the "demand" side better than the empathic human-centred designer. Who is better equipped to stoke the flames of desire, creating sophisticated advertising campaigns to appeal to the affective side of the consumer? Long before the scientific study of cognitive biases flipped the assumption of the rational economic man on its head, designers have appealed to the impact of emotional and automatic thinking. Designers found a contentious but well-paid home in advertising, creating stunning recruitment campaigns for the army and memorable advertisements for cigarette companies and gambling organizations. As design educator Victor Papanek memorably said, "there are no professions more harmful than industrial design", and the phoniest profession of all is advertising (Papanek, 1984).

As designers move into the crucial role of user advocacy in the development of new technologies, how might they be complicit in the problematic outcomes of technological interactions such as addiction? In the first chapter, we learned about how the design of technologies have capitalized on the psychological and emotional vulnerabilities of users to optimize for growth metrics and increase time spent on device. So how might the designer's role in the gambling sector be taken as a "pocket of a future" in the present, a world that takes capitalism to its logical extreme by using dopamine and desire as a way to capitalize on the marginalized and the vulnerable? In Natasha Schüll's interviews with the designers of these slot machines, the designers are smart people, they recognize the harmful consequences of the machines on its users – in fact, they design for exactly that response. However, these designers are also able to justify their actions by claiming to "make what people want", responding only to the demands on the market.

I believe that designers are not intentionally "evil", but they succumb to an unconscious addiction loop similar to their user – where the need for mastery, control, and certainty within their corporate environments reinforces the desire to escape personal responsibility. This chapter explores how designers can ignore or limit their responsibility through "unconsciousness by limitation", where designers focus so blindly on the craft and methods of their practice that they look past the harm that they might inflict. I believe that designers remain limit their consciousness of the harmful consequences through lack of criticality with the methods that they use.

Technicians of Desire

"The problem is, how do we know what we desire? There is nothing spontaneous, nothing natural, about human desires. Our desires are artificial. We have to be taught to desire."
– Slavoj Žižek

Foucault popularized the concept of the Panopticon in book Discipline and Punish (1975), where the architecture of constant surveillance polices the internal behaviour of those under watch. However, we might argue that the "technologies of punishment" have become "**technologies of desire**" as the mechanism of power in the digital economy. Consumers are being watched and data is captured through our devices and ambient technologies not as an explicit force of control but a service to promote desirability and consumption. In the hyper-real world of consumer capitalism, designers simulate choice by manufacturing desirable choice menus, and consumers simulate their agency by "voting with their dollars".

For a long time, designers have been involved in the dark arts of persuasion, bringing delight to their audiences through the power of beauty, style and function. In the hyper-accelerated digital economy, designers have become the "technicians of desire" (Foucault, 1972), capturing attention and creating value through the cultivation of desire as constant iterative process. The predominant "design thinking" philosophy emphasizes empathy as a way to get into the minds of users and intimately understand their needs and desires. This was in large part due to California design firm IDEO's success in the popularization of human-centred design as fundamental contributor to the "sweet spot" of innovation, elevating the role of the designer as expert on "desirability" to the same level as business executives seeking "viability" and technology leaders seeking "feasibility" (See Figure 6). This has led to a cheerful brand of design-led tech start-ups in pursuit of "making something people want" to ensure, profitability and success.

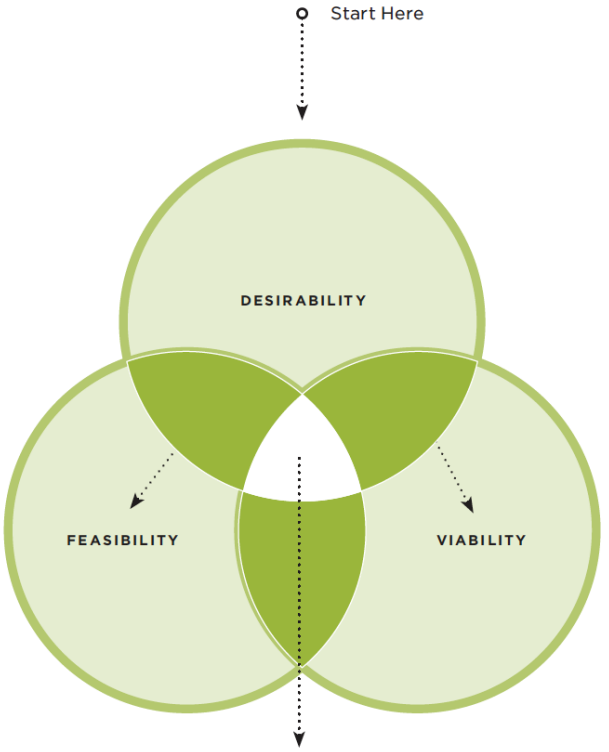


Figure 6. **The Three Lens of Human Centred Design. Reprinted from *Human Centred Design Toolkit* by IDEO. 2015.**

However, it is important to surface the nuanced complexity of what gets labelled and defined as "desire" within the design and business discourse. We've learned in the contradictory case of addiction that desire is not as simple as "what people want"; for example, an addict might desire the drug, and want to quit taking dug at the same time. Philosopher Harry Frankfurt outlines the tension between an action-determining volition called the **first-order desire** (e.g. I want to take the drug) and the higher-order volition called the **second-order desire** (e.g. I want to quit this drug permanently). Frankfurt sees the enactment of free will as the ability for one's higher-order volition to overcome the first order desire in order to consciously determine one's

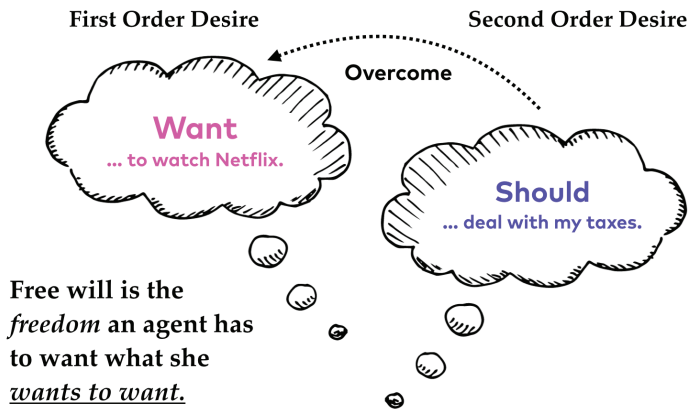


Figure 7. **Harry Frankfurt's First-Order Desires and Second Order Desires.**

actions: a free agent is able to control and master one's desires rather than be a slave to them (Frankfurt, 1999) (See Figure 7). The aspirational expression of what one "wants to want" is to choose to become the person you want to be, and to actualize this through the very act of choosing.

As we explore the differences between the two kinds of desires, we take the first step in seeing how a shallow conception of "desirability" in design can be used to manipulate, deceive and exploit users.

Human-Centred Design Principles for Unconsciousness

Designing for frictionless, seamless, invisible interaction has become the reigning design philosophy of the digital age – better yet if you can design for **delight.** Designing for delight is about empathizing with the user experience enough to know where to add details that can make a user smile. This might include humorous ironic copywriting in a boring newsletter or the addition of a cute cartoon mascot as part of the service experience. The goals of designing for delight is to make a user experience as pleasurable as possible, and to create a positive emotional response to the company providing the service or product.

Another reigning design principle of the digital age is **universality**: by ensuring that a platform is as broadly and generically desirable as possible, it makes the business objective of scale and growth much more achievable. The ideal is to have a platform act like the neutral airport, where all people regardless of cultural background or taste are able to co-live within the same space. The scalable success of universal design is best exemplified by Facebook where according to journalist Alexis Madrigal's interviews with numerous Facebook designers, its "overarching design goal is to make that box as invisible as possible, so that your content is the thing that's most important. (Madrigal, 2013)" By making the seams and constructed-ness of Facebook invisible, the company aspires to shapes and contain user behaviour without people noticing it. The normative association of "good" design with "invisibility" has become foundational to the practice of UX designers. As respected design leader Donald Norman notes: "Good designs fit our needs so well that the design is invisible, serving us without drawing attention to itself. Bad design, on the other hand, screams out its inadequacies, making itself very noticeable. (Norman, 2002)"

However, the "bad design" that Norman notes has its functions.

Philosopher Martin Heidegger investigated the phenomenology of objects as it appears to our conscious selves (Heidegger, 1927). Most of the time, our tools fall invisibly into the background and enable us to act in the world and achieve goals without the need for conscious reflection. For example, we don't think too hard when we pick up our phones to check our emails, nor do we need to theorize how our microwave works when we need to heat up our dinner. It is when we encounter the friction of something breaking or failing that these things become "present-at-hand", meaning that we pay attention to it and how it exists in the world. It is only when my internet service provider goes down that I become incredibly frustrated by the degree to which I rely on and need the internet. It is the discomfort of "bad design" that promotes more effortful, arduous thinking, a state that can be compared to the concept of "thinking slow" popularized by psychologist Daniel Kahneman.

Daniel Kahneman is the only non-economist who has been awarded the Nobel Prize in Economics, having transformed the ways that people understand human judgement and decision-making today. Kahneman described two modes of thinking called "System 1" and "System 2" in his best-selling book *Thinking Fast and Slow*. "Thinking fast" is Kahneman's emotional, intuitive and associative "system 1" of thinking. Fast thinking is pleasurable and impulsive, relying on unconscious biases and heuristics as shortcuts to make thinking as efficient and and easy as possible. On the other hand, "system two" is the critical, effortful and logical mode of slow thinking. Slow thinking is employed when people have to work through complex problems through deliberation and reasoning (Kahneman, 2011).

Another way of understanding fast and slow thinking is through existential philosopher Jean Paul Sartre's two modes of consciousness: pre-reflective consciousness and reflective consciousness (Sartre, 1943). Similar to Kahneman's perspective of fast thinking, pre-reflective consciousness is automatic and dominant. It is also passive; it is the the phenomenological awareness we have of ourselves without any reflection. Reflective consciousness is the consciousness of the self as a thinking, acting and intentional agents in the world. For ease of reference, I will refer to pre-reflective consciousness as "**unconsciousness"** and reflective consciousness as "**consciousness**".

The dominant usability philosophy for digital technologies is to promote the ease and pleasure of unconsciousness. The unconsciousness of fast thinking is extremely desirable for the user because it is smooth, easy and delightful; it is accomplished by having no friction at all between a person's whims and their environment. As Steve Krug described his book *Don't Make Me Think*, designing friction out of the user experience means you design out the need for effort. Like Schüll's slot machines, digital experiences become manufactured certainties where the tight cybernetic feedback loop between what people desire and what they get is as close to perfect as possible. We demand reality to meet our needs at a click of a button, even if it means that the only reality that becomes available to us is the one that is can be accessible at the click of that button.

The ability for designers to optimize for "fast thinking" of the user has been incredibly effective in drawing users to platforms with the promises of convenience and control. Conveniently, "fast thinking" signals are much easier to translate to metrics and observe for technological companies. It is more straightforward and less expensive to measure the success of a impulsive click on an article, than understand the long-term psychological and emotional impact of the article on the reader. Therefore, the metrics representing "success" veer towards the numbers that promote "fast thinking", and the designers then beholden to those metrics continue to optimize for it. In the end, the ideal model of user for for the success of the platform is the passive user, who no longer needs be critical, reflective, or even ask for anything. The interface thinks and desires for the user.

The Asymmetric Power Relationship of Design

The relationship between the designer and user sees a hugely disproportionate power dynamic where the "slow thinking" designer has access to the data, calculation, and statistics to "hijack the psychological vulnerabilities" (Harris, 2016) and script the behaviour of users to keep them online, whereas the "fast thinking" users chooses the desirable interaction in the unconscious pursuit of pleasure. Natasha Schüll calls this the "asymmetrical collusion" where the machine designer optimizes for maximum profitability, and user plays for the zone state, ultimately ending when the user loses by depleting all their funds (Schüll, 2012).

Philosophy Michel Foucault considers **power** as agency over the agency of others, exercised with intention. Designed artifacts and services are inscribed with power to shape human behaviour and agency. However, there is a powerful fiction at play where the neutrality of design is preserved as long as the choice is on the table for the rational economic agent to opt in or out of the interaction. Designers and technologists have learned from Kahneman's work on systematic cognitive biases that users don't always rationally know what they want; people are not computational agents who act rationally for the optimal expected outcomes, but make decisions through bounded rationality (Simon, 1996). Equipped with this power, designers have the skillset and knowledge to manipulate for behaviour change by appealing to people's unconscious needs and desires. In a controlled environment under constant surveillance, where the architecture is designed to hook a person's attention and guide behaviour, the house always wins.

Normalizing the Design of Unconscious Behaviour

Design's ability to guide and influence behaviour (IDEO, 2010) is made more powerful through the surveillance and tracking abilities of digital platforms. Previously, there was a lengthy feedback loop between the design, manufacture, and eventual consumer use of products and services, and designers had to speculate through rigorous market research about how their designs might be received. Today, the immediate feedback of digital technologies allows designers to constantly iterate for success. Designers can observe, guide and "nudge" users by tracking representative metrics about their behaviour. In Silicon Valley, the use of persuasive and behavioural design has been hugely successful in allowing designers to achieve the holy grail of "conversion", which occurs when the design leads directly to the desired user behaviour such as a purchase, click or page view.

Consumer technology companies rely on the the growth of user attention as the main indicator of success; the more it is able to increase the amount of time spent, the more valuable the company. Nir Eyal, a behavioural design consultant to Silicon Valley startups and author of the book Hooked: How to Build Habit-Forming Products (2014), teaches companies about how to use "hook" mechanics to make the offerings of tech companies more irresistible through consumer psychology. Eyal wants to help companies learn how to link their technological solutions to user habits, which he defines as "behaviour done with little or no conscious thought". An easy villain to target, Eyal admits that while concerns around user addiction to technology are valid, engaging technologies and their designers should not be blamed for the outcome of addiction, since "that's not necessarily a problem, that's progress." Eyal's ideas stem from B.J Fogg, an experimental psychologist and the founder of the Persuasive Technology Lab at Stanford University. Fogg has also been a crucial influencer in Silicon Valley, whose social technology of manipulation has been sold to help designers "to walk in

and collect gold" through the emulation of Instagram and his Facebook addictive success (Helft, 2011). The Fogg Behaviour Model reveals that in order persuade someone to perform a specific behaviour, the individual has to be (1) be sufficiently motivated, (2) have the ability to perform the behavior, and (3) be triggered to perform the behavior. The model promises designers and technologists to create "persuasive technology that is fundamentally about learning to automate behaviour change (Fogg, 2009)

The success of behavioural design has translated to the public policy sphere and renamed "nudge" theory, popularized by Richard Thaler and Cass Sunstein as a form of libertarian paternalism (Thaler & Sunstein, 2009). In this case, the careful balance between libertarianism (the preservation of freedom and choice) and paternalism (the ability to get people to do what is best for them) is the indicator of success in policy change. However, a digital economy that sees the preservation of freedom in choice-making is contradicted by the fact that the designers work off an impoverished understanding of choice, seeing it as a behavioural response that can be controlled by the conditions of that interaction. One of the major critics of behaviourism is education expert Alfie Kohn, who critiques the practice of manipulating people with rewards and believes that behaviour modification preyed on the vulnerable (Kohn, 1993). This is partly the reason why internet, gaming, television addictions see the most damaging effects in vulnerable youth, who have yet to develop a sense of identity, and internet scams and fraud target and prey on the elderly. It is much easier to socially condition those who are disempowered, infantilized, bored and alienated.

Engineering of Consent: Design's Relationship with Manipulation

The disciplines of marketing, design and behaviourism have long been in collusion around the purpose of manipulation and social control. The philosophy behind designing for persuasion comes from a long history of "hidden persuaders" who have specialized in the power of communication, marketing. and design to manipulate and trigger the affective states of people in order to sell (advertising) or influence public opinion (propaganda). The tactics of persuasion and its relationship to consumerism had been presciently described in The Hidden Persuaders (1965) by Vance Packard, who revealed the psychological tricks of the advertising industry. Similarly to Eyal and Fogg, Packard realized that by identifying and placating to the core needs of people (for Packard, they were: emotional security, reassurance of worth, ego gratification, creative outlets, love objects, sense of power, roots, and immortality), advertisers and publicists succeeded in creating and controlling people's desires (Packard, 2007).

Fogg, Eyal and other behavioural designers frequently cite the work of psychologists John B. Watson and B.F Skinner, who was also the creator of the previously mentioned Skinner box. Watson wanted to abandon the inner world of "consciousness" and believed in studying the outward behavioural manifestations of people instead. Skinner followed suit and argued in his book Beyond Freedom and Dignity that the belief and struggle for freedom and dignity hinders the possibilities of scientific behavioural modification and the ability to "design a culture" that could lead to a better society (Skinner, 2002). Skinner's ideas around "cultural engineering" and the technology of human behaviour stems from a cynical philosophy that sees free will as an illusion. Skinner was also explicit about the need for technocratic rule and behavioural control, believing that society must "delegate control of the population as a whole to specialists" in order to prevent humanity from destroying itself. Skinner and Watson's impact on behaviourist theory has since had an immense impact on education and policy, being structured around a mechanistic understanding of behaviour and the dismissal of subjective mental states. The powerful relationship between the ideologies of behaviourism, consumerism is explicit and co-dependent in shaping the idea of the person as a passive, conditionable, and managed consumer.

In a similar vein, Edward Bernays, nephew of Sigmund Freud, was also significant influencer in the field of public relations and propaganda. Referred to as the "father of public relations", Bernays pioneered the use of psychology, story-telling and mythologizing in order to control what he saw as the inherently irrational and desire-driven masses. Influenced by his uncle's psychoanalytical theories, Bernays believed that manipulation was necessary in society in order to curb dangerous libidinal energies of people. More importantly, he reconciled manipulation with moral righteousness in his belief that "the conscious and intelligent manipulation of the organized habits and opinions of the masses is an important element in democratic society." (Bernays, 1928) Today, Bernay's methods of branding and advertising have been largely decoupled from his philosophy, but they continue to influence how businesses steer the desires and needs of their consumers.

Dr. Jaak Panksepp describes the "Galileo-type battle" against the generations of scholars who rely on the Skinnerarian notion that mentality is irrelevant in the control of behaviour. As long mental states and agency are seen as illusions in the domination of behaviourism, the concept of free choice is impoverished as mere impulse and unconsciously conditioned response. Furthermore, the misanthropic perspective of the human condition as animalistic and irrational has led to a moralistic belief system where people must be controlled and manipulated for their own good. As Nir Eyal says, technological companies are masters of "habit forming products" who can effect "moral persuasion" and "ethical manipulation" (Eyal, 2014). The new opiate of the masses has become desire-driven pleasure-seeking consumerism

Preserving the illusion of choice

Design's long acknowledged relationship with the forces of manipulation also takes as its cornerstone the design of consumer choice, representative of Enlightenment values of freedom and autonomy. Neoliberal choice is important for the continuation of business as usual for two reasons: first, consumers need to feel satisfied with the feeling of autonomy and control; secondly, industry is able to shift the burden of harm and responsibility to that very choice. The market is "free" is long as people have an abundance of choices to spend their dollars on. The moment of asymmetric collusion is in the transaction, where the choice of the individual shifts the full burden of responsibility, including any consequences associated with the product or service, to the consumer.

A recent NYT article details Uber's use of psychological tricks and behavioural science in order to have the upper hand over their users – who are both the drivers and customers (Scheiber, 2017). An Uber spokesman argued that while they "show drivers areas of high demand or incentivize them to drive… any driver can stop work literally at the tap of a button — the decision whether or not to drive is 100 percent theirs." Even if the technology platform is fundamentally designed to coerce behaviour, the user can still choose to get off. Our ability to walk away from a product is sold as agency in the free society. The power of the designer is conveniently shirked off as minor in relation to the power of consumer choice– it doesn't seem to matter if the entire architecture of our environment is designed to elicit addictive behaviour.

We have learned that the psychological drive for autonomy does not mean that people act as reason dictates. Novelist Fyodor Dostoyevski, who was compulsive gambler himself, wrote that "one may choose what is contrary to one's own interests, and sometimes one positively ought… What man wants is simply independent choice, whatever that independence may cost and

wherever it may lead." (Dostoyevsky, 2009) As demonstrated in the case of the gambling addicts, individuals crave the sense of personal control over their choice-making. Schüll observed how the machine gamblers will choose the comfort of "perfect contingency" even if it means that it is ultimately harmful for them; the feeling is: I can at least feel a sense of control as long as I keeping pressing this button. Maté describes the dilemma of freedom for an addicted individual, where "a person driven largely by conscious forces and automatic brain mechanisms is only poorly able to exercise any meaningful freedom of choice" (Maté, 2010). An digital environment that is designed for unconscious behaviour change and persuasion creates the illusion of choice. For designers, the ability to defer to "what people want" is the magical offloading of ethical responsibility within the neoliberal market, where the customer is always right and Adam Smith's "invisible hand" simply guides corporations to respond to consumer demands. This is something writer Tom Slee calls the ideology of "MarketThink" the combination of choice and the market as a mechanism for solving all problems (Slee, 2006). However, the well-recognized ability to create desires – the bread and butter of design - is counter to this "conventional wisdom" that markets are governed by demand. It matches economist John Galbraith's concept of revised sequence, where businesses exercise control over consumers through the production of needs and desires through advertising and the influence of commercial culture. The market forces in Capitalism are invisible and unconscious, shaping desire but denying responsibility where addiction occurs.

"What Users Want": Deferring to Desirability

"We must shift America from a needs- to a desires-culture. People must be trained to desire, to want new things, even before the old have been entirely consumed. [...] Man's desires must overshadow his needs."
— Paul Mazur, Wall Street banker, Lehman Brothers

In Buddhism, desire (Taṇhā), also meaning "thirst, desire, longing, greed, and craving." (Peter Harvey, 2012) is the principle cause of suffering, pain and dissatisfaction (Dukkha). Taṇhā reflects a mental state of craving where the greater the craving, the more the frustration from the world being innately unsatisfactory.

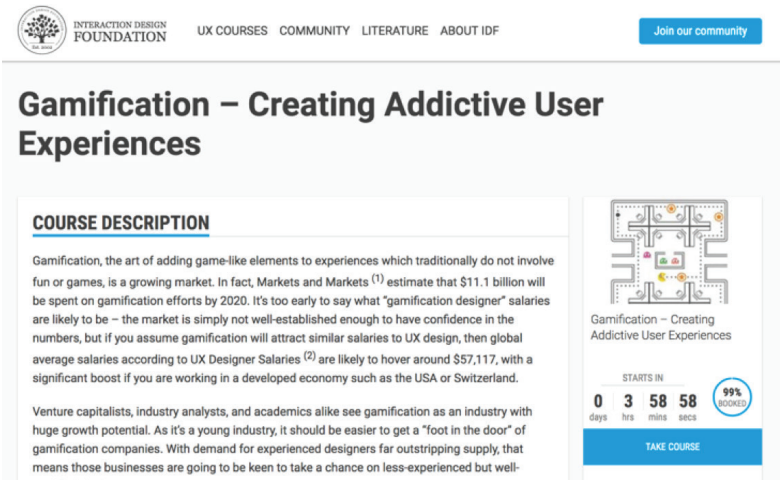
How did designers come to own the domain of desire? As far as designers have been marketed as "desire creators" within the innovation economy, we have pointed to this mysterious designerly knack for identifying and empathizing with users needs, including the latent "unspoken" needs that users themselves are unaware of. Somehow, designers have moved from a history of obsessive craftsmanship and material aesthetic to the ability to be able to interpret people's psychological states in order to ensure that their needs are met.

Insofar as desire is the responsibility of designers, they also need to understand the complex nuances of desire as it relates to the people they design for. The object of attention is the object of desire. There is not greater signal of success to designers than to be able to create things that people choose to use; if desirability is the goal of design, then the evidence of its value is revealed in its consumption. This means that, harm and ethics aside, addiction can be considered quite flattering for designers. As designer Simone Rebaudengo critically notes in his blog about addicted products: "in a way, designing an addiction is the hidden and unspoken holy grail of every designer. We want people to love

our products, to feel a need of them, to never let them go."

Of course, the blanket of "desirability" is also great for business. As designers train more and get better at knowing how to make their stuff desirable, they become infinitely more hirable for companies. Harvard University offers classes like "Design for Desirability" with projects that might include "taking a product from the recently shuttered Skymall catalogue and improve its desirability" (McKenzie, 2015). The professor Atringer says: "I want everyone in this class to go from "this is cool" to everyone being able to sell." Sometimes euphemisms are used, such a "habit" for "addiction" and "engaging" rather than "addictive". However, online courses on using gamification to create "addictive user experiences" (See Figure 8) and high attendance rates at the Habit Summit organized by Nir Eyal on "how to morally manipulate your users" are just some examples of how addiction has become normalized as the standard business practice of the digital growth economy.

Figure 8. **Course offered by Interaction Design Foundation titled: Gamification - Creating Addictive User Experiences (Sourced from: https://www.interaction-design.org/courses/gamification-creating-addictive-user-experience)**



The art of desire-finding and desire-creation is also mired in distrust of the person the designer is designing for. One of the slot machine designers in Schüll's book says "people tell you what the want you produce it and it doesn't work... They don't really know what they want." Through the power of ethnography – the casino as one giant focus group – designers can go out into the field, observe gamblers, sit down with an addict, and chat with them and learn about how to addict them even more. This dispels any myths that the power of empathy or design research is an inherently ethical practice. Empathy has been critiqued as the "ultimate neutrality" (Bulajewski, 2014) and "faux ethics" (Wendt, 2017). Empathy helps us how to see the world as others see it, but absent of ethics, it is not going to tell us what to do with those perspectives.

Instead, the great power of design and empathy is used for the subtle steering of desires as a form of profit generation and social control. It is impossible to question the end game of addiction without destabilizing the desire and growth as the productive forces of neoliberal Capitalism. In his book *Capitalism and Desire*, McGowan argues that capitalism dominates by mimicking the psychological structures of desire within the commodities that it sells us, and profiting from the sense of incomplete satisfaction (McGowan, 2016). Following Jacques Lacan's theory of desire, desire comes out of loss and signals a psychological lack of something that we never had and does not exist. If desire is inextricably tied to lack, and consumption services only to reinforce the lack rather than eliminate it, people become addicted to the "promise" that capitalism might satisfy this lack. Each social media "like" arrives with a fleeting frisson of pleasure that distracts from this lack; however, the pleasure is momentary, and once again, people try to produce the next hit. Žižek writes that "desire's raison is not to realize its goal, to find full satisfaction, but to reproduce itself as desire. (Žižek, 1997)" By operating off a model of scarcity and "not enough", desire is never satisfied; instead it is always a desire for more.

Talking to Designers: Shifting the Burden of Harm

"Designers are so far down in the food chain, that they're just responding. This is just about short term results for the business."
— IBM Design Lead

While some designers limit their responsibility by what I call "unconsciousness-by-limitation", others are well-aware of the ethical consequences of their work. For example, the designers that I interviewed were all thoughtful, intelligent, and ethically conscious about their work in technology. However, all of them acknowledged that their design work may be enabling problematic visions of the future and/or the status quo. The IBM Design Lead is passionate about creating designs that are better for humanity, but also realizes that "designers are so far down in the food chain, that they're just responding. This is just about short term results for the business." She believes her work is important, but it is still "reinforcing the same economic paradigm". Another designer who founded her own successful UX company talked about how she leads her organization as ethically as possible, but is also confronted with the fact that good intentions can't always lead to execution: "we'd love to do it that way but we can't." She too acknowledges that she doesn't want to design "tech for tech's sake" but that "we live in a society that dictates around making a living."

Designers don't exist in an isolated vacuum, but work as constrained actors in networks of market incentives and capitalist systems. The designers I spoke with recognize that it is deeply difficult for a designer to advocate for mindfully slowing down operations in order to question consequences in an environment unapologetically optimized for speed and growth. The IBM designer notes: "this is the addiction – most designers just want to make cool shit… You get hooked on making." She realizes that as long as designers ignore complex systems and ignore criticality, they limit their potential: "If you think about cool shit, you don't think about agency. You're just stuck in the interface." The majority of the designers shift the burden; when they see people with problems, they design interactions that distract users from the real problem. However, they also use the act of design to distract themselves from their own complicity and responsibility (See Figure 9).

This tendency reminded me of a game developer in Schüll's research who described talking to users as a difficult process because "you'd talk to some woman on welfare who would play your game for twenty-three hours. It would make some of us question why we were doing it; we'd get down on the whole thing. But we were really good at rationalizing it" (Schüll, 2012). The designer needed to be protected from the humanity of his users; as long as they were numbers to be optimized for, the degree of harm inflicted by the addictive interaction gets to be separated from the job. The ability for designers to rationalize the harm of their designs is part of the dehumanizing characteristics of measurement and data. "You defer ethics to data," the Twitter Product Manager I interviewed said, noting that engineers and designers in Silicon Valley will just focus on the technology because it is "not [their] job to think about ethics."

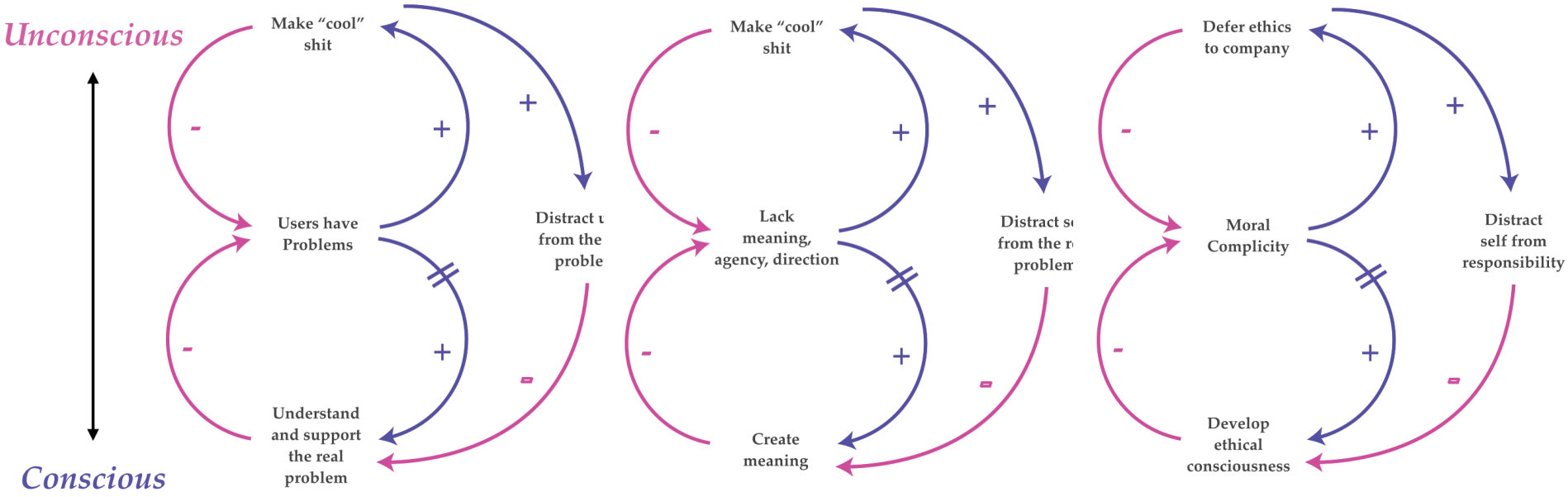
So I propose that designers are also addicted to a certain picture of the world, unconsciously adopting pathological dependencies on the inevitability of the status quo and unable to see alternative futures outside of it. As Schüll explains in her book, "designers themselves often describe a "turning off" of knowledge while playing the very machines they have designed." The delusions happening in technology design are multiple fold; friction-free design principles of delight, seamlessness and invisibility reinforce business objectives prioritizing speed, growth, scale. So designers also "switch off" in the similar way that the users of technology do - by relying on the comforting certainty of business objectives and culture of the organization. Organizations provide the annihilating comfort of freedom from responsibility, where a designer can succeed at meeting a pre-established set of

success metrics that don't need to be questioned.

As long as the asymmetric and oppressive power relationships that presently exist in the world remain unacknowledged or unconfessed, they stay invisible and unquestioned. By making discourse around ethics, freedom, agency and autonomy a visible priority within the discourse of design, designers don't let the companies they work for off the hook. As we will see in the next section, technology companies will shirk responsibility for issues of abuse or discrimination through claims of platform neutrality (e.g. Uber, Twitter), or by announcing that the ethical dilemmas of fake news and filter bubbles are too challenging or complex to address (e.g. Facebook).

The typical start to an addiction recovery process is that one has to admit their addiction as a first step. The hope is that through confession of harm – specifically the designer's complicity in addiction and unconsciousness in this chapter– design as a field can begin to develop an ethical consciousness. The confession of truth, if it comes freely from the individual has an effect of changing the confessor through the act of admission. In the next stage of the research, we move down the Otto Scharmer's Theory U and the Causal Layered Analysis to be able to explore a series of ideological confessions. We adopt the sensibility of what designer Thomas Wendt calls the "radical designer": one who designs from the root.

Figure 9. **Shifting the Burden archetypes: how designers shift the burden of responsibility through design.**



CHAPTER 4
The Ideological Shaping of Design and Technology

The Ideological Shaping of Design and Technology

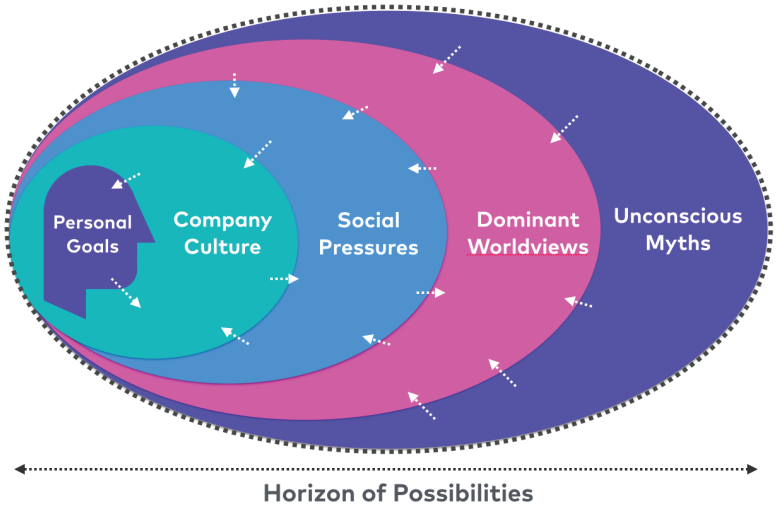
Insofar as the power of the designer is debated within the design discourse, it is pivotal to recognize that the intentionality of the designer is not enacted within a vacuum. Designers are ecological actors who are situated and constrained within existing social worlds (See figure 10). On a deeper level, designers must understand and question the underlying ideologies that inform – both consciously and unconsciously – contemporary design practice. In this chapter, I take a brief intermission to understand the nuances of design intentionality and to explore the predominant ideology of Techno-Utopianism that has been deeply influential in the development of contemporary design practice. Specifically, I outline an interpretation of how the epicentre of western technological process – Silicon Valley – has shaped and been shaped by design.

Victor Margolin in the Politics of the Artificial urges for the positioning of history, theory and criticism as central, rather than peripheral, to design. In order for designers to assume responsibility, the contexts in which they are are situated need to be considered in its its history, location, and constraints.

The power of design needs to be "characterized by humility rather than hubris, aspiring not to massive change or discontinuous innovation but to modest interventions within ongoing, continually shifting and unfolding, landscapes of transformation." (Suchman, 2011)

It doesn't help that the language of design has been diffused into a complicated debate about who "designs" and who can be officially called a "Capital-D Designer". The popularization of design thinking has created a watered-down definition of the designer without sufficient recognition of power differences in various design roles, where a CEO of Airbnb is as much a designer as a UX designer on a product team. This research distinguishes between "proximate design" and "design by society". Proximate designers are professionally recognized in the areas such as product, industrial, graphics, urban design and architecture, and are closest to the details of design. Design by society has less simple boundaries that delineate who

Figure 10. **Designers are constrained actors within ecological systems.**



is a designer, seeing society as an actor in the collaborative determination of the cultural values that get reproduced into the products of design (Feng & Feenberg, 2008).

The understanding of the role of the designer and the power of their designed artifacts is informed by Science and Technology Studies (STS) literature. Stemming from the Kuhnian belief that new discoveries in science, and scientific revolutions are products of scientist's socially conditioned investigations rather than objective representatives of nature (Kuhn, 1970), the STS perspective examines how other structures - social, political, cultural, environmental, - determines the shaping of design and technology. For example, Social Construction of Technology (SCOT) scholars reject technological determinism to take the social constructivist approach; they believe that technological innovation is socially determined (Pinch & Bijker, 1984). Designers therefor need to understand the social ideological contexts within which it's taken for granted how technological innovations have shaped our worlds of being.

However, I believe that SCOT scholars also over-determine the influence and power of the designer in shaping the outcomes of the technology. Designers work under the constraints and incentives established through more complex social arrangements of their organizations and surrounding social ecologies. Furthermore, the designer cannot anticipate or foresee with certainty the kinds of futures and consequences their design artifacts will ripple through world. However, can designers be the "cautious Prometheus" in designing carefully and thoughtfully for a world that they cannot necessarily control? (Latour, 2008) As we consider the role and responsibility of designers in the development of new technologies and interactions, I want to preface by understanding:

- **What is the current role of the designer in technological innovation?**
- **How does the history of design and technology impact its practice today?**
- **What is the designer's agency and intentionality in affecting change within the current system?**

I borrow a useful STS framework that considers design and intentionality through three perspectives (Feng, Feenberg, 2008):

Strong intentionality: Designers are Powerful

Those believing in the strong intentionality of designers see people steering technological development, and includes proponents of design science such as Don Norman and Buckminster Fuller. These design theorists see a strong link between better designers and better design, and are proponents of a better world through intelligent and intentional redesign. However, this can lead to a kind of intellectual hubris that is explored in the next section titled "A Brief Recent History of Design and the Computational Ideology". The challenge to this "deistic" approach to design, and whether the designer is able to intentionally design into technology its purposes and uses has been called the "Designer Fallacy" (Ihde, 2008).

Weak intentionality: Designers are Constrained

Other scholars see designers as constrained by economic, political and social factors. These designers are subject to other deterministic drivers both technological and social, such as Marxist historical materialism. In contrast to design theorists and academics, practising designers working in companies and industry often feel this way. There is a pervasive sense in which even ethically minded designers feel like they must operate within constraints of capitalism.

Questioning Intentionality: Designers and Society-at-Large

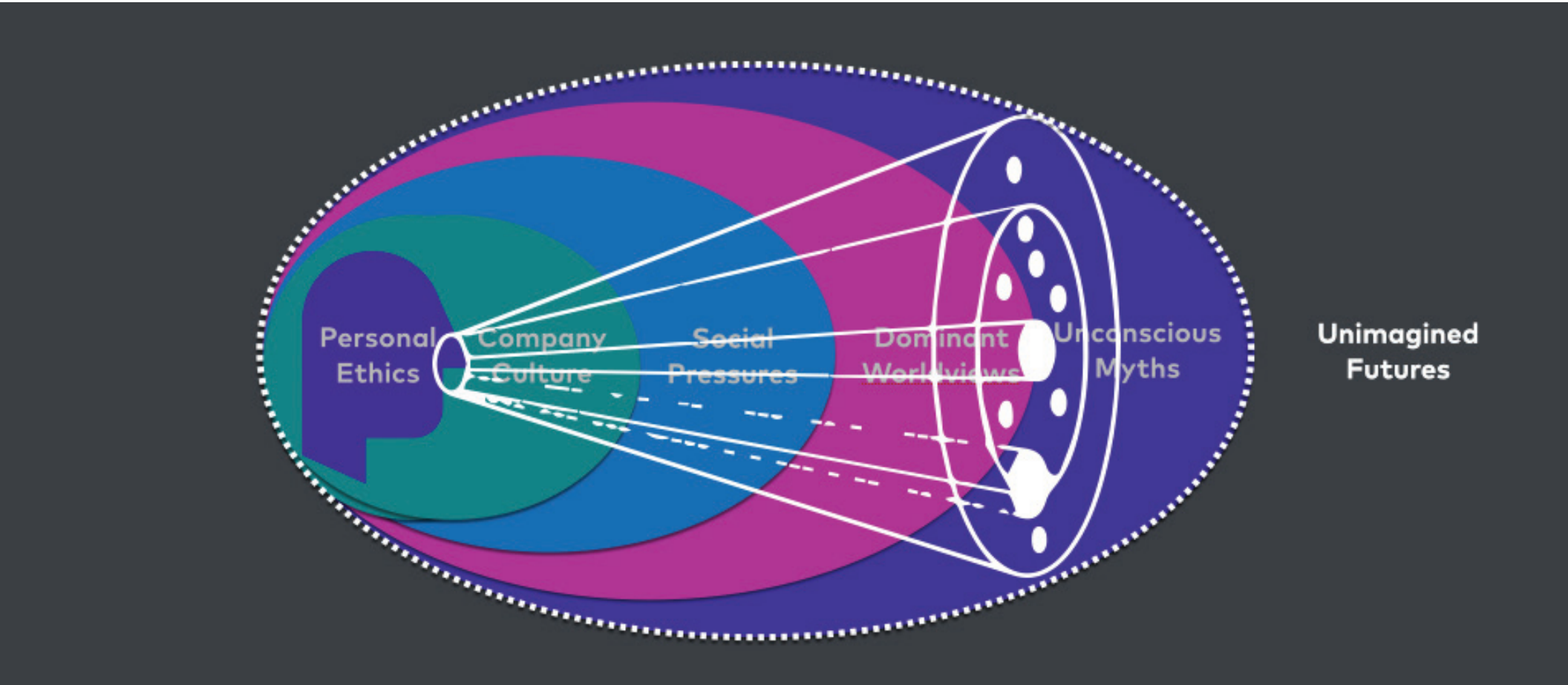
Some theorists question whether designer agency is possible at all: how do designers escape the values and assumptions of "closed world" ideologies to propose an "alternative" design? (See Figure 11) While I agree that designers operate in, are even "addicted to" discursive ideologies that limit the set of values and desirable futures to its boundaries, I believe that there are

destabilizing points in time – the "space between stories" – where designers can find the cracks and fissures to radically design from the root.

The relational power and agency of a designer determines the level to which that designer can actuate their intentionality through their designs. For example, an proximal designer, such as UX or design researcher in a large tech company, might have a relatively constrained position in terms of enacting top-down cultural change. However, the proximal designer can also adopt tactics to resist and oppose the status quo, which can be defensive and opportunistic in nature. These adversarial tactics are described by French theorist Michel de Certeau as defensive and opportunistic, which can be used by designers and people to resist and navigate the "strategies" of institutionalized power. I believe that these tactics can also be used as a networked strategy to find the cracks and fissures within the system and expand them to make space for alternative possibilities.

As designers act in the world and manifest new technologies, they have to be conscious of the environments and histories that they exist and resist in. Next, we will look at how modern day design practice has been shaped by Silicon Valley and the computational ideology.

Figure 11. **Designs are ideologically limited in their imaginings of possible futures**



A Brief Recent History of Design and the Computational Ideology

Silicon Valley has become the reigning symbol of concentrated power, information and wealth. Marc Andreeson confidently stated in 2011 that "software is eating the world", describing a dominant worldview of technological innovation where software relentlessly disrupts old ossified industries to make them better, faster and cheaper. The influence of design in "transforming Silicon Valley into the most powerful engine of innovation in the world" is traced and celebrated by books like Barry Shwartz's *Make it New: A History of Silicon Valley Design* (2015). The unflagging belief and optimism in technological innovation "is embedded within a broader cultural imaginary that posits a world that is always lagging, always in need to being brought up to date through the intercessions of those trained to shape it: a world, in sum, in need of design." (Suchman, 2011).

Every contemporary design paper appears to start with Herbert Simon's oft-quoted definition of design: "everyone designs who devises courses of action aimed at changing existing situations into preferred ones." (Simon, 1996) Increasingly, seeing the world through the lens of design is to see it as something to be conquered, ordered, and purposefully produced into a set of desired outcomes. In a secular age where Nietzsche has proclaimed God as dead, the role of great intelligent designer can be occupied by design leaders with grand visions of the world. As designers and technologists create a world that gets more and more "intelligently designed" with promises of smart cities, self-driving cars and other automated services, it is critical to ask: **are we designing technology or is technology designing us?**

To track the interrelated lineage behind contemporary design and computing technology is to understand how people are currently situated — I would suggest an increasingly passive relationship to technology — in spite of the "good" intentions of those who helped shape it. The great irony of the current state of user disenfranchisement and the centralization of power is the fact that the internet's early beginnings, particularly around human-computer interaction, were centered around noble intentions – personal computing was a countercultural symbol of empowered freedom and distributed power.

Design and technology have a long intertwined relationship, but a distinct strain has come out of the 60s where "design science" (Buckminster Fuller) and the "sciences of the artificial" (Herbert Simon) have developed alongside the adjacent fields of artificial intelligence and cybernetics. This new discipline of design celebrated the power of human intentionality to determine the set of operations that people can carry out to make sense of and act in a complex and uncertain world. This was a distinctly different strain from aesthetic design, where proximate designers dealt more with the craft and improvement of everyday objects (Findeli, 1994). In the essay "How Cybernetics connects computing, counterculture and design" by Hugh Dubberly and Paul Pangaro, the designers examine how the kinds of networking and connective capabilities of the World Wide Web and the empowerment afforded by personal computers impacted systems-thinking and cybernetics, which connected disciplines to study the value of collaboration and the rise of design thinking (Dubberly & Pangaro, 2015).

Fred Turner's book *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* is a detailed historical exploration of the optimism and digital utopianism of designers and technologists in the 60s and 70s. Shaped by tech-design innovators like Stewart Brand, cyberculture and counterculture blended together to see the promises of a new world order through information. During this time, cybernetics was considered radical counterculture, blending disciplines together as an approach to understanding complex systems. The field was defined by Nobert Weiner as "the scientific study of control and communication in the animal and the machine". Cybernetics sees systems through the framework of information in order to understand the causal feedbacks loops,

functions and goals that emerge out of systems, and to reprogram (or redesign) them to be more efficient and effective.

Influenced by thinkers like Marshall McLuhan and Buckminster Fuller, the utopian dream was also to be able to use technology as a tool for social transformation and link all of humanity into McLuhan's "global village", living together on Fuller's "Spaceship Earth". Innovations in the World Wide Web of electronic signals carried a "mystical charge" for the work (Turner, 2010). The social order of the technocracy had the tantalizing vision of a technologically enabled world where counterculture innovators could reject and transcend the broken and corrupt society of global politics for the possibility of individual and collective transformation. In a book called *Ideas and Integrities*, Fuller grandly described the "comprehensive designer" as one who would stand outside of specialism to process information, observe the development of technologies and transform them into "tools for human happiness" (Fuller, 2009). Through access to information accessed by the technocracy, this comprehensive designer will be capable of understanding the "whole picture", recognizing the system's need for balance and acting as the "harvester of the potentials of the realm". The field of design was mobilized by the alluring fantasy and subsequent hubris of the powerful, comprehensive designer. Influential thinker and Long Now Foundation founder Stewart Brand was captivated by this vision and published the *Whole Earth Catalog*, which promised "intimate, personal power… of the individual to conduct his[sic] own education, find his own inspiration, shape his [sic] own environment, and share his[sic] adventure with whoever is interested" (Brand, 1968).

The notion of the material world as an information system was foundational to the utopian promise of decentralization, personalization, and ultimately the emancipation from the messy corrupt areas of politics. By the 1980s, the personal computer became the symbol of freedom from corporate control and ownership, and the opportunity for a revolution in human society and consciousness. The open, distributed network of personal computing had the optimistic potential for people to equally share in the co-design of the future. Douglas Engelbart, known as the forefather of human-computer interaction was interested how we might democratize the ability to use technology for social good. In 1984, the Apple Macintosh computer was announced as a tool that can disrupt power structures and achieve personal intellectual freedom. As displayed by the anti-corporate brand of Apple Inc., and other tech companies, the computing revolution would transform the world into a "peer-to-peer, collaborative society, interlinked by invisible currents of energy and information" (Turner, 2010). This also influenced the development of artificial intelligence and the understanding of the human mind. Seymore Papert, co-director of the MIT Artificial Intelligence Laboratory, wrote "Mindstorms: Children, Computers, and Powerful ideas" (1993) where he proposed the computer as a "teaching machine" that would lead to a revolution in learning, impacting "the way people learn and think."

Learnings from systems and cybernetics in the technology industry inspired a new form of value creation, transitioning from the development of products to technological platforms, as we see with the companies Amazon, Facebook and Google today. Technology companies have become the cybernetic brokers of data and information, inheriting the utopian visions of the counter-counter cyberneticists in their ambition to transform the world for the better. Similarly, the ideological influence of computing technology and cybernetics shaped the design into the practice of design thinking and computational thinking. In the field of design, according to Pangaro and Dubberly, design influencers saw design as a cybernetic process to construe design patterns (Christopher Alexander) and to map "wicked problems" (Horst Rittel). Information theory had become critically important to the field of software design, interaction design and experience design, where as cybernetician Gordon Pask noted: "human interaction is a major source of difficulties which can only be overcome by cybernetic thinking." (Dubberly & Pangaro, 2015)

More recently, the technology's powerful influence has led to a new category of design labeled **computational design** (See Figure 12) by John Maeda, who also argues that the most successful designers will be those who code. As a subset of "computational thinking", the new brand of computational designers is the hybrid designer-engineer-computer scientist, with an emphasis on tackling complex design problems with a distinctly technological lens (Stinson, 2017). The goal is to be able to process information and "think algorithmically", allowing one to "encode" intuition and creativity as a logical process.
The role of cybernetics and information theory as universal sciences has set the stage for our obsession with the promises of networked technologies, and entangled the fields of design and technology. If the entire world can be collected into data, the cybernetic dream follows the dream of Jorge Luis Borges' emperor to create a rationally-ordered informational map that can cover the entirety of the territory. This hyperreal map will be designed to meet the demand for frictionless order and pleasurable certitude, making invisible the messiness and chaos of the territory beneath until over time, people can forget there was any kind of "real" reality altogether.

Figure 12. **Three Kinds of Design. Reprinted from *Design in Tech 2016* by John Maeda. 2016.**

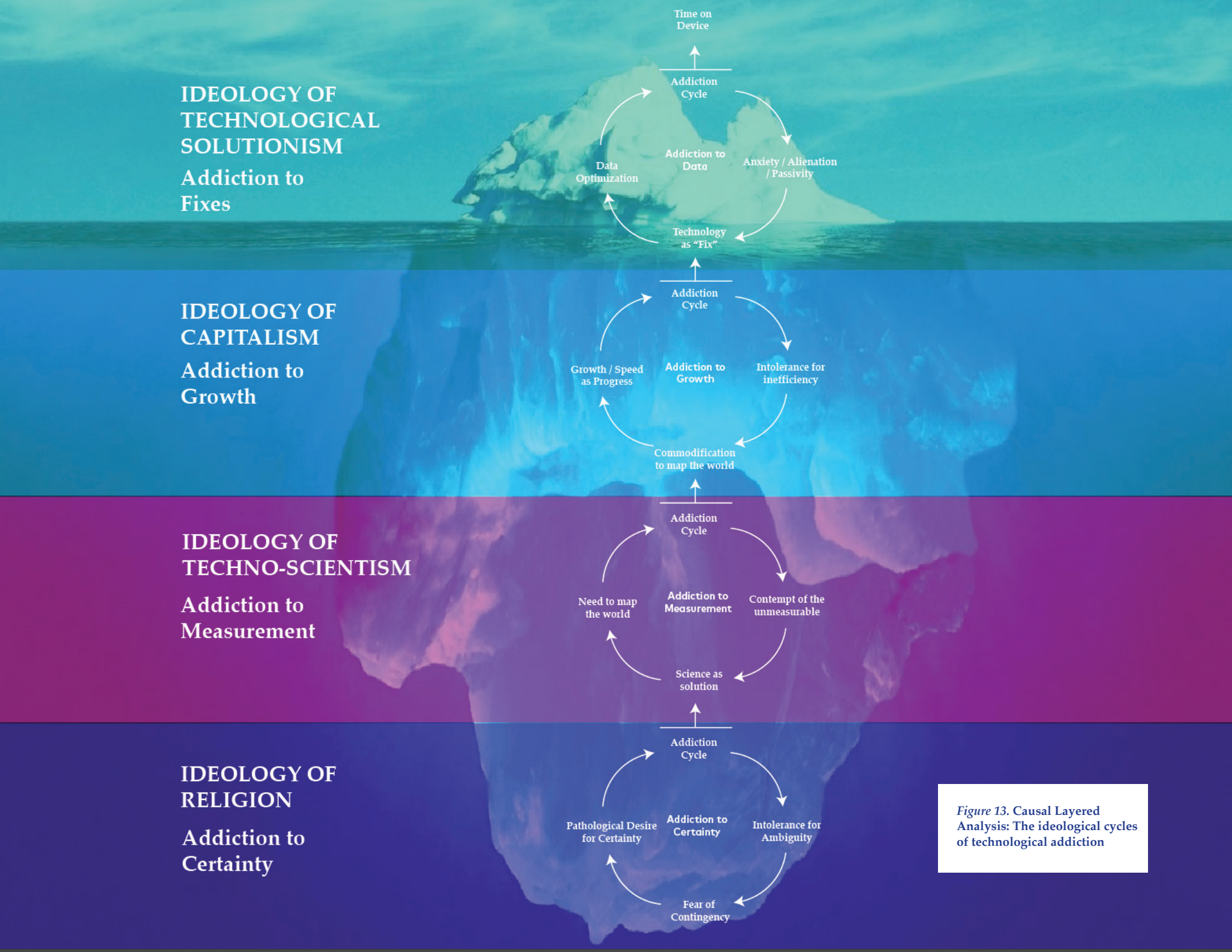


Figure 13. **Causal Layered Analysis: The ideological cycles of technological addiction**

Chapter 5: Unconscious Design by Worldview

"Which is ideology? Which not? You shall know them by their assertion of truth, their contempt for considered reflection, and their fear of debate."
— John Ralston Saul

We now move down Theory U to explore the kinds of ideological addictions that keep the design and technology industries – with the focal point of Silicon Valley – affixed to very limited visions of the future.

Ideological Barriers to Design Imagination

The lines between what is real and what is virtual, what is true and what is false, are blurring in the contemporary "post-truth" age However, these lines have always been ambiguous. Artist Elliot Edge provocatively suggests that "human civilization has always been a virtual reality", where culture, religion, and even the ideas of nation states are mapped through the stories that we tell ourselves about the world (Edge, 2016). These stories are all shared forms of "world-building" that set the conditions of possibility, guiding how people act in the world and shaping their values, needs and desires. Physical places such as Disneyland or Starbucks are immersive consumerist hyper-realities with specific habits, customs and reality-generating effects that we encounter simply through entering the space. This is to say that similar to Foucault's epistemes, or Charles Taylor's social imaginaries, virtual realities can be compared to the kinds of unquestioned structures and systems of knowledge that produce our horizons of possibility.

The ideology of technological utopianism and its unquestioned march of progress, order and innovation is also rooted in myths and stories that we tell about the world. Capitalism is just one of the virtual realities that mythologizes scarcity, meritocracy and desire. Those who can spin mythological narratives have the power to set the conversation, and shape the futures made available to the public. It can not be ignored that historically it has been white male European colonizers who have designed the narratives and histories that we take for granted, silencing alternative voices. These narratives, with their power dynamics, prejudices and biases, also ossify into resilient systems that attempt to maintain its integrity through "adaptive, dynamic, goal-seeking, self-preserving, and sometimes evolutionary behaviour." (Meadows, 2008)

In his 1995 Massey lecture The Unconscious Civilization, Canadian philosopher John Ralston Saul bemoaned the desire to retreat into a virtual world of illusions where people can be safely disconnected from the responsibilities of reality. He asserts that the western civilization is addicted to ideology and utopianism, resulting from a "desperate need to believe that the solving of a single problem will solve all of our problems." (Saul, 2005) This kind of ideological addiction will be explored next as the practice of unconsciousness by worldview. For designers and users alike, there is comfort to be found in the worldview that technology will solve all our problems and meet all of our desires and needs. In many ways, this has been true — scientist Steven Pinker is not wrong that technology and science have succeeded in improving the material conditions and abundance of the world by lowering

extreme poverty, infant mortality, and eliminating fatal diseases. However, we are also in a time of great social, psychological and existential instability, where wealth inequality is on the rise (Piketty, 2014), mental illness is a mounting concern, and the contingency and chaos of the modern world on the edge of ecological disaster feels paralyzing and imminent.

Neuroscientist Marc Lewis believes in the role of imagination in the addiction recovery process, where the ability to imagine a different and better future helps the addict break the pathological cycle (Lewis, 2015). By going through the rigorous process of understanding the core philosophies from which stem the every-day practices of contemporary life, designers are able to destabilize the underlying systems, myths and metaphors and recognize the real opportunities to re-design. Rather than being mired in the "real", Sartre describes ontological freedom as the ability to imagine and recognize the potential of unrealized possibilities. It is through this possibility that designers can access the capability to create new preferable realities, and empower those that they design for to create their own. Instead of seeking comfort in certainties in order escape the nausea of the post-truth deconstructed world, designers can empower people to see the opportunity for emancipation in this "space between stories" (Eisenstein, 2013). Indeed, as the designers of our own realities, there are opportunities for new realities to transcend. How might these realities be redesigned to be more meaningful, beautiful, and compassionate to human dignity?

De-growth activist Charles Eisenstein believes that "We live today at a moment of transition between worlds." (Eisenstein, 2013) We are recognizing that our external institutions, from our companies to laws to economics systems are scripted with the invisible ideologies, belief systems and mythologies that can be questioned. Eisenstein believes that in this space between stories, there can be room for optimism and the ushering of more beautiful futures. On the other hand, historian Yuval Noah Harari warns that the dominant ideology will be what he calls "Dataclism", a religious faith in the power of algorithms and technology to fix the problems of the world and advance humankind (Harari, 2016). As an effort to escape the tunnel vision of a technologically-determined future, I move down the Causal Layered Analysis to understand and destabilize the underlying ideologies that limit our visions of the future.

Moving down the Causal Layered Analysis

Using Sohail Inayatullah's Causal Layered Analysis (CLA) as the framework, the next section explores deeper social, worldview and mythic ideologies impacting the designer and the design of addiction (See Figure 13). With the goal to "open up the present and past to create alternative futures", I will be taking each layer of the CLA to understand deeper "addictions" that surface the pathological desire for designers and society to depend on technology as the only the viable solution. The goal of the going down the CLA is to expand the horizon of possibility for designers to imagine and be intentional towards ethical alternative futures. Design philosophies are influenced by underlying systems and ideologies that reinforce or undermine those practices. This research takes the term **ideology** to describe the bounded system of beliefs and myths that are embedded into discourses and institutions without conscious examination or critical thinking. I introduce these ideologies not as concrete phenomena, but as stories that I want to foreground in the discussion around design and ethics.

It is the **fundamentalism** of these ideologies I characterize as a form of addiction, whereby a pathological attachment to a specific set of values results in ultimately harmful destructive returns. These totalizing meta-narratives have become fixed, representing an unquestioned system of beliefs, goals and expectations collected into a normative vison of the world. Furthermore, these ideologies dehumanize the individual by seeing people as simply a "conduit" within a self-reinforcing system focussed on the pursuit of the goals and objectives of that system.

First, we look at the **Addiction to Fixes** within the **Ideology of Technology Solutionism**. This section explores society's addiction to technological solutions as the unquestioned answer to all of the world's problems. Neil Postman's concept of the "technopoly" is a society that defers culture to the moral authority of technology. This results in the subsequent disempowerment of people as they choose voluntary servitude to the promises of technology.

Next, I examine the **Addiction to Growth** within the ideology of **Neoliberal Capitalism**. This section will explore how neoliberal capitalism and corporatism collided to alienate people from a personal intrinsic sense of value, in blind pursuit of the continual growth and efficiency of the system.

I then investigate our **Addiction to Measurement** within the **Ideology of Techno-Scientism**, and the impact of the Scientific and Industrial Revolutions as a legitimizing structure for techno-capitalism. I believe that this creates a kind of detachmenr and blindness to the parts of the human experience that cannot be measured and therefore tolerated.

At the very bottom of the U, I propose that the modern western world has an **Addiction to Certainty** that is at its core deeply irrational and ideologically similar to religion – it is an escape from the contingencies of human freedom by deferring to the fundamentalist authoritarianism of "facts." By moving down to presencing, I ask how we might move from "matters of fact" to "matters of concern" (Latour, 2004) as an effort to embrace the complexity and contingency of the human condition.

Unconsciousness by Solutionism: Addiction to the Technological Fix

In the litany of of the Causal Layered Analysis, I explore the technoscape of Silicon Valley to interpret the addiction to the "technological fix". Like a drug, this "fix" is the short-term solution that is presented as the only solution, ultimately limiting the possibilities of alternative futures. This fix has also led to the pathological belief in the deterministic progress of artificial intelligence and the reinforcement of a culture where people ultimately defer their consciousness to the greater machine intelligence.

Silicon Valley's "Fix"

The myth of Silicon Valley is a comforting story where technology will be the messianic "fix" to the world's complex problems. This has been coined "technological solutionism" by Evgeny Morozov, an intellectual pathology that sees technology solving all problems, provided that whatever is defined as a "problem" in the first place proves solvable through technology. To the technological hammer, all problems look like nails. These do-good behemoth platforms have claimed the moral mission of making the world a better place, promising as per Google's famous maxim to "do no evil." As a public, we can count on internet-powered solutions like Facebook's global community to fix politics, end racism and terrorism or stave off concerns the impending doom of climate change by relying on Elon Musk's electric cars and the promise of new planet to transition to.

Even referring to a "technology industry" is problematically vague when software has become part of the table stakes (Dash 2016). The global technology companies like Facebook, Twitter, Google and Uber march forward with a "do first, apologize later" rule-breaking attitude, scoffing at any regulatory barriers that attempt to slow their relentless creative disruption of ossified traditional business through the promises of better, as well as "cheaper, faster, and more convenient". However, the nerdy-underdog countercultural charm of the technological elite has worn thin as power concentrates and centralizes with these platform monopolies. This power has been coupled with hubris on the parts of its leaders for social transformation: Mark Zuckerberg earnestly believes that Facebook will fix all of the world's global problems.

The technological utopianism and merciless disruption of Silicon Valley was named the Californian Ideology (Barbrook and Cameron 1996) referring to a collision of "right-wing neo-liberalism, counter-culture radicalism and technological determinism". The writers of the Californian Ideology described the "rise of the virtual class", a high-tech intellectual class of cognitive scientists, engineers, computer scientists and developers who believe in the teleological direction of technology ultimately shaping the future of human and post-human civilization for the better. Today, WIRED founder Kevin Kelly's ideas of "what technology wants" and the mainstream popularization of the Ray Kurzweil's notion of the Singularity (the exponential acceleration of machine super-intelligence) are common, although a less explicitly ideological strain sees the permission-less "disruption" of the world by tech companies as part of the inevitable march of technological progress.

The obsession with "technology as savior" reflects the domination of technological innovation not just on the business economy, but on the horizon of possibilities by which people see and shape the future of the world. The alluring promise of artificial super-intelligence and machine learning has followed with massive investments, operating on the speculative principle that the machines will eventually be better and smarter than people and solve the world's problems. This is provided that technological companies are able to access massive datasets mined from the surveillance of user behaviour and input in order to transform them into wisdom of the algorithm. Technological Solutionism seems a natural extension of what has been called the "cybernetic

hypothesis" (Tiqqun 2010), which calls for the realms of the biological, physical, and social to be reduced to information, which can then be the design material from which the the world can be reprogrammed and reordered by machines. Considering how far we have come to trust and rely on the algorithms of Amazon or Netflix to predict our needs and preferences, it is not a farfetched prediction that we may come to believe that machines will know us better than we know ourselves.

The inevitability of artificial super-intelligence has cast such a threatening shadow that it has attracted the fear and interest of wealthy and powerful tech leaders such as Bill Gates, Stephen Hawking, Peter Thiel and Elon Musk, who are concerned about the mitigation of machine super-intelligence as an existential risk to humanity. This has led to the creation and development of of well-funded research bodies such as OpenAI, the Machine Intelligence Research Institute and the Future of Humanity Institute, and also influenced the "effective altruists" movement of technologists and scientists (who seek to solve "world's biggest problems" through reason) to shift their priority from fighting global poverty to AI (Matthews 2015). If the prevailing assumption is that the super-intelligence of machines cannot be stopped, then the ultimate goal will be to equip those who will be able to steward the "preferred order of arrival" (Bostrom 2014) with the resources to slow down the development of dangerous and harmful technologies and ensure that it is under the control of humanity.

I believe that the belief in an imminent super-intelligence is an addicting pathology in itself, which also spells out the end of human agency. Theories of artificial intelligence are rooted in a myth that has been presupposed as fact –as long as we assume the computational model of the mind, then a natural conclusion is that humans can be completely simulated by machines and will eventually be surpassed by them. Many of these technologists believe so fundamentally in the idea of mind as machine that they believe in the Terminator or Matrix scenario where machine super-intelligence may lead to the ultimate loss of control for humanity. Computer scientist and philosopher Jaron Lanier calls this the "myth of AI", a massive misdirection comparable to religion where "people have been disempowered precisely to serve the needs of some deity" and society must contribute to the fortunes of an elite class who is the priesthood for that deity (Lanier 2014). In assuming the inevitability of machine super-intelligence, people – designer and users alike – limit their agency to imagine any alternative narratives.

Joseph Weizenbaum, an MIT computer scientist who is considered a father of artificial intelligence, had similar concerns when he created ELIZA, a language processing program. Weizenbaum was surprised at how naturally people trusted and anthropomorphized ELIZA and attributed intimate human-like feelings to it. Even through ELIZA was originally designed to "parody" the psychotherapist-patient conversation, Weizenbaum was disappointed to find that his academic colleagues and the public sensationalized the program's ability to be equivalent to the skills of professional psychologists and therapists. He wrote about this in his book Computing Power and Human Reason (1976) to understand why people were so eager to give up their autonomy and rely on the false certainty of the autonomous machine.

For Weizenbaum, the seduction of the computing machine is its alluring promise of control. He compared designers of technology — computer programmers and engineers — to the compulsive gambler. He describes how the "compulsive programmer", no longer limited to the material world with its physical constraints, gets addicted to the feeling of omnipotence as the "the creator of the universes of which he alone is the lawgiver."(Weizenbaum 1976) His crucial point was that these programmers felt like they could reduce "universes of virtually unlimited complexity" into computer programs and systems that "compliantly obey their laws and vividly display their obedient behaviour."(Weizenbaum 1976) They depend on the the tight cybernetic feedback of control and stability that comes from the computer program, bearing striking resemblance to Schüll's compulsive slot machine

gamblers. Both the computer programmer and the machine gambler have "no purpose" and "can barely tolerate being away from the machine" (Weizenbaum 1976); they rely on the machine to avoid the real world of risk and uncertainty and enter an illusory world of perfect control.

Neitzsche describes happiness as the feeling of power increasing and resistance being overcome. In the modern world, there is no greater feeling of absolute control and competence than seeing the world as software that can be reprogrammed and redesigned, and as a problem that can be fixed. The threat of artificial super-intelligence can be mitigated with the absolute confidence that so long as a small group of programmers and designers be trusted and funded to impose an ethical framework on its development through programmed logic and rationality. Even the human mortality, referred to "the ideology of the inevitability of the death of every individual" by Peter Thiel, will be controlled and managed by cryonics and aging research (e.g. Google's Calico) until the advances of biotechnology can "hack" death. This belief is instilled in the ideology of Technological Solutionism: the faith that everything – including the future of humanity – will be fixed by technology.

Solutionist Design: The Disempowerment of the Designer

"Worrying about sentient AI as the ice caps melt is like standing on the tracks as the train rushes in, worrying about being hit by lightning." – Bret Victor

Neil Postman's worries that in the technopoy, "culture seeks its authorisation in technology, finds its satisfactions in technology, and takes its orders from technology" (Postman 2011). If designers are also addicted to the technological fix, their charge to designing culture (as per John Maeda) will always be in subservience to what the path of technology dictates (See Figure 14) Within the Ideology of Technological Solutionism, the designer loses agency and power to the technological fix, where problems are pre-determined according to whether it can be managed by technology. Problems that fall outside of this criteria — the ones that require facing ambiguity and political complexity — are dismissed and made invisible.

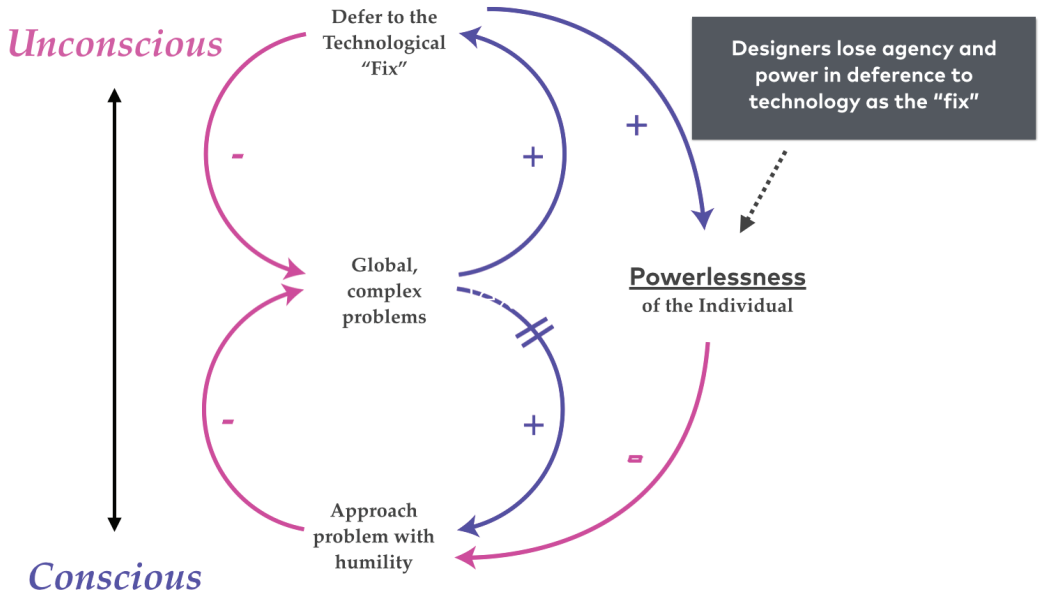
Even the most trivial concerns of the few, when power is afforded to them, set the cultural, economic and social global priorities that society chooses to focus on. Beyond the economic and material impact of resource allocation to problems like "hacking death" and "artificial superintelligence" instead of climate change, the social shaping of technological determinism reaches far beyond Silicon Valley to impact culture. This ideological is embedded into the artifacts and platforms designed to persuade and addict users to the technological fix. As users, we turn the technological gaze onto our own bodies and lives to be measured, quantified and crunched by the machine as data (that companies then capitalize on). The casual adoption of the language of "reprogramming" the self or "hacking" people's productivity is a reflection of the ways in which the machine metaphor has blurred the lines between human and machine in everyday speech.

The irony of the pathological pursuit of control within limits of technological determinism is illustrated in Silicon Valley's simultaneous fear and worship of AI: the technology that is the saviour of humanity can also be its destroyer. Insofar as society submits to the reductionist model of the mind as computer, we shape a narrative where it is inevitable that humans will be subservient to the intelligence of the machines. People unconsciously relinquish their power and agency to the machine as authority, undermining their own ability to question and shape technology. The near religious deference to machine authority is what Yuval Noah Harari calls "Data-ism", a new religion where people give algorithms the ability to make the most important decisions (Harari 2016). Harari sees a near-future world where users will trust Google to be able to tell them

about who or what they desire, deferring to the authority of the data profile accumulated about who we are - our emails, phone calls, biometric history and preferences etc. – and the algorithms that define us, these mysterious black boxes that are bestowed omniscience and therefore omnipotence. As long as we cede our power to it, this future doesn't need to be "good" or "right" to be happen. As Harari says, "even if Dataism is wrong about life, it may still conquer the world. Many previous creeds gained enormous popularity and power despite their factual mistakes." (Harari 2016)

This is logical conclusion of what media theorist Neil Postman called the technopoly, where when "technology eliminates alternatives to itself… it does not make them illegal, immoral or unpopular. It makes them invisible and therefore irrelevant." (Postman 2011) The worlds that the technopoly neutralizes or renders "invisible" are real; they are cultural, political and economic structures that maintain the fabric of society. Next, we will learn about the invisible structures of Neoliberal Capitalism that pool power and wealth into the hands of a few while the rest are distracted by the whims of the technological fix.

Figure 14: **Shifting the Burden to the Technological Fix**

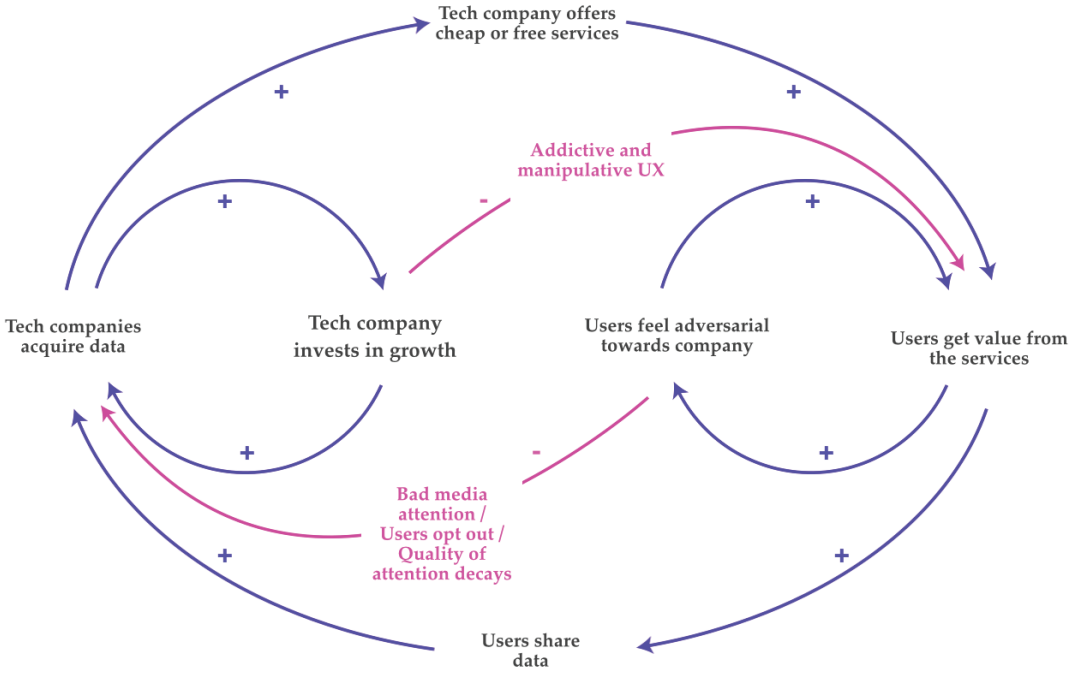


Unconsciousness by Neoliberal Capitalism: Addiction to Growth

There is no higher God in Silicon Valley than growth. No sacrifice too big for its craving altar. As long as you keep your curve exponential, all your sins will be forgotten at the exit.
—DHH, Signal vs Noise

As we move down the Causal Layered Analysis (CLA), the next level is that of the "social causes". I argue that one of the drivers of the addiction to the technological fix, for both users and designers is an underlying addiction to growth, taken as unquestionably positive driver in Silicon Valley within the Ideology of Capitalism. The technology industry ensures the continual and exponential growth of attention, data, revenue and power, even at the expense of human needs and dignity.

Figure 15: **Accidental Adversaries: Tech companies vs the people**



Free or free: Platform Capitalism

With over 1.86 billion users signing onto the platform on a daily basis (Zephoria 2017), the growth and scale of Facebook's influence on human attention is staggering. In its raw ambition to become the world's "global network", Facebook constantly iterates on its product to ensure its desirability, and expand its reach through altruistic efforts like Internet.org (offering internet services to the poor in the hopes that they transform into a viable market) and the expensive acquisition of other companies. Mark Zuckerberg surprised investors by purchasing Instagram in 2012 for one billion, and then WhatsApp for 19 billion dollars in 2014, but was ultimately lauded for the prescience and continued relevance of these investments.

Facebook's success tends to be attributed to its growth-first principle, also now the default approach of social media companies, where revenue-generation is secondary to the goal of increasing user count. Facebook and other companies compete to have as many users as possible because they translate to something even more valuable – data. The companies are able to use data to sell advertising and influence desire.

The platform capitalism of Silicon Valley facilitates the activities that takes place on its network in order to extract data as its currency. The detailed data profiles of their customers can then be used by designers to enhance the desirability of the product. Through the reinforcing cycle of the network effect, these platforms become more desirable as more and more people join them, which increases its speculative value to investors and venture capitalists who gamble on the continued growth of the company as the jackpot investment. As long as the companies are able to exchange cheap services for valuable data, the goal is to continue to grow in power and scale. The cheerful promise of the advertising business model hypothetically supports a perfectly symbiotic relationship, a virtuous feedback cycle where the user's sharing of data increases the value of the service for both

parties. However, we had described the dynamics of addiction in Chapter 2, where designers in deference to the growth metrics of their company end up designing interfaces that lead to addictive behaviour for their users. In the systems dynamic named "accidental adversaries" (See Figure 15), the obsession with the continued growth of the company leads to the lowering of the quality of the service for the user. I would argue that the rising public and media backlash against the tech companies in Silicon Valley is in response to the increasing disenfranchisement of the users.

Douglas Rushkoff, a popular media theorist, argues that Silicon Valley's addiction to growth has created an extractive digital economy resulting in an adversarial relationship between human needs and the demands of technology industry. These platforms are designed with a "scorched earth" method of "taking value from people and turning into capital for shareholders." (Rushkoff 2016) These platforms have been called death star platforms (Gorenflo, 2015), whose ultimate gamble is "global monopoly or bust." The overwhelming focus on growth has led to an incentive structure that prioritizes market dominance and profit maximization over the human costs, including the needs of the user and even the long-term health of the company and its staff. However, it appears impossible to imagine how these companies can ever stop their growth path because this is how the system of capitalism has fixed the goal of progress. With low costs, global reach, scientifically developed user interfaces, and funding, and without regulatory checks or public awareness, death star platforms can scale and grow their success at unprecedented speeds.

Tragedy of the Commons: Fetishism of Human Attention through Desire

In the information economy, digital platforms compete for attention as a zero-sum resource since humans only have a limited amount of attention to direct. While psychologist William James believed that our experience is "what we agree to attend to", the ubiquity of advertising is an indication of the level to which human attention can be taken possession of without consent. Advertising and persuasion draws attention through desire, and its channels penetrate our digital environments in increasingly subtle ways. Malcolm McCullough coined the term 'ambient commons' to refer to the ways in which everyday environments are filling with more information and every possible interaction is an opportunity to sell. (McCullough 2013) We feel constantly distracted because our digital environments are deliberately engineered to capture our attention.

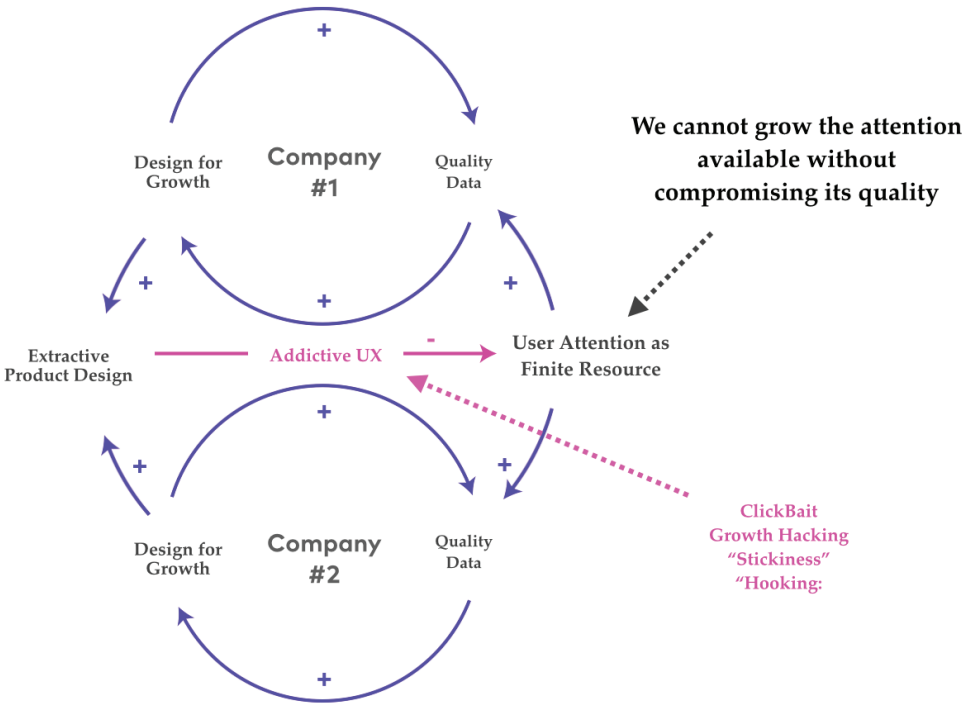
As more information floods our environments, the more attention becomes a scarce resource to be competed over. This relationship is best summed up in Herbert A. Simon's oft-quoted text: "What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention, and a need to allocate that attention efficiently among the overabundance of information sources that might consume it." (Simon 1996) Within the capitalist ideology, the poverty of attention is an excellent economic driver of competition, productiveness, and progress. Attention is captured to be translated into another kind of commodity – data. In surveillance capitalism (Zuboff 2015), the tight feedback loop between attention and data is predicated on the expectation that what users attend to, they record, what they record, they upload, and what they upload, they share. This information can be categorized into data sets profiling the detailed tastes and wants of individuals, a valuable commodity for data brokers. However, **we cannot grow the quantity of attention we have without comprising its quality.**

Companies have learned how to divide up and shorten attention through attention-grabbing headlines and click-bait. Access to user insights through a/b testing and live feedback — granular enough to know even when the user pauses scrolling to look at a headline — makes the designer's job much easier and more efficient to capture attention. Postman describes how the chaotic

abundance of information has created the phenomenon of information overload and anxiety for the user (which have led to other "fixes" like algorithmic filter bubbles with its own set of unintended consequences). The relentless growth of information is endless, but what ultimately suffers is the user's quality of attention.

The founder of Wordpress is quoted as a testimonial for Nir Eyal's Hooked book, claiming that companies must "read Hooked or the company that replaces you will." Platform designers increasingly create "sticky" click-bait content and use manipulative "dark patterns" (user interfaces designed to trick users to unconsciously do what they would otherwise not do) to compete with other companies for "eyeballs". In the arm's race for attention, the logical outcome of the platform economy's growth addiction is a race to the bottom. As platform interfaces are optimized to "hook" and exploit the attention of users, they are harming the very resource pool of data that informs how technology companies will build their future products. In less misanthropic terms, as long as designers defer to business objectives, the long-term consequences of "business-as-usual" results in the unconscious and harmful design of addicted users. A digital economy that optimizes for relentless growth leads to what I call the Tragedy of Human Attention within the Digital Growth Economy (See Figure 15), a systems archetype where companies working in rational self-interest escalate their actions to the point where they deplete and erode their shared resource: attention.

Figure 16: **The Tragedy of Human Attention within the Digital Growth Economy**



In the absence of invention through regulation or a transparent ethical code, design incentives are developed in pursuit of business profitability and scale. Natasha Schüll's alarming illustration of the casinos of Las Vegas is an example of a self-destructive dehumanizing future: The extractive digital economy of attention sees an end game where users are addicts who can only ask for their "fix" and technology companies become the amoral dealers of that fix.

Desire Fetishism: The Alienation of the Capitalist Subject

The digital economy demands growth not just of attention, but of productivity. Operating on the principle of scarcity, Capitalism assumes the relentless pursuit of growth of the economy through the accumulation of capital. The ideological frame of commodification allows for the transformation of the world – goods, services and people – into objects that can be traded within the free market in terms of economic value. This is what Karl Polanyi calls the "market society", where the cultural and social institutions are set up around the mythic conception of the person as a bartering and rational economic agent. However, we also know that desire is a productive force in Capitalism that

drives growth through the addictive pursuit of satisfaction that is never truly satisfies one's lack: I work hard in order to purchase or consume something (a product, a bag, a social media "like"), the acquisition of which creates a fleeting frisson of pleasure that curbs the craving only for a moment before reinforcing the desire for more. In capitalism, perhaps it is appropriate that people become addicts who are "slaves to their desires", so long as those desires can be satisfied by continual consumption and serves the productivity of capitalism itself.

What is the source of the pathological obsession with economic productivity and its exponential growth within the Ideology of Capitalism? The rise of Capitalism and its historicized relationship with religion is outlined famously in Max Weber's *The Protestant Ethic and the Spirit of Capitalism*, where the sacred and virtuous values of work and progress (associated with servitude to God) embedded in religion led to large numbers of people developing their own enterprises. The Calvinist doctrine of predestination where God has already determined who will achieve salvation led to people managing this profound uncertainty through work. Rather than greed, Weber argues that these moral values paved the way for the emergence of the spirit of modern Capitalism and the unquestioned pursuit for economic growth (Weber 2002). When the religious underpinning to capitalism eventually eroded, what was left in secular capitalist society was a prevailing sense of ascetic discipline, thrift and moral servitude to work as the source of meaning in a disenchanted world.

Anthropologist Arjun Appadurai also discusses a "calculative ethic" that emerged from this transition, where the market became a magical instead of an ethical place. The concept of uncertainty was replaced with an overwhelming focus on risk, which can be measured, managed and forecasted. As a result, "the world of financial risk is in fact nothing more than an enormous set of tools, a technology, for the mapping and measuring of risk, not in order to manage it but rather in order to exploit it" (Appadurai, 2015). So the difference between the Protestant work ethic and the new Capitalist ethos is the new calculative spirit does not serve the divine, but the maximization of profit. However, if the system is designed around efficiency and certainty, its actors are not. As Appadurai describes, even if the "multitude of today's market devices… can be hyper-methodical… the spirit of their operators could be avaricious, adventurous, exuberant, possessed, charismatic, excessive or reckless." Within the "faith based economy", players gamble in the market through the quantifying tools of control and metrics, even while betting on the "short sell" of pessimistic risk and uncertainty.

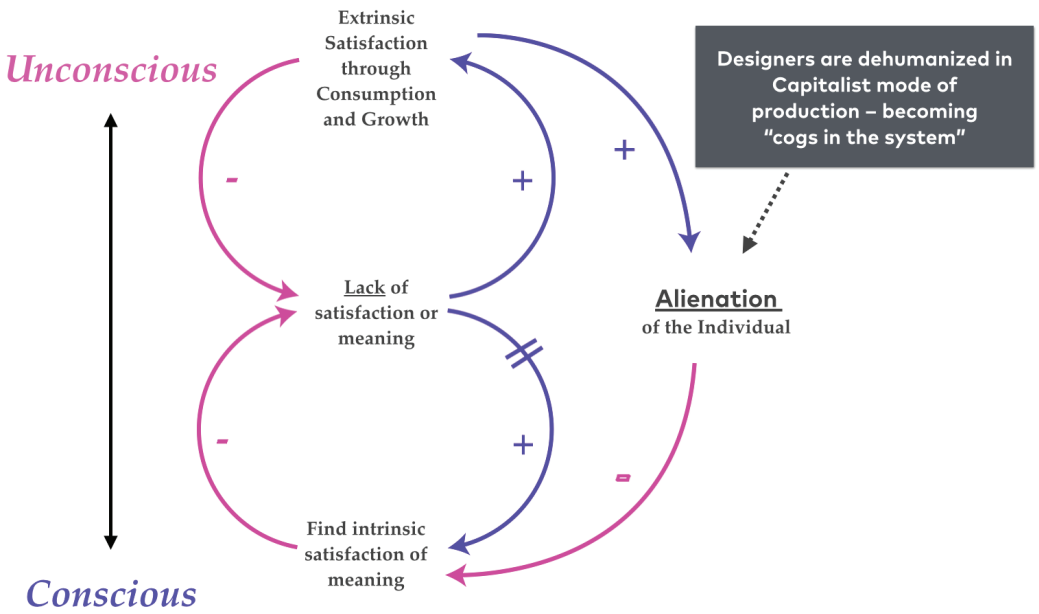
This servitude to calculative work ethic has led to the alienation of the human, a term borrowed from Marxist theory where the person is dehumanized as being a mechanistic part of the Capitalist mode of production, becoming merely a "cog in the system" (see Figure…). In this scenario, the designer's passive and unconscious servitude to the calculating spirit has led to the inability to self-determine one's her life and destiny. Instead, the employee is asked to be a subject of the corporation and its predetermined metrics, becoming increasingly alienated from her ethical consciousness. The designer's value in the tech company is commoditized as her ability to shape the tastes and desires of consumers in order to maximize the growth and productivity of the system. If her role as part of the system results in the design of addicted users, the offloading of responsibility of the self to the organization enables the designer to disregard ethical responsibility. Furthermore, the intellectual labour of a designer to create desire becomes fetishized by capitalism as a neutral commodity of intrinsic value to be traded within the free market. The designer is alienated from herself, her labour, and her community as an atomized individual pursuing self-interest with no need of concern for others. Simultaneously, the designer unconsciously becomes part of the machine, transformed into another conduit of an efficiently functioning information system.

The atomization of the autonomous individual sees an extension into the "gig economy" of today that celebrates the freedom

of entrepreneurial pursuit and laissez-faire economics enabled through technology platforms like Uber and Airbnb. The story of the gig economy celebrates emancipation from the bureaucratic shackles of the 9-5 job. However, the other trade offs are the protective mechanisms of job security, health benefits and the collective support of one's peers and colleagues through union structures. More and more, the neoliberal story of individual autonomy optimizes for the preservation and optimization of productivity at the expense of community. By the stripping away of bonds, individuals are left alienated; creating the very conditions of isolation that feeds addiction.

Left with a void of meaning and the addictive impulse for wonder and enchantment, people clamber to believe in something greater then themselves. Rather than empowering the individuals towards the self-determination of meaning, unconscious designers reinforce the vicious cycle of preying on the vulnerable state of users for profit. Philosopher Albert Borgmann describes the core promise of technological simulation being the escape from the constraints and limitations of the real world for a hyper-reality of total control and satisfaction of desires for the subject. However, that subject also becomes reduced as disembodied and disconnected as a "point of arbitrary desires", thereby becoming an unconscious addict enslaved to the pursuit of absolute control (Borgmann, 2013).

Figure 17: **Shifting the Burden to extrinsic satisfaction through consumption and growth.**



As described in the previous section "Addiction to the Technological Fix", users and designers alike hold on to the certainty of calculative measures in order to re-enchant themselves with the saving magic of technology (Weizenbeum 1976, Schüll 2012, Postman 2011). People eagerly embrace the illusion of computing technology's deterministic progress, especially because the capabilities of technology match the current value system of capitalism. Machines are faster, more efficient and more productive than any human, meeting the economic system's insatiable desire for speed and growth.

One of the greatest concerns right now is the economic and social disruption through the rise of automation – what happens when we lose our jobs to robots? However, the fearful possibility of human redundancy is reflective of how we value people based on their commodity relationship to the market. Following the logic of the Capitalist economy is to eventually replace the sweaty, hungry, human with the gleaming, efficient, machine. The cultural rationalization of modern society and the atomization of people has left a spiritual void, paving the way for humanity to potentially collectively choose to opt-in to the mechanistic ordering of the world for efficiency and productivity. Anything that cannot be scientifically managed, or reduced to a set of metrics that can be optimized is at threat of being left behind, including the human.

Unconsciousness by Techno-Scientism: Addiction to Measurement

"Not surprisingly, the more thoroughly we became acquainted with the details of the map - the more we absorbed what it showed and got used to the absence of the things it did not show - the more perplexed, unhappy and cynical we became."
— E.F Schumacher, A Guide for the Perplexed, 1977

I now investigate the ideology of Techno-Scientism in the "worldview" level of the Causal Layered Analysis to understand the forces underlying our addiction to the measurement of the world. The Enlightenment project and the Scientific Revolution have illuminated a world of reason and linear progress, but have also cast other aspects of the human condition into the shadows. I argue that desire for certainty has become pathologized as the oppressive project of reducing human experience and the natural world into a cybernetic map to be measured, calculated and controlled. This addiction manifests in Silicon Valley and technology companies today as the totalitarianism of dataficiation, leading to a contempt of the territories of the human condition that cannot be measured and extracted into computational data.

Big Data Madness

The obsession with "big data" has reached religious-fever pitch in Silicon Valley –where the future of technological progress depends on innovations around "data mining" and "machine learning". The "bigness" and quantity of the data set acquired holds the allure promised in information science of moving up the ladder to transform into information, knowledge, and ultimately wisdom. (see figure…).

The value of data as an asset is largely about speculative value of what we can learn from it in the future; for example, Amazon as a "death star platform" has investors betting on jackpot

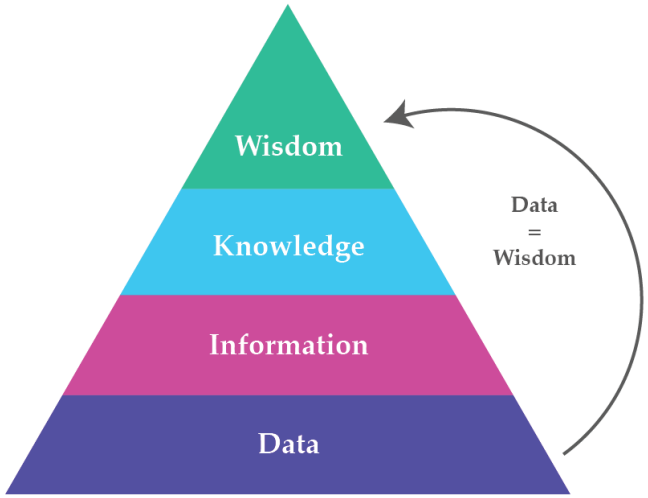


Figure 18: The DIKW pyramid in information science

future where it will take all of the competition off the table by forecasting and predicting what people want better than any other company. Amazon's investment capital is high because it is playing the long game, losing money for years until it can take all the chips off the table. Facebook is playing a similar game of monetizing data; with over 500+ terabytes of data reported in 2012 flowing into platform, Facebook's walled garden of information is an extremely valuable asset that can be accessed and traded with other data brokers (who collect, package and maintain data on millions of consumers) to be sold as a commodity to advertisers, media and any other interested parties.

Writer and technologist Jaron Lanier criticizes these powerful companies with access to data as "siren servers", where the dominant business model is to mine as much data as possible and use powerful computers in order to extract massive profits (Lanier 2014). Therefore, the ultimate purpose and framework of action in digital media platforms is to collect calculable data, and the resulting "universal" design of its architecture

demands that people express themselves through rigid templates, categories and preformatted options. Facebook fights for all social interactions to be performed on the platform, even fitting the entire span of human emotional response into a pre-determined set of six emoji buttons. Lanier rightly questions how "when we ask people to live through our models, we are potentially reducing life itself. How can we ever know what we might be losing?" (Lanier 2010).

Designing for Metrics

"Machine learning is like money laundering for bias. It's a clean, mathematical apparatus that gives the status quo the aura of logical inevitability. The numbers don't lie"
— Maciej Cegłowski

If the ideology of Capitalism sees the world in terms of its economic and commoditized value, datafication is the transformation of the world into computerized data. Success is measured through a plethora of quantifying metrics, which may include: engagement rates (how many hours per day does the user use the app); retention (what percentage of the users stay after 7 days); user rating (what is your star rating on the app store); referral rates (how many other people does your user bring to your platform); conversion rate (how many people exposed to the interface do the desired action). These metrics are the heuristics that define success, purpose and meaning for the organization.

Designers are beholden to metrics in the companies that they work for, sometimes deferring decision-making to the algorithms that process huge amounts of data and information tracking the behaviour of users. In the metics-driven company, data trumps everything. The Twitter product designer that I interviewed compares the obsession with "metrics-driven" or "data-driven" cultures in Silicon Valley to the idea of sex with teenagers – "everyone says they're doing it, because everyone else says they're doing it." The technological company's love affair with metrics holds the aura of objectivity and neutrality – apparently numbers don't lie.

The obsession with measurement means that aspects of the human experience that are more difficult to measure because they are slow, complex and nuanced (e.g. long-term satisfaction, abuse) gets deprioritized or ignored. The desire to wipe the world clean of the messiness of human judgement through algorithms does harm to the things that get missed in the relentless quantification. Instead, the numbers that get enhanced are the click bait metrics that get fast and easy results, leading to the production of addictive junk food content. On the other hand, the real lived experiences of users like the traumatizing effects of abuse or violent content merely shows up as another number indicating a negative experience in a swarm of otherwise positive experiences. In 2014 for example, Eric Meyer discovered on his Facebook wall "Year in Review" an image of his daughter who had passed away that year. Eric wrote about this "inadvertent algorithmic cruelty" surfacing not as a deliberate form of assault, but as a case of "falling through the cracks" where a design feature might work decently for the majority of Facebook's users, but then creates indescribable grief and pain for a user (Meyer 2014). The deference of ethics to data shifts the burden of responsibility to what the numbers show instead. In a similar vein, although women are the frequent targets of harassment and abuse on Twitter, their experiences can be dismissed as a mere blip in the numbers.

Data-driven decision-making can be presented as the removal of politics and human bias in the operation to make the most rational decisions possible. If the organizational mission had traditionally relied on the definition of values, the calculating spirit has replaced ethics with corporate indexes of "transparency", "corporate accountability", and "good governance." (Appadurai, 2015). However, the choices in what we choose to measure is laden with the ideological beliefs, principles and values embedded into the very measuring tools

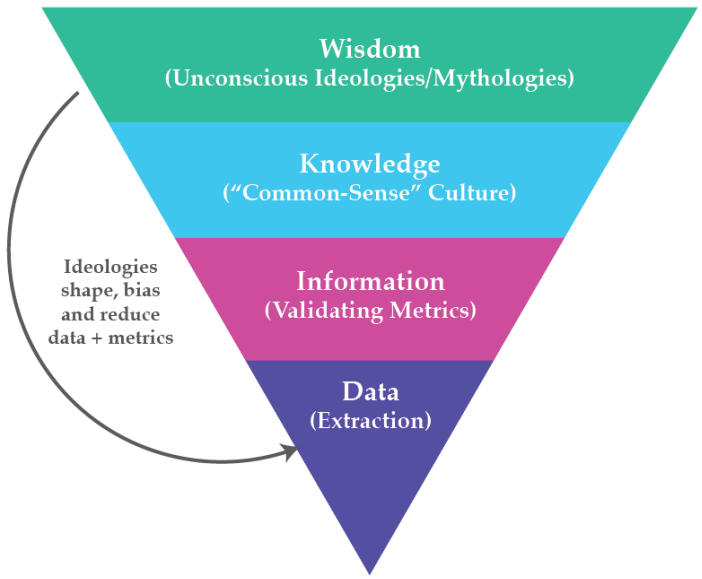


Figure 19: Ideological addictions shape and bias data collection

themselves. The data collected can be a self-fulfilling prophecy of the kinds of unconscious ideologies that pre-determine the world that must be unfolded through the data (See Figure…). However, numbers allow for the projection of the false premise of neutrality that companies can hide behind, literally hiding the "human" behind the design. Facebook content is claimed to be "neutral" because its timelines are "surfaced by an algorithm". However, these algorithmic black boxes are designed and fine-tuned by the companies with very specific and secret agendas (Pasquale 2015). No matter how much Mark Zuckerberg claims to be a "tech company, not a media company" by replacing its editorial team with code, its algorithms cannot escape the human bias of its engineers and company objectives (York and Stender 2016). The deference to predictive algorithms as better and more "accurate" user experience makes invisible the reality that these algorithms might be programmed with self-serving interests hidden in the code — for example, the monetization of attention and data.

The Detachment of Certainty

If total knowability is the objective of the system, digital technologies have seemingly become the magical tool by which designers and users can achieve it in the most delightful, seamless, frictionless way possible. Today, users are hyperactive participants in the calculation, verification and measurement of their identities. Digital platforms have ushered in the age of surveillance capitalism where all behaviour can and should tracked for influence and modification. The media-saturated world has led to the obsession with public self exposure, where people have allowed their identities to be trafficked and traded by these platforms by "agreeing" to the terms and conditions with the click of button, opening the floodgates of detailed data without conscious consent.

I worry that the pathology of measurement impacts the designers of the technology even more deeply, who not only see the collection of data as the highest order, but ultimately see the data as source material for all of reality. In the era of algorithmic monitoring, human identity is to be reformatted as collectable, readable, and exploitable data from which designers create models of their users. These models are the "maps" on the territory of reality that can be useful navigational tools for direction and way-funding. However, scholar Alfred Korzybski describes the tendency of the map-territory relation where people over-rely on and confuse the models of reality as reality itself. The mapping of the world into computable data can flatten not only the needs, desires and experiences of people, but also the horizon of possible ways of being in the world. This is the quantifying spirit of the Enlightenment gone mad.

Since the Enlightenment and the Scientific Revolution, the dominant and preferred method of mapping in the modern world is through reason-based science. With the Enlightenment project of freedom and liberty, the shackles of religion have been ripped off through the power of science and fact, and the

capitalist mirror of the hard-working protestant is now the high performing productivity addict. Promises of the superior and reliable decision-making of science has made it the alternative to religion in the shaping of the moral self. So science moves into the vacuum of the cultural sphere, refining the scope of ethics, values, and meaning according to the quantifying agenda.

However, the undermining of dogmatic beliefs of religion and faith through reason does not lead automatically to the emancipation of thought, but may impose a new dogma of mythic certainties. Indeed, many philosophers and theorists (e.g. Herbert Marcuse, Theordor Adorno, Max Horkheimer) have critiqued the failings of the Enlightenment and its promises of liberation, progress, mastery and control. Although the extreme pessimism of these thinkers can be challenged, it is vital to be conscious of ideological blindness when the frameworks of measurement and reason is no longer subject to questioning. Instead, the authority of reason today – such as the inevitable dominance of machine super intelligence – mimics the structures of superstition and religious fundamentalism. The unquestioned belief in science and technology has its basis in an ideology that I refer to as Techno-Scientism.

In response to Marx's belief that "religion is the opiate of the masses," Hannah Arendt describes how modern ideologies "whether political or psychological or social, are far better fitted to immunize man's soul against the shocking impact of reality than any traditional religion that we know" (Arendt 1954). The absolute faith in technology and science as a comprehensive belief system for the total ordering of the world is an impoverished worldview that confines matters of concern to what can be counted, measured and weighted (Schumacher 1978). The scientific method in understanding the natural world, logic and mathematics has been historically important and culturally emancipatory. However, any set of beliefs left unchecked and unquestioned – including the instrumental rationality of science – can lead to the totalitarianism of that ideology. Techno-Scientism is the encompassing of all phenomenon, including non-scientific

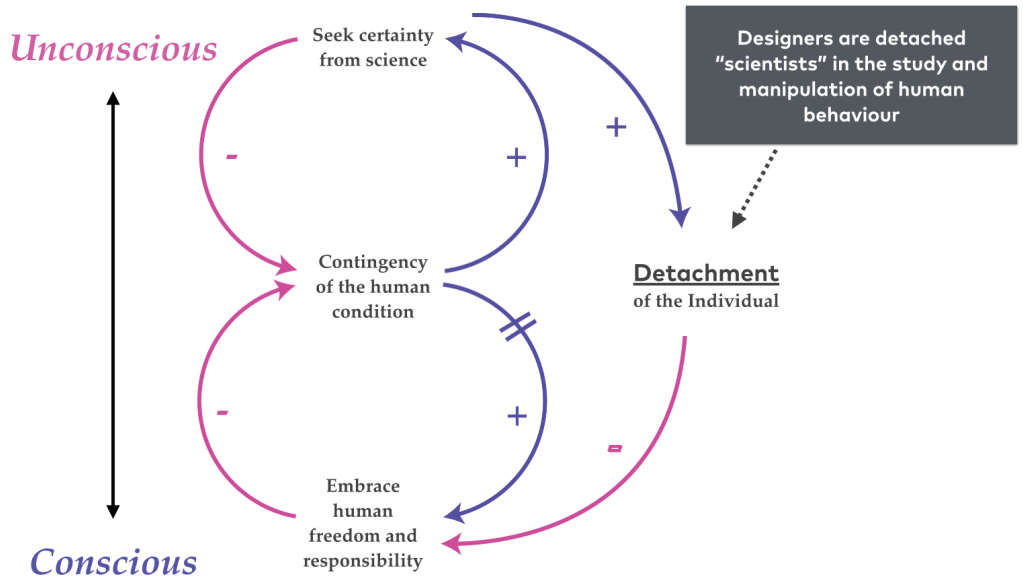


Figure 19: **Shifting the Burden to certainty from science**

disciplines and domains (e.g. politics, culture and ethics) under the framework of science and technology as the single source of meaning and purpose.

In the pathological desire to enforce objective order and measurement to all of reality, we also risk attributing the factual certainty of science to areas that are distinctly non-scientific (and non-falsifiable according to Karl Popper), such as Skinner's "science" of radical behaviourism. The language of calculation and measurement becomes a political tool to cloak information with the illusion of objective authority, which undermines the validity and authority of the scientific project altogether. Suddenly, anything can become a "science" and speculative numbers get taken for fact. Subsequently, we enter a destabilizing post-truth post-Trump world where the collective sense of disenfranchisement, alienation and mistrust has erupted into a nihilistic void; all science, truth and fact is called into question, everything is "fake news", and people become ever more prone to addiction as escape.

Designing in contempt of humanity

Without critical reflection, the unconscious designer risks becoming a techno-rational scientist, observing the user as a set of numbers and metrics to be programmed to the conditions desired by modern technocracy (See Figure…). As we learned in Chapter 3, even the "good intentions" of the designer enacted through human-centred design, empathy, and behaviour change can lead to addiction and other harmful interactions. The designer's power and awareness is constrained within a set of goals and values sought out by corporate and ideological agendas that optimizes for the success of the system, not necessarily the human.

Where technology reigns supreme, philosopher Martin Heidegger describes a much more hidden thing that he calls the *essence* of technology. In his lecture *A Question Concerning Technology* (1952), Heidegger describes the essence of technology as "challenging-forth" or "enframing" of the world as a standing reserve of controllable and orderable resources. Heidegger's reflections on the essence of technology is particularly prescient when we consider the misanthropic ways in which tech companies have rendered their users into a resource pool of data from which to extract information, and whose attention can be mined as currency. The calculating spirit of the technocracy is reflected in the contemporary idea of the device-managed quantified self, where people reduce their bodies and minds into something that can be hacked, categorized and managed.

By having the world be "challenged forth" through the instrumental essence of technology, we can only envision ways of being-in-the-world determined by what we can measure and master. The problem is how quickly this need to quantify becomes pathological, where every person you meet becomes another "follower" to boost your social hierarchy (as fixed by the platform). Human experiences like friendships become quantifiable by the number of likes and time spent on a platform, and the act of eating, traditionally social and communal, becomes yet another opportunity to hack one's nutritional needs (e.g. Soylent). Mark Zuckerberg's recent Facebook 2017 manifesto about "Building Global Community" reflects the same assumption – the more the world can be connected and controlled through Facebook's platform technology, the better the world will be. The rise of software computing has brought us tantalizingly closer to the development of a world of total control and perfect contingency, but at what costs?

Hannah Arendt was critical of developments in technology moving in a direction that turns away from the human condition. She describes the pursuit of this "future man [sic], whom scientists tell us they will produce in no more than a hundred years, seems to be possessed by a rebellion against human existence as it has been given, a free gift from nowhere (secularly speaking), which he[sic] wishes to exchange, as it were, for something he has made himself" (Arendt, 2013). I believe that the rebellion embedded in technological innovation is driven by our extreme intolerance of the profound uncertainty and contingency of the mortal human life and freedom. Technology makes the human existence more efficient and convenient, not to release us for generative contemplation or leisure, but to escape the responsibilities of quotidian life. This has led to what design academic Cameron Tonkinwise called "contempt for all the friction and finitude of everyday life" adopted in modern-day design philosophies (Tonkinwise 2016). The purpose of technological innovation is to avoid and make invisible all aspects of the human condition that cannot be measured and controlled.

So we turn to Techno-Scientism in the absurd pursuit of total objectivity and universal knowledge within this totalizing worldview. Michael Polanyi warns that the "passion for achieving absolutely impersonal knowledge, which being unable to recognize any persons, presents us with a picture of the universe in which we ourselves are absent" (Polanyi, 2012). Our addiction to measurement and corresponding contempt for the

messiness, ambiguity, and contingency of the human condition is scripted the very design of new ontological worlds of being. Without conscious intervention, we may design out the human altogether.

CHAPTER 6
Avoiding Freedom

Avoiding Freedom

"It is undoubtedly easier to believe in absolutes, follow blindly, mouth received wisdom. But that is self betrayal."
— John Ralston Saul.

At the base of the Theory U and Causal Layered Analysis, I explore in this chapter why designers choose unconsciousness, and what people might be trying to escape through ideological addiction.

Addiction as Avoidance

What are people attempting to avoid in what Arendt calls the "rebellion against human existence"? Schüll's gambler spoke of the welcome oblivion of machine gambling, where "to concentrate on the screen, you simply cannot think about anything except what cards you are going to choose to keep and what cards you are going to choose to discard." (Schüll, 2012) The addict is able to find comfort in the illusory sense of control, even if "control" is merely the ability to guarantee their own loss: "it's me hurting myself and not someone else (hurting me); I'm the one controlling it." The world of measurement and facts is a struggle for the certainty, and the longing for the firm conviction of safety. So what is it about the modern social condition that engenders such a need to escape reality through addiction?

A century of scientific research has failed to properly define or "solve" the wicked problem of addiction because it is a holistic and complex phenomenon co-produced by physiological, psychological, social and existential conditions. Addiction physician Dr. Gabor Maté describes addiction as a symptom of the "existential vacuum"; it is the feeling of emptiness and moral malaise engendered when we place supreme value on selfish attainment (Maté, 2010). Dr. Maté and Dr. Alexander's research reveal how addiction stems from a sense of dislocation, and the feelings of alienation, isolation and powerlessness facing the modern condition. As a form of escape, philosopher John Ralston Saul saw society addicted to illusions, where the "power in our civilization is repeatedly tied to the pursuit of all-inclusive truths and utopias." (Saul, 2005) As a society, we are unable to see past our addictions because we are numbed by the banal certainty these addictions promise: that we are on the trail to truth. I propose that the addiction to ideological thinking and our submission to the authority of the "common sense" of culture is ultimately a flight from reality and the contingency of human existence.

In the previous chapters, this research has shown how designers have to work within technology companies and organizations that set business agendas, and wisdom in decision-making is often deferred to the mechanics of business-as-usual. Designers are confronted with a lack of real freedom and power within these companies, and their livelihoods depend on their employment and the faith that the organization will be able to think ethically for them. Ideologically disempowered, alienated and detached from the harmful consequences of their work, "unconscious" designers try to get the fleeting feeling of control from the menu of choices available to them - the ability to be optimize for the growth and engagement metrics set by the company. Designers are addicts, who "like other consumers in the "risk society", act not so much to maximize as to manage; to this end, they continually recalibrate their actions in response to environmental feedback, flexibly adjusting themselves to changing circumstances and contingencies." (Schüll, 2012)

Therefore, the addict, whether it is the user or designer, is an unconscious actuarial self who manages what she can within the limits of an ultimately disempowering and alienating system. Even most powerful stakeholders, such as the companies and governments that profit enormously off addiction, are so pathologically dependent on the revenue of technological solutions that they see no other possibility. We live in a society where its actors are "looking for a quick fix to long-term problems. They start chasing their own losses just like the addict does, they suspend their own sense of reality." (Schüll, 2012)

Fear of Human Freedom

The smarter our technologies and environments become, the more people are happy to relinquish their agency and responsibility to machines. After the horrors of World War II and the spread of totalitarianism, psychoanalyst Erich Fromm wrote in his book Escape from Freedom (1941) about the psychological propensity for people to escape their freedom. For Fromm, the paradox of the human relationship with freedom is that people fight as desperately for the attainment of freedom as they do for the escape from it (Fromm, 1994). Fromm outlined a core difference between two types of freedom: negative freedom is "freedom from": the desire to be free from social convention and constraints; whereas positive freedom is "freedom to": the ability to be able to freely engage in creative acts. In order for people to move from the immature conception of negative freedom and transition to positive freedom, they must cross a nihilistic chasm. This chasm is the sense of lack engendered from one's freedom from authority (such as religion), leaving a void of direction where the stabilizing structures of meaning used to stand. In order to cross this chasm, people have to feel empowered to embrace "freedom to" by creatively establishing personal meaning and purpose.

Fromm saw this nihilistic chasm as a profoundly vulnerable and uncomfortable space where people will readily submit to a new authority such as fascism and dictatorship in order to avoid it. This is the addictive impulse, where one elects to substitute freedom and offer voluntary servitude to any new "god" that promises to eliminate the dread and anxiety of uncertainty. I believe that addiction to the reigning authorities of Techno-Scientism, Neoliberal Capitalism, and Technological Solutionism give people the annihilating comfort of ideological "truth". Our contemporary relationship with technology bears much in common with the three common escape mechanisms from freedom outlined by Erich Fromm:

Authoritarianism: The desire to give control to another and remove the freedom of choice.

The deification of Silicon Valley and technological innovation in determining the future of humanity is an example of how technology companies, designers and their users are increasingly giving up judgement to the authority of data. More and more, the ideology of Techno-Scientism drives the eradication of all ambiguity and contingency through relentless measurement and data collection. As long as the myth continues that machines will eventually know us better than we know ourselves, we submit to the authoritarian system of machine intelligence and the high priests of the new techno-religion.

Automaton conformity: To change one's ideal self to conform to a preferred type of personality and to lose authenticity as a result.

Society under surveillance capitalism eschews privacy and demands that people should perform their lives through social media. While the power and influence of networked media has supported the success of political movements (e.g. Black Lives Matter and Arab Spring) and increased transparency (e.g. Panama Papers, Snowden's NSA leaks), it has also enabled a fishbowl of web-based outrage and abuse. As a result, people are hyperaware

of the panoptic monitoring of all their thoughts and actions. Hannah Arendt's concern is that "the non-violent coercion of public disapproval is so strong that the dissenter has nowhere to turn in his loneliness and impotence, and in the end will be driven either to conformity or to despair." (Arendt, 1930) From the rise of online bullying to the sale of data to the government by digital platforms, there is a fearful climate of careful self-policing through threat of social and political disapproval. As a result, free thinking and speaking truth to power is traded off for conformity, and we normalize the banality of evil.

Destructiveness: To eliminate the self of the world as a hole to escape freedom.

Fromm also saw outwardly destructive acts as attempts to eliminate an uncertain world. In order to avoid the feeling of powerlessness as individuals in a contingent world, we seek to destroy that world. The outward forms of destructiveness can be witnessed in alarming trends of overt white supremacy, racism and intolerance that has been reinforced through the isolation of the internet. As demonstrated in the 4chan users who elect for destructive politics a way to self-induce loss, people wish to destroy that which they cannot control. However, the most pressing example of the drive to destructiveness is the satisfaction taken from environmental domination and the subsequent destruction of the planet through consumer capitalism. By ignoring the perils of climate change and continuing the extractive processes of modern progress, we seek to bring the natural world under our control by destroying it.

Fromm's descriptions of the common escape from freedom is a useful framework to reveal how technologies and digital media exacerbate the desire to shift the burden of something deeper – the existential ownership of responsibility. Freedom and responsibility described by existentialist philosophers is very different from Milton Friedman's neoliberal conception of freedom underlying global capitalism. Neoliberalism is fiercely guarded as the "freedom from" all responsibility and the pathological rejection of all forms of regulation and government bureaucracy. The project of neoliberal freedom demands for zero friction between the desires and whims of the autonomous actor and the world: if I want something, I have it. The virtual world promised by the digital on-demand economy is the frictionless, delightful, pleasurable, "thinking fast" alternative to effortful demands of everyday life.

On the other hand, existential freedom is associated with feelings of boredom, nausea, anxiety and dread, which are hardly qualities embedded into the UX philosophy of today. With God declared dead, the secular age has emancipated the individual but left a spiritual and psychological void of meaning where people can no longer rely on the authority of ethics and values found in an intelligible heaven. Suddenly, way finding around how to be a "good person" is not pre-determined by the ten commandments, but people must be fully responsible for each and every one of their choices." If religion provided the protective bubble within which one could feel safe, modern people are left cold, abandoned, and having to "learn how one goes about existing as a core without a shell." (Sloterdijk, 2011). The unbearable burden of freedom is also to accept that the conditions of a person's life is not solely determined by the self – we are after all "thrown" into the world that creates the conditions of one's agency and privilege (qualities like one's time and place of birth, cultural background, physical able-ness, historical context all impact how one is able to live in the world) – but we must still accept responsibility of our actions, including what we cannot control.

The popularity of Existentialism has gone out of vogue because the philosophy has been confused with pessimistic dead end of post-modern nihilism, a rejection of all meaning in life. However, the anguish of existential responsibility as also a necessary first step to the ethically acting self; insofar as the addict must face the root cause of their affliction in order to discontinue the addiction cycle, the designer must also acknowledge and be continually conscious of the consequences and potential harm of their

work. The root problem persists and is even reinforced by one's avoidance from addressing it. Therefore, to transition to a positive freedom where one can live authentically and responsibly for oneself, one must avoid submission to a higher authority, but leave open space and the discomfort of boredom for generative contemplation and reflection.

The Contempt of Boredom

" We organize all available means for cloud-seeding and storm dispersal in order to have calm in the face of the storm. But this calm is no tranquility. It is only anesthesia; more precisely, the narcotization of anxiety in the face of thinking."
— Martin Heidegger

The modern-day addict is Kierkegaard's pleasure-seeking aesthetic, who sees "boredom as a root of all evil" (Kierkegaard, 2004). Both the aesthetic and the addict's purpose in the world is to maximize pleasure in order to combat and eradicate any experience of boredom. For the addict, the feeling of boredom is the intolerable feeling of deep and profound existential lack; without the comfort of distraction, the addict has to confront the absence of meaning and purpose in their lives. In order to escape this mood, this addict seeks the annihilating pleasure of the present in order to shift the burden of the tyranny and consequence of time.

In my interview with Lisa Pont, a CAMH addiction therapist, she noted that no one is more vulnerable and intolerant of the agony of boredom than a young person, who desperately seeks escape and distraction from boredom through the consumption of gaming and social media. However, the modern war against boredom is distinctly felt by most modern individuals in the society of hyper-stimulation and spectacle. Eric Schmidt, executive chairman at Google promises that through modern technology, "you're never lonely, because your friends are always reachable," and "you're never bored, because there's infinite streams of information and entertainment." (Morozov, 2013) For Kierkegaard, the level to which "habit and boredom have gained the upper hand to such a degree" in modern society is a reflection of its infantile pleasure-seeking drive. Our intolerance of boredom fuels the desire to escape and distract ourselves from the modern day void of meaning through addiction - the feeling of time reduced "into a pure succession of nows" (Heidegger, 1927).

Leslie Paul Thiele in his essay "Postmodernity and the Routinization of Novelty: Heidegger on Boredom and Technology" connects our obsession with technology as a symptom of modern day society's "boredom with the human condition and its worldly limitations." (Thiele, 1997) He reveals how the contemporary lust for novelty and technological innovation as an anesthetizing reaction to what Heidegger names the "basic mood" and disposition of boredom. The novelty of technology has been extremely effective in the creation of a virtual, decontextualized, hyperrealities - where the everyday user can escape into "a different time zone" outside of linear time. Schüll's gambler enters her "machine zone" to experience the pleasurably annihilating flow state, where the addict willingly chooses her dehumanization into an ambiguous conduit within the cybernetic system. Because she holds the contingent human condition in contempt, the addict escapes the world through the comfort of the machine.

For Heidegger, if the mood of boredom is the uncomfortable experience of "drifting here and there in the abysses of our existence like a muffling fog", this boredom also reveals "being as a whole" (Heidegger, 1929). Confronting the discomfort of boredom is anxiety-inducing, but it can also be a powerful antidote to the never-ending churn of technological progress and capitalist productivity. The goal is not to seek permanent escape from our existential groundlessness and the anxiety it engenders. Instead, Heidegger believes that "uniqueness and greatness of human being lies in its capacity to reflectively experience its

ungrounded contingency." (Thiele, 1997) The beauty and dignity of the human condition is that it is free; we are not the automatic cogs in a deterministic mechanistic universe, but we can freely think and choose the worlds that we build.

As long as boredom pushes us to replace our anxiety with technological escape, we distract ourselves through the never-ending cycle of desirability, a constant reordering of an existential hunger that is never satisfied despite our increasing consumption. As Thiel describes succinctly: "Technology is the constant organization of a lack that attempts to replace it with the production and consumption of artifacts and the unrelenting manipulation of the world." (Thiele, 1997). Heidegger challenges people to confront rather than turn way from the sense of "homelessness" that anxiety surfaces. Feelings of anxiety arise when we care about the world and when it matters to us. For example, a good parent becomes concerned for a child because she is invested in the well-being of the child's future, so the parent becomes anxious to take care of and mentor the child in the transition to become a secure and confident adult. However, a well-meaning parent can also become obsessively overprotective of the child, and by shielding the child from the world end up delaying the maturation and advancement of the child into an adult. So I believe that many designers shield their users from the frictions of the world in order to protect them. However, designers can come to *care* for the people that they design for by stewarding flourishing transitions into positive freedom.

Embracing Discomfort in the Crisis of Directionality

To embrace true existential freedom is to accept radical responsibility for one's actions in a world without ready-made answers. This freedom is confusing, disorienting and anxiety-inducing because people have to confront the vacuum of meaning and truth that has been filled by the ideologies of the present. In the midst of the dual crisis of **agency** and **direction**, rather than deferring to the anesthetizing artifices of technological oblivion, a conscious designer is one who embraces the discomfort of contingent and uncertain human condition as a first step to revealing new empowering realities.

So perhaps in direct opposition to the prevailing pleasure-seeking ideologies of the day, designers can ethically design for the human condition by fighting for what is ignored and lost: design for reflection over oblivion and judgment over calculation (Weizenbaum, 1976). Designers need to be fully conscious of their freedom, power and responsibility to ethically design new and more democratic futures. Foucault describes freedom as inherently political and ethical because "being free means not being a slave to oneself and one's appetites, which means that with respect to oneself, one establishes a certain relationship of domination, of mastery, or power, command" (Foucault, 1997). To be free is to be responsible to the self, and also as social beings, to be responsible to others. An ethical commitment is a return to the difficult and effortful, where we have to avoid being closed off and caught up with what is easy and simple. As Heidegger describes, selfhood as something that has to be chosen with resoluteness. Paradoxically, I also believe it requires a leap of faith.

CHAPTER 7
The Leap of Faith to Ethics

The Leap of Faith to Ethics

"Leap of faith, yes, but only after reflection."
— Soren Kierkegaard

The effort of this research journey thus far has been to propose the consciousness-building sense-making journey of Otto Scharmer's Theory U to get to a space of *presencing* (reflection), defined as the "place of inner knowing" in Scharmer's change framework. This existential journey of connecting with the self is the necessary pre-requisite to conscious and emancipatory realizing, which is the ability to act in the world as an ethical agent. We have confessed our addiction and reflected on the root cause; now the liberation from the reinforcing cycles of addiction requires a leap of faith into ethical commitment in the face of uncertainty.

The explication of the ideological "isms" (Technological Solutionism, Neoliberal Capitalism, and Scientism) in Chapters 5 and 6 through the Casual Layered Analysis is an effort to make visible the depth and shape of the unconscious imaginaries that designers are complicit in reinforcing. I propose that the root of our symptomatic addiction to the "fix" of technology is a pathological dependency on certainty that denies the contingency and existential responsibility of human freedom, and also leads to a contempt of the human condition. The conscious designer who commits to the responsibility and power of their work is also one who can question the limitations of their design: rather than deferring to "what is", designers can ask "what can be". The chapter makes recommendations around how designers can responsibly and ethically advocate for the qualities of the human condition that are dismissed by the present-day ideological regimes.

"Matters of Concern": An Ontology of Effortful Negotiation

"God grant us the serenity to accept the things we cannot change, the courage to change the things we can, and the wisdom to know the difference."
— Alcoholics Anonymous

The pathological ideologies of scientism, capitalism and technology are not meeting the needs of a flourishing human society – but are setting up the conditions of addiction: contempt, detachment, alienation and disempowerment. We live in a post-truth world tormented by two alternative narratives: the fact-based modernising world defined by autonomy, control, progress and mastery; currently in conflict with one embracing psychological attachment, entanglement, dependence and care (Latour, 2008). The two camps are locked in conflict: the extremity of ideological certainty reinforces the iconoclastic destruction of all forms of "Enlightenment" authority. In the world of Trump, a knee-jerk distrust of "scientific fact' and rejection of the authority of expertise and intellectualism has led to wide-spread cases of climate science denial and anti-vaccination rhetoric.
To return to the core thesis of the research, the concern is that this is the ripest and most vulnerable landscape for addiction. In times of great instability where the truth, fact, authority and tradition are questioned, it is possible that people will latch on with overwhelming voluntary servitude (Alexander 2008, Fromm 1994) to the addictive promises of technological annihilation. I

don't believe that the technology as the subject of the addiction is the problem per se. Other experiences like food, sex, and entertainment (or measurement, growth and fixes) can bring meaning and joy to our live, but they can also become the subjects of addiction and pathological dependency. The cultivation of a healthy and flourishing relationship between humans and technology requires thoughtfulness, balance and negotiation on the part of the designer. This must be pre-empted by the acknowledgement of potential of harm from the ideologies that designers unconsciously script into the technological artifacts that they design.

Designers have to be passionately committed, rather than dispassionately objective, as the predecessor to ethics. In opposition to the safe certainties of ideology, designers can see the world anew as a continual process of "being" and an **ontology of effortful negotiation**. This ontology of effortful negotiation requires the designer to always be questioning the common-sense validation of the status quo. The designer's embracing of responsibility requires an acknowledgement of the beautiful frictions of life as a necessary condition of designing for other people. Furthermore, designers must doubt and challenge master narratives of progress presented as a linear and determined path in their organizations and within their own field. As Thomas Kuhn and Karl Polanyi demonstrated, scientific and social revolutions do not take place as a clean objective process, but as a product of subjective perspective and messy group negotiation. The false authority of "design science" or "computational design" puts the pressure of a legitimising logical sequence or objective rationality on creative task of problem-solving and complexity. My concern is that modelling design as a computational science risks intellectual hubris and ideological blindness, subjecting the ambiguous territory of human relations to an oppressive cybernetic map.

For designers, to step into the realm of the ethics and politics is inherently ambiguous and messy journey. Contrary to the dogma of Techno-Scientism, the rules of ethics and morals cannot be discovered in the natural world as discrete facts and objects to be measured and ordered. Ethics is an intellectual pursuit concerning how humans can live in the world in relation to ourselves, others, and our environments. It "gathers" the complex entanglement of relationships required in order to make something exist and matter in the world – the "internet" is not a factual object in itself but assembled through a network of billions of people, their relationships and the materialization of those relations, the physical devices and servers that keep it running, and the virtual platforms upon which meaning is made. Rather than neutralizing technology as a medium, designers need to risk the leap of faith into a world where they are responsible for the imagining, negotiation, and shaping of future worlds mediated by technology. Intentionality and decision-making through design are inherently normative: the criteria for choosing why, how or what to design does not come from truth in the sense of what is true or false, but from judgement as a question of what is good or bad.

This is why I believe designers must take a leap of faith into the rich entanglement of ethics. The goal is not to combat the "excessive confidence in ideological arguments posturing as matters of fact" but to cultivate an productive existential attitude that deals with "matters of concern" by *adding* to reality rather than *subtracting* from it (Latour, 2004). Adapted from the original proposal by philosopher Soren Kierkegaard, the ethical leap of faith is to embrace matters that may be intangible and empirically unprovable. This is not as a rejection of science and the natural world but as a "thickening" of it, where we embrace and scaffold human existence with the meaningful human qualities of care, trust, attachment and love that make the human condition free and worthwhile. Rather than holding in contempt or avoiding the world outside of objective reason, designers must commit to the leap of faith from a hyper-individualist materialist world to one of contingent freedom, interconnectedness, and radical responsibility.

This process will require the reclaiming of the slow and the

effortful. Working in modernising systems prioritizing speed and efficiency, designers will be facing the contemptuous pushback of their peers when they advocate for reflection and thought. However, it is in those moments of emptiness and open space, often dismissed as "boring", that new possibilities are born. The tolerance of slowness will be the antidote to the need for the short-term symptomatic fix, where embracing the "delay" in the shifting the burden systems archetype typifying the difficulty in addressing the "actual solution" will generate the reinforcing effects of healing, recovery and regeneration (illustrated in Chapter 8).

Design as a Normative Ethos of Relationality

Silicon Valley's neoliberal preoccupation with the free choice of the individual actor in the "on-demand economy" manifests though its emphasis on negative freedom (or called "freedom from" by Erich Fromm). Autonomy is idealized as the frictionless and unconstrained relationship between the self and her desires, optimized towards the self-interested pursuit of unconscious pleasure and delight. The modern crisis of **agency** is reinforced by the impoverished representation of freedom as Capitalist consumer choice, where designers help users achieve "what they want" and preserve their "freedom" through the abundance of consumption. However, inundated with news about political calamity and ecological disaster, people realize that they are ill-equipped in their "freedom to" act as democratic civilians – there is a widening psychological chasm between one's desire to affect political change, and one's sense of personal power and agency to actually make impact. To support users with this crisis of agency, social media networks like Facebook gives users the easy short-term fix of virtual activism by changing a profile picture and the ability to "join the conversation" through Twitter.

Even more effective is to create a digital "filter bubble" that protects the feeling of control and autonomy for the individual: if your Facebook friends are being downers for posting about climate disaster or the Syrian refugee crisis, the Facebook algorithm can simply filter and generate news that meets the user's need for happiness and comfort as much as possible. However, the drive towards atomized isolation for the promises of individual freedom is resulting in the violent intolerance for the friction of other people's competing world views, needs and desires. As designers design for the "unconscious" unchallenged mind of the user, they participate in the architecture of a user interface where the totalizing design principles of desirability, universality and delight creates a "connected global community" where the anesthetizing blanket of sameness on the surface

hides the isolating filter bubbles that protect "autonomy" of their users. These technological "fixes" alleviate one's mounting sense of anxiety and disempowerment like a drug: the design of the desirable user interface that encourages the user to use the status update to announce her political "wokeness" can be as effective as helping her pretending that Trump doesn't matter at all by filtering news about him out. All of these designs promote user unconsciousness – the goal is to anesthetizes the friction of anxiety and responsibility.

An intrinsic part of designer's ethical leap of faith is to participate in a practice that enacts a social ethos; we don't design tools to be neutral, but to guide others into ways of being-in-the-world and being with other people. We "thrown" into existence as social beings co-habiting with others, where we are responsible for the impact of our actions on other people. Instead of designing out all friction, how can designers support the experience of existential responsibility as a necessarily uncomfortable mode of being in the world that hones self-awareness and informs a relational frame of decision-making, self-awareness and personal responsibility? **Designing for relationality** is not to prefer the uncomfortable and frictionful over that habitual and "easy" way of living– an ethos claiming oppressive friction can be just as fundamentalist as the one claiming constant pleasure. However, designers should and must embrace and design for generative frictions in their technologies that respect and dignify the human condition in its whole.

This means that designers must *consciously* examine and question the dominant design methods principles (such as design for desirability, persuasion, and behaviour as discussed in Chapter 2) and the often invisible systemic ideologies (such as Technological Solutionism, Neoliberal-Capitalism and Scientism) that get scripted into what they design. As designers consciously embrace ethics, they also accept their work not as passive servitude to their companies and the social status quo, but a constant negotiation of what is right and wrong within their practice. If the prevailing designerly (and often controversial) view is that "everyone can be a designer", how can we ensure that these ubiquitous designers are empowered with the capacity for ethical self-reflection?

Radical Design: From Root Cause to Hopeful Action

"Hope should shove you out the door, because it will take everything you have to steer the future away from endless war, from the annihilation of the earth's treasures and the grinding down of the poor and marginal… To hope is to give yourself to the future – and that commitment to the future is what makes the present inhabitable."
— Rebecca Solnit

The ability to move from philosophical reflection to acting in the world is a difficult but vital; it requires the optimism and hope that enables one to escape the nihilism of addiction to the power to change. As per Hannah Arendt's philosophy of praxis, freedom and power is the ability to be able to act genuinely within the public sphere of action. However, the precondition to acting creatively, ethically and consciously is thought. As we move into realm of ethical action, a clear distinction must be made between between optimization of fast thinking" for designers in deference to desirability and metrics (what I called unconsciousness by limitation in Chapter 3) and the kind of ethically "slow thinking" minded action I recommend designers to take.

The historical practice of design has celebrated praxis through the craft of making - designers are experts in materializing form through making. However, this has led to an overreliance on the thoughtless logic of the "design thinking" methods within a technocratic context dominated by model of "lean" and "agile". The business demand to shorten production cycles and optimize for speed, productivity and efficiency also means the act of critical reflection, judgement and thought has been pushed to the side as the wasteful expenditure of resources. The product manager at Twitter described to me the challenges the designer faces when advocating for the deeper and more nuanced user research (like ethnography or participatory design research) in a product team. It is difficult to confront a set of metrics with an aura of scientific objectivity; especially when the speed and convenience of software metrics enables the constant iteration and short-term desirability of the digital product. Furthermore, user research taking place is often limited to the boundary of meeting a profitable business objective, with the directive often being "interview users to find out how we can get them to spend more time on the platform."

Designers avoid responsibility of asking "why" by shifting the burden onto their companies, expecting that the ethical considerations of a "do no evil" culture will think for them. In Eichmann in Jerusalem, Arendt describes how it is the absence of thinking that leads to the unconsciousness and banality of evil, where one refuses the burden of judgement in the circumstances where it is the most needed. Similarly, through the exploration of the dominant ideologies of Technological Solutionism, Neoliberal Capitalism and Techo-Scientism, we see how blind deference to the optimization of system's goals can led to the conditions of addiction, where the passive, commoditized and alienated user is preferred in the relentless pursuit of measurement, growth, and progress. Through an illustration of how designers might be submitting to unconsciousness by worldview, I want to show how designers must reclaim judgment and ethical responsibility in the companies that they work for.

The exposure of the designer's complicity in harmful consequences such as addiction, as well the constraints of their "situatedness" in social and ideological worlds might characterize the research journey thus far as a negative or pessimistic one. However, the emancipation from one's "voluntary servitude" requires a journey of continual self-knowing and self-care. Contrary to the conspicuous displays of "#selfcare" proposed as a way to "treat yourself" to beauty routines and enhance productivity (Kisner, 2017), philosopher Foucault's recommendation for the care of oneself is the effort of knowing oneself. By knowing oneself, one can be free, insofar as "freedom is the ontological condition of ethics… ethics is the considered form that freedom takes when it is informed by

reflection" (Foucault, 1997).

In my interview with designer Thomas Wendt, he described the essence of "radicalism" in design as the effort of getting down "to the root of something" when designers examine problems. However, he notes that the act of finding root causes puts commercial designers in a difficult position; as writer Rebecca Solnit articulated, the conscious commitment to a better future is "what makes the present inhabitable" (Solnit, 2016). The ethical drive to change is uncomfortable and might require the radical action of quitting a toxic environment at times - but transformative action can also be embedded within the tactics of the everyday. Wendt describes this as "a matter of finding cleavages and small amounts of dissent and resistance – it can come out in small everyday ways." In fact, the work of a designer is the ability to recognize the system that one works in, and then maneuver around the obstacles and constraints in order to make it better. As Wendt' colleague says, "if you can't bring yourself to do that, you might consider another profession."

Codification of Ethics

More and more, designers are recognizing the power of their ethical roles: if we are able to recognize the harm we are able to do, then is there cause for an ethical code, a way to reify the ways in which designers are able to make the harmful consequences of their practice visible? The acknowledgement of responsibility and the potential to create harm can be reified through an ethical code as a part of the maturation and professionalization of a field – in other words, design needs to grow up. A mature field develops its own theory and philosophy when it strives to ask deeper questions about the extension and consequences of its impact. Technology and design are fields that have come to disproportionate authority and power in modern times. In most professional disciplines, there is a collective society that sets standards. The Hippocratic oath for doctors is an explicated code of conduct, a social contract that reminds practitioners about their ethical obligations, and makes transparent to the public what is promised from the professionals. This collective promise is how an ethical world can be created or "called forth".

This research doesn't necessarily call for the codification of ethics through another hippocratic oath" for designers, and I'm cognizant of the fact that projects like that have existed in the past. A written oath is useful as another cultural "nudge" set up in the system, a way to remind designers about the consequences of their intentionality. However, I do believe that challenging the collective consciousness (or unconsciousness) of designers is a way to promote more thinking. There are many practicing designers within the field who openly seek to expose its limitations of design thinking, not for the purposes of taking it down, but to encourage designers to be more reflective practitioners and deliberately consider the ethical implications of their practice. Without critical and ethical investigation, designers may create so-called new worlds while embedding the same problematic power structures in their designs, or exacerbate and create new problems that they are not aware of. For example, the design group "Decolonializing Design" demands reflexivity around the kinds of colonial power structures embedded within the design education and profession. In order avoid harmful normalizing practices such as the Border Wall or Brexit passport competitions referenced at the beginning of this research, designers need to embrace the ethical responsibility of their practice.

The addict is able to find comfort in the illusory sense of control, even if "control" is merely the ability to guarantee their own loss: "it's me hurting myself and not someone else (hurting me); I'm the one controlling it." The world of measurement and facts is a struggle for the certainty, and the longing for the firm conviction of safety. So what is it about the modern social condition that engenders such a need to escape reality through addiction?

CHAPTER 8

Liberating New Futures by Ethical Design

Liberating New Futures by Ethical Design

"Of course, many designers are subordinate to domination of the social relations of capitalist production – but – this does not mean that they cannot "make their own history" out of resistance to their circumstances, be they not of their own choosing."
— Tony Fry

"Designers aren't in the artifact business anymore, they're in the consequence business."
— Allan Chochinov

Design Ethics to Steward Technological Care

In the beginning of this research, I talked about the instability and vulnerability engendered by a crisis of agency and a crisis of directionality in the current time. I suspect that designers focus too far on the solving for the latter problem rather than the former. As discussed, the ability for designers to create meaning on behalf of their organizations for users, and to influence how they behave and what they desire, has been inarguably effective. We can acknowledge that designers have the power to be able to exploit and manipulate the most vulnerable people towards addiction and self-destructive harm in pursuit of profit.

I propose that designers need to focus on the crisis of agency, and consider ethical consciousness and democratic empowerment as a vital goal for change. Designing for agency does not only mean to design for the agency of humans, but to also consider the agency of artifacts and things within a broader eco-system that shapes how people live and act in the world. As designers, how might we democratize the ability to allow everyone to create new worlds and sources of individual meaning in their lives? Technology is an integral part of how people live and breath in the world; as addiction therapist Lisa Point said to me, "there is no such thing as abstinence (from technology), the goal is harm reduction and moderation." This is where I believe the designer has a tremendous responsibility: to commit the powerful skills at their disposal to care for and empower people through technology, allowing them overcome their addictive dependencies and become free ethical actors.

The practice of ethics feels like a burden in the modern world because it operates as a direct antidote to the dominant ideologies of speed and progress. But rather than seeing ethics as a limiting constraint, ethics should be considered an inspirational force to allow us to play in the grey area between ideas of what is (the world of facts) and what ought to be (the world of values). Ethics guides judgement, and wisdom in an uncertain and contingent world. Hannah Arendt writes, "What I propose, therefore, is very simple: it is nothing more than to think about what we are doing." (Arendt, 2013) However, the simplicity of Arendt's proposal can be deceiving. Asking the addict to simply "think about the consequences of her actions" in order to overcome her addiction is impossible; it is a tremendously difficult task of an addict whose very addiction limits her capacity to see possible futures.

The ability for designers to be able to obsess about the quality and

details of their craft, their ability to appeal to the individual, to delight, persuade and nudge, can be in the employ of making the very frictionful, effortful and uncomfortable task of overcoming addiction, and confronting freedom and responsibility more bearable. Rather than pacifying the existential malaise of users through the pleasure of digital distractions, designers can create technological artifacts that care for and empower the consciousness of their users to create their own meaning. For example, designers can take inspiration from feminist Virginia Held's ethics of care in focussing around the design for trust, relationality, and responsiveness to needs. The ethics of care is necessarily ambiguous, and makes space for the "compelling moral salience of attending to and meeting the needs of the particular others for whom we take responsibility. (Held, 2006)"

and Returning to Heidegger's warning about the enframing essence of technology he also notes that "where the danger is, grows the saving power also." (Heidegger, 1954) By recognizing the totalizing impulse embedded within the technological frame to control, measure, classify and exploit the world as resource, there is the potential of nurturing a "free" relationship with technology. The acknowledgement of our addiction is also the opportunity for our emancipation from it.

Design as Harm Reduction

Bruno Latour references Peter Sloterdijk's philosophy as an ethical and optimistic way forward for design, where designers can shape the "spheres" enveloping human beings to protect rather than isolate, reveal rather than hide. Design can reconcile the "the entirely different sets of emotions, passions and drives triggered by the two Great Narratives of modernity – the one of emancipation (the official story) and the one of attachment (the hidden one)" (Latour, 2008) through the mindful negotiation of our relationship with technology. Latour continues that "to be emancipated and to be attached are two incarnations of the same event, provided you draw your attention to how artificial atmospheres are well or badly designed." (Latour, 2008) The ways in which we are enveloped and attached through our designs, from the chair that brings us relief from standing, to the homes that protect and shelter us from the natural elements, also free us and relieve us in ways that make our lives better.

Design academic Cameron Tonkinwise in his paper "Ethics by Design, or the Ethos of Things" sees making as a form of ethics (inspired by Elaine Scarry). The act of design is inherently normative because it initiates a better way to live, it reduces the harm of the natural world through the design of a world that is more respectful of the human condition. In addition to ethical mindfulness around the kind of harm that unconscious design can engender, conscious designers can also materialize ethics into their work. Tonkinwise describes the creation of designs "that not only relieves us of existing pains but anticipates possible future pains." (Tonkinwise, 2004) For a product to be truly ethical, it should limit our ability to harm ourselves. This is the difference between being passively ethical (taking our pain away) but also actively ethical (orienting us from harm's way).

Therefore, design can be a form of harm-reduction where a designer can script compassion, care and effort into the very environments that we inhabit. However, designers must bring an

ecological perspective to technological design and embed within them the kinds of qualities that we would nurture in healthy human relationships. Counter to the dispositions of detachment, alienation and disempowerment that drives addiction; how might radical designers manifest the end states of interconnectedness, self-esteem and empowerment through our entanglement with technology? The technologies that we design can take care of, nurture, and empower us the way a family member or friend would in a time of crisis – not just provide an escape, but to listen, and support the healthy resolution and resilience-building journey of your problem.

Design for interconnectedness through compassion

The state of interconnectedness is one where we don't isolate or other ourselves from the world. The philosophy of harm reduction in addiction therapy asks to see the people being treated with compassion, providing an "island of relief" from the pain that they are currently facing (Maté, 2010). In harm reduction therapy, rather than seeing the user as simply as an "addict" in a detached manner, one treats the user with compassion and love. Harm reduction questions the absolute demand for abstinence, which can set a person up for failure and spiral them further into addiction, and instead advocates for meeting people where they are at. This means that one must suspend contempt or judgement of the individual in order to care for them with compassion.

In design, I believe that is a key difference between empathy and compassion. To empathize is to understand the user's experience and to "feel" it. However, to design with compassion means that one might not "know" the experience of the addicted individual, but you treat the person with respect and dignity all the same. Compassion is to translate one's feeling of another person's pain into action, and to take care of an individual. Harm reduction also calls for the non-coercive and non-judgemental provision

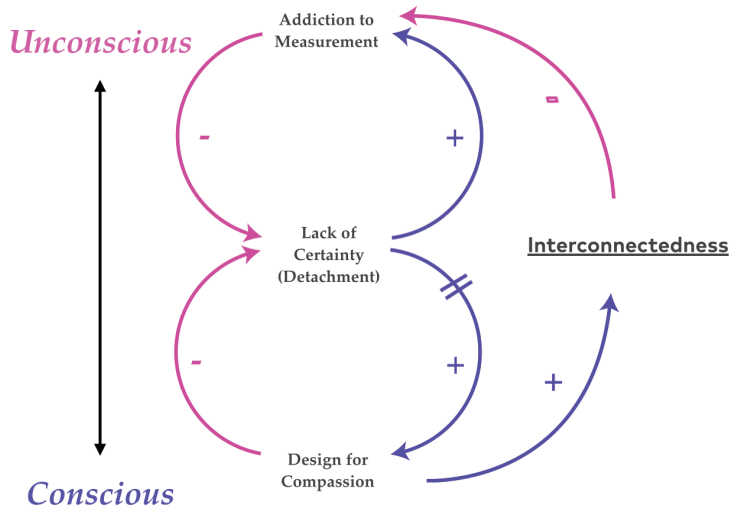


Figure 21. **Design for Interconnectedness**

of resources and and services to those in need. It means that the harm of one person is the overall harm of the health of the community.

As designers, the recognition of the harm that the design of technologies can inflict means that we must consciously bring a harm reduction approach to our work in order to heal the detachment engendered by Techno-Scientism. Rather than seeing users as a set of numbers to be optimized, designers can fight for the humanity of their users in their organizations by advocating for the intimacy of participatory research and user consultation. To recall Schull's slot machine designer who said the times where he talked to the actual gamblers on the floor would "make some of us question why we were doing it," talking to people allows for the frictionful and humanizing moments of user research that reminds organizations to contemplate the harmful consequences of their business. This enhances the possibilities of interconnectedness, described by Charles Eisenstein as the way in which "we are all connected, and our small, personal choices bear unsuspected transformational power. (Eisenstein, 2013)"

Design for self-esteem through care

"Usually, destructive pleasure-seeking behavior arises as an outburst of pent-up desire, and not as the expression of authentic desire."
— Charles Eisenstein, The More Beautiful World Our Hearts Know Is Possible

Designers can also design for end states that are not merely behaviourally visible, but psychologically and socially healthy for the user's sense of self core, acceptance, and self-satisfaction. The question of what people "want" for themselves is deeply complex. As discussed in Chapter 2, Harry Frankfurt makes a distinction between "first order" and "second order" desires where the latter represents one's free will and ability to overcome the first-order desires of the automatic self. If one's "second order" desires indicate a reflexive consciousness that has independent volition around the needs and desires to be intended towards, our second-order desires represent the future person who we strive to be and who we become in the act of it's overcoming. So how might designers design not for "what people want," but "what people want to want."

Astra Taylor describes the challenges of the "want/should" conflict (and the shifting the burden archetype) succinctly, where "the tendency to put off options preferred by our should selves (e.g. saving, eating vegetables) in favor of options preferred from our want selves (e.g. spending, eating ice-cream) is stronger for decisions that will take effect immediately than decisions that will take effect in the future." (Taylor, 2014) To put it in oversimplified terms for the sake of clarity, we become addicts and "slaves to our desires" when our better self no longer has control over the automatic self. However, I would argue that much of our self-esteem comes from our sense of power and agency around being "the best person we can be." In order to know ourselves, we need the time, space and tolerance for generative boredom to allow for the reflexive self to emerge and speak to us.

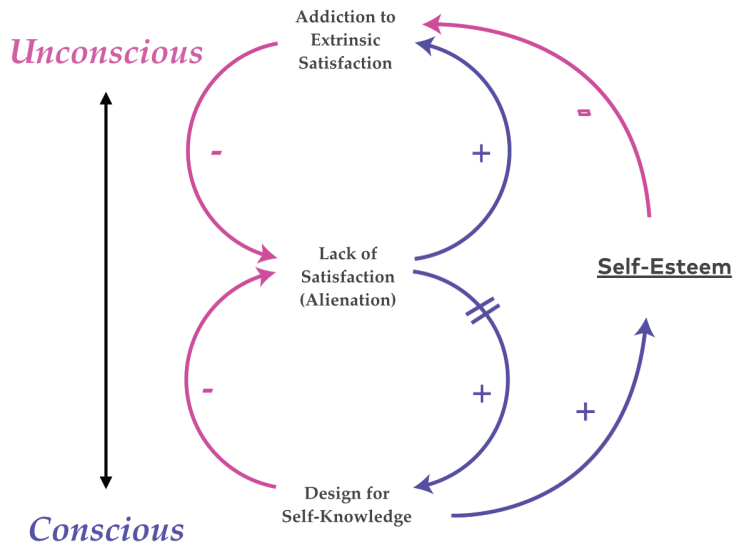


Figure 22: **Design for Self Esteem**

Designers can create the tools that afford for the possibilities of ethics of self-care, where people can come to know themselves. As Foucault describes of the power of self-care, one does not want to become a slave to their appetites, desires and fantasies, but to exercise power over oneself. The positive thing is that designers can support the design of technologies that scaffold user's abilities think and reflect– they can create the mental, physical and cultural "jigs" and affordances that help people create good habits. The hammer allows us to control and exert more force, and mobile devices allow us to extend and offload our minds for memory recollection. The design of jigs extend to the social cultural realm as well, such as the kinds of democratic political bodies, and laws, and community structures that guide meaning in our lives, giving structure to the ways in which people can interact with each other. As opposed to creating technologies that hold humanity in contempt and help users avoid the self through addiction, designers can create the affordances of care and esteem that enable people to become who they want to be.

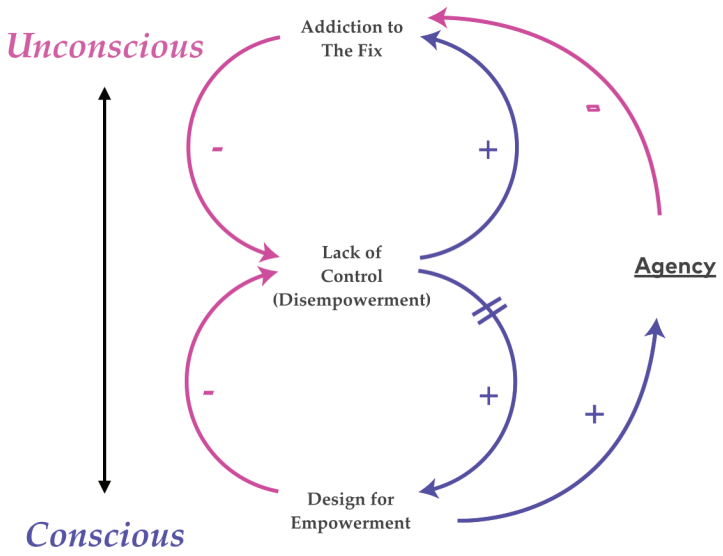


Figure 23. **Design for Agency**

Design for agency through effort

Designers can also create consciousness-building technologies to empower users to create meaning and reflexively engage in their lives. For this, I take inspiration from what Andrew Borgmann calls "focal things", which are artifacts that require effort to draw people into meaningful activities that have value and rewards for their own sake. "Focal things require a certain effort, it is true, but without that effort, the rewards of a meaningful life are lost in the vapid disengagement of the operator of a smoothly functioning machinery (Borgmann, 1984). Focal things and practices like eating a meal, gardening or playing music commands from people a certain level of engagement and situated-ness that runs counter to the way that addictive technological devices alienate people from the world. Instead, focal experiences may seem effortful or burdensome in a culture obsessed with convenience, but they also make life meaningful and fulfilling.

The design principles of "focal things" that empower consciousness often run counter to the dominant principles of delight, frictionless, seamless, invisible design. Consciousness-building design principles may involve designing generative frictions into experiences as ways to help users encounter effort, awareness and difference through uncomfortable alliances. In co-design, these generative frictions can make space for the effortful negotiation of human politics as part of the process of collaboration. Similarly, designing for seamfulness and transparency in interactions empowers users to be able to see and act within the architecture of their interactions.

Design academic Dan Lockton wrote about the need to design agency rather than just for behaviour change. Designers can create services and artifacts that can help people to understand and navigate the complex systems in which they occupy. Designers must first build consciousness in their own understanding of the world before they can ladder up to supporting their user's understanding and enactment of their agency in the world. (See figure 23) So the goal for designers to become more "conscious" in this research is so they can ultimately design for consciousness within those whom they design for.

Figure 24. **Dan Lockton's Designing Agency (Sourced from: http://architectures.danlockton.co.uk/2015/12/24/lets-see-what-we-can-do-designing-agency/)**

1. understand the world

2. understand people's understandings of the world

3. help people understand the world

4. help people understand their agency in the world

5. help people use that agency in the world

Similarly, interface designer Bret Victor advocates for technological tools that can help users explore and explain to themselves. Victor has been looking at ways that technology can amplify human capabilities, and support people's learning and empowerment through affordances and feedback. The goal is not to make experiences easy for users, but to encourage the journey of their learning and growth through interaction. For example, contrary to Facebook's optimization of easy interfaces that fall into the invisibly into the background, other platforms like Adobe's creative software are afford power users the tools to be able to discover learning. The action possibilities that designers can encode into the very material of their artifacts is extremely powerful; insofar as technology can invisibly guide behaviour, it can also encourage conscious learning and powerful ways of thinking. I agree with Victor that good design enables the user to think by making meaning transparent (Learnable Programming). Designers can apply their skills not simply to making making a burdensome world invisible, but to imbue effortful and meaningful moments of interaction that make life worth living for people.

CHAPTER 9
Never a Conclusion

Never a conclusion

"Designing is the antidote to founding, colonizing, establishing, or breaking with the past. It is an antidote to hubris and to the search for absolute certainty, absolute beginnings, and radical departures."
— Bruno Latour

Designers are working at greater heights than they ever have before, with unprecedented access to power and influence. John Maeda is correct; the designer working in the development of new technologies must now design for the needs and desires of the people at scale. Suddenly, the designer has become ethically responsible for the lives and experiences of the millions of people that she designs for.

Having climbed to new heights, the designer stands at the edge of a precipice. Facing the threat of falling into the abyss, the designer will wring her hands and experience the anguish and fear of being so close to harm - or even worse, will distrust herself and the self-destructive possibility of choosing to throw herself over the edge in order to end the anguish. Sartre describes this feeling of dread as the reflective apprehension of the self, where designers have been "raised to a new status and entrusted with a delicate and flattering mission… feel anguish at the thought that [they] will not be capable perhaps of fulfilling it" (Sartre, 1943). To be so close to the precipice forces the designer to become consciously reflective of the possibility of falling, so she must take care to notice all of the stones she might slip on and conscientiously stay far away from the the edge of the path.

Therefore, the "free" designer is also the "responsible" designer, because the designer must take the burden of ownership of her actions and choices. Sartre compares the existential responsibility of conscious choice-making to the experience of the gambling addict, who may one day wake up and choose to make the sincere and difficult decision not to gamble anymore, but then is faced with anguish of having to remake that decision every single day. I believe that there is hope and possibility for designers to choose to ethically steward futures that reduce the harm of and take care of those whom they design for. However, one choice does not guarantee a determined future of ethical acting; instead, ethics is a way of living — it requires a focussed ethos of thoughtful effort, negotiation and reflection.

This research introduced the problem of addiction to technology to reveal the possibilities of overcoming the addictive cycle by ethical design. To avoid surface fixes that reinforce the problem, I proposed that designers must go through an effortful consciousness-building journey (inspired by the Theory U) by diving deep into understanding the root causes. In the first chapter, I set the context of the nature of our addiction to technology, and how and why people may choose "voluntary servitude" to the anesthetizing comfort of their device as a form of escape. I also demonstrated how addiction is a complex and ecological "wicked" problem that operates at multiple scales, where the dependency on our phones manifests as a symptom of underlying of matrix of social conditions and ideological addictions.

Next in Chapter 3, I went deeper to ask how these addictive technological interactions are by unconscious design, being a product of an pathological obsession with growth and profitability within the capitalist system. I challenge the limits of human-centred design by showing how good intentions

around the user's well-being are insufficient. Human-centred designers use the powerful tools of desire, empathy, persuasion, and behavioural manipulation in order to optimize for success defined by the systems that they act in. Absent conscious reflection, unconscious designers reinforce a system that operates against the user's best interests and furthers the addiction of users for attention and profit.

In Chapters 4 and 5, I explore through the Causal Layered Analysis (CLA) how designers are ideologically addicted to social systems, worldviews and myths that limit the possibilities of free and ethical imagining. Designers and their organizations operate within the ideology of Technological Solutionism, which surfaces an addiction to the short-term "technological fix" to all problems and reinforces a passive and powerless relationship with those that hold the reigns of technology. The ideology of Neoliberal Capitalism promises the freedom and autonomy of the individual and the satisfaction of desire through consumption, while merely alienating the human in its relentless pursuit of efficiency and growth. Lastly, the ideology of Techno-Scientism reflects the compulsive need to measure, quantify and calculate the world as an effort to control it, ultimately reducing the world to the totalizing map of cybernetic data. All of these dominant ideologies are dehumanizing and addicting, and must be consciously acknowledged by the designer in order to be freed.

At the bottom of the U in chapters 6, 7 and 8, I identify a root cause of addiction as the human desire to escape from existential freedom and its conditions of anguish, anxiety and dread. Humans stand at the precipice of existence faced with the responsibility of their choices. Instead of submitting to an ideological authority in order to shift the burden of their responsibility, I ask how designers might reflexively design towards boredom, friction and effort instead of away from these experiences of the human condition. In order for designers to become free-thinking and ethical agents, they must take a leap of faith into the messy world of contingency and enact care and concern in their designs. As philosopher Albert Borgmann describes, "the burdensome part of these activities is actually just the task of getting across a threshold of effort. As soon as you have crossed the threshold, the burden disappears" (Borgmann & Wood, 2003). The effortful task of embracing ethics should no longer become a burden for designers, but a focal practice that brings purpose and meaning to the practice.

In summary, this research does not claim a theory of evil in order to explain out the perils of addiction, but reveals the background against which users and designers alike are ideologically addicted and self-anesthetize their responsibility. I hold that for designers to escape the self-reinforcing cycle of addiction, they need to critique the common sense answers that ideology readily offers as the impoverished alternative to critical reflection. They must choose the discomfort of interrogating and challenging the status quo of their organizations and resist the allure of trusting the mission and values of the company. The taken-for-granted values and assumptions that we rely on are not explicitly wrong or evil – otherwise we wouldn't rely on them. However, the harm is usually made to seem banal and invisible by the self-preserving system. So designers must resist and interfere as reflexively radical actors in deeply political socio-technical systems that are determined to stay neutral.

The goal was to dive deep into the root causes of addiction to technology to ask about how we can cultivate a healthier and more flourishing relationship with technology that can manifest humane and sustainable futures. Technology can be empowering and support people in embracing the ambiguity and profound freedom of the human condition. It is by definition the scope of means and tools that can extend human imagination and ability. However, technology can also limit human imagination and reinforce the power imbalances, oppression and discrimination that might be unconsciously (or intentionally) scripted into them without care. The artifacts we create act back on us and become a part of the complex network of actors that we must co-habit with; they can support us with dignity and compassion, or addict us. So we must consciously design with care. To be ethically responsible

for the harm and desires of one's users is not an simple task for designers, but complex and nuanced problems are the work of designers to patiently tease through and untangle. Designers must be radical agents in the design of new ways of being with technology that is stewarded through ethics, thoughtfulness, and compassion.

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