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GAMED AGENCIES: AFFECTIVELY MODULATING OUR SCREEN- AND APP-BASED DIGITAL FUTURES

by **Matthew Tiessen**

In other words: the internet, like a pack of cigarettes or lots of cocaine, lets you just sit in a room and repeatedly trigger reward chemicals that, back in the environment of our evolution, you could trigger only with more work and only less frequently. That's why an internet habit, like a cocaine habit, can reach dysfunctional levels [. . . W]hat the internet does is take lots of things that natural selection designed us to find gratifying and make them much easier to get. (Wright 2012)

Imagine waking up on Monday morning with your web-connected alarm clock awarding your "Early Bird" account 175 points for getting out of bed in less than a minute. Imagine slowly shuffling to the kitchen anticipating that your refrigerator will reward you 55 "Health Superstar" points if you choose the low-fat organic yoghurt as a topping for your breakfast granola. Your shuffling immersion into digital forms of distraction continues when you swipe the finger-grease covered screen of your smartphone to check for messages – the government reminds you that digitally geo-tagging "suspicious activity" on your commute to work will lead to refunds come tax time.

Suddenly, your smartphone vibrates and you anxiously check the status of your Facebook page to see if your comments recommending Google's latest wearable technologies on a friend's "Wall" have received any "Thumbs Up" votes – not to mention whether Google's web-crawlers have credited your bank account given your positive comments about their products (Kalwar et al. 2012; Weidman et al. 2012). Having finished your yoghurt and granola, you trundle to the bathroom to brush your teeth with your digitally-enabled BeamBrush toothbrush[1], which you know will add "Sparkly Smile" badges via your smartphone to your online account if you brush for a solid three minutes. But your favourite part of your morning ritual is your commute to the office in your new hybrid automobile. You experience such a profound thrill watching the digital readouts of your Ford Fusion Hybrid playfully depict growing virtual plants on your instrument panel as a digital reflection of your attempts to drive as efficiently as possible (Zichermann and Cunningham 2011, 78). The fact that driving this way is better for the environment is also a bonus. Upon arriving at your job for a Web 3.0 venture-capital supported startup, you feel great about your morning, about your contributions to society, about games well played, and about your chances of success in your office's new Worker Incentivisation Challenge… (Heisler 2012; Meister 2012).

This hypothetical vignette of future morning rituals gives us a glimpse of a not too distant world in which everyday activities are overrun by digitally mediated gamification – a world in which the embedding of game-like logics and game-like mechanics into the screens and digital devices that mediate between us and our everyday routines adds "value" and a layer of quantification-derived incentives to previously non-game contexts. This is a digitally and visually mediated world in which intrinsic values aren't quite valuable, profitable or affectively desirable enough and so are overcoded and re-coded by icons, graphs, statistics, points, and badges, all in pursuit of access, privileges, productivity, prestige, and feelings of satisfaction. This is a world in which the awarding, redeeming, gifting, and trading of credits, digital achievements, and virtual trophies has become an end in itself.

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1   See: www.beamtoothbrush.com (accessed May 6, 2014).

Increasingly, gamification software applications are embedding digitally and virtually readable metrics into people's everyday lives (Anderson 2012; Juul 2010; Kohler 2010) in order, for instance, to encourage individuals to:

1. Embrace repetitive chores
2. Complete customer surveys
3. Promote socially desirable behaviour (Greitemeyer and Osswald 2010; Harris 2010)
4. Engage more deeply with social media and company websites (Curran 2012)
5. Achieve fitness and health goals (Read and Shortell 2011; Lin et al. 2006; Woods 2012)
6. Contribute to e-learning contexts (Kapp 2012; Tannahill, Tissington and Senior 2012)
7. Support desirable financial behaviour (Shin and Shin 2011; Yamakami 2012)
8. Even make crowd-sourced scientific discoveries (Cooper et al. 2010)

Indeed, the increasing role being played by visual and digital representations of quantified success finds emerging and market-driven modes of digital discipline, such as gamification, encroaching upon and colonising new areas of life that presumably require "added value" in order to be meaningful. Consider the number of "likes" you get on Facebook, the number of followers you have on Twitter, not to mention your salary, your credit score, your investment returns as examples of "values" in a valueless world. This is the very type of meaning making that Nietzsche once diagnosed as typical for our valueless and nihilistic era. For Nietzsche, nihilism was in part a disheartening product of his historical moment, one in which he diagnosed humanity to have become corrupt insofar as it had lost "its instincts". As Nietzsche explains it, a species becomes corrupt "when it loses its instincts, when it chooses, when it prefers, things that will harm it" (Nietzsche 2005, 6). In Nietzsche's view, a life full of value and health must manifest "an instinct for growth, for endurance, for the accumulation of force, of power" since "when there is no will to power, there is decline" (ibid.). Nietzsche, then, was compelled to announce to all who would hear that "nihilistic values, values of decline, have taken control under the aegis of the holiest of names" (ibid.).

While Nietzsche's bombastic admonitions that we have lost our instincts can be regarded as ever so slightly extreme, are they not also illuminating for us as we live through this era of gamified toothbrushes and algorithmically driven online dating platforms?

A future overrun by gamification – whether we deem it nihilistic or not – won't be one in which the rules, conditions, and incentives of the "games" – and of our gamed lives – remain static; rather, by layering high-speed computational capacities on top of digitally enabled everyday objects, context-bound information is able to be fed to game-players in real time, creating adaptive game-spaces capable of modulating gamer behaviour in milliseconds by providing game-based inputs based on the game-player's outputs. In other words, in the hypothetical total-game-space of the future, it won't be us creatively adapting to our games, but our games creatively adapting to us (in real time). Drawing on high-speed algorithmic techniques already at work in the financial world, the gamification of the future is being developed today. The goal of this capital-obsessed development: to develop new forms of digital distraction and sensory stimulation capable of overcoding self-reflexive and, as Nietzsche might say, "instinctual" ways of negotiating life's challenges and choices (Martin 2002).

GAMIFICATION'S PREHISTORY

In the face of the burgeoning gamification explosion, my objective here is to develop a more critical understanding of the affective dimensions of our increasingly mobile and screen-based economy by interrogating some of the social, political, and expanding economic implications of gamification. More specifically, I want to objectify and critically examine two ways gamification is reshaping everyday social relations between humans (and machines):

First, the ways game-like apps and game-based modes of incentivisation are affecting relations between humans and other humans, humans and nonhumans, and even nonhumans and nonhumans as they become an increasingly prominent phenomenon in our digitally mobile and wireless world, infiltrating the realms of business, education, health, public policy, and "global governance" (Pearce 2009; Schreiner 2008).

Second, the idea that while the gamification of everyday life affords societies, businesses, institutions, and communities the ability to encourage and support socially, politically, and economically "desirable" behaviour

(Deterding et al. 2010; Whitson and Dormann 2011), the desirability of organisations attempting to use real-time managerial control in a deliberate attempt to direct "dividualized" (Deleuze 1992) behaviour through affectively charged modulations of desire (Dormann and Biddle 2008) and point-based modes of incentivisation and quantification might not be so desirable after all.

Of course, attempts to control, train, coerce, and compel populations using seductively designed new media platforms are not by any stretch new. We recall that in the 1920s, modern propaganda's founding father Edward Bernays seized on the power of what was the "new media" of the time in order, in his words, to "manipulate" and to "mould" public opinion. Bernays understood then what gamification's proponents are mobilising today – the idea that, through the "mass distribution of ideas" using new media platforms, public opinion could be "moved, directed, and formed" (Bernays 1928, 971). Moreover, Bernays understood that to appropriately "move" people, you needed to define, activate, and in turn fulfil the public's yearnings and desires – their (apparent) longings for success, achievement, recognition, and so on. As he explained:

> Public opinion can be moved, directed, and formed by such a technique. But at the core of this great heterogeneous body of public opinion is a tenacious will to live, to progress, to move in the direction of ultimate social and individual benefit. He who seeks to manipulate public opinion must always heed it. (Ibid., 971)

For Bernays, those wishing to control the individuals within the mass had to gain access to the "great basic motivations" which he described as: "self-preservation, ambition, pride, hunger, love [. . .] imitativeness, the desire to be a leader, [and] love of play". "[T]hese and others", he wrote, "are the psychological raw materials of which every leader must be aware in his endeavour to win the public to his point of view" (Bernays 1935, 83). They are also, of course, the targets of gamification's designers, practitioners, and boosters. Indeed, it's interesting just how apparently natural and intuitive this logic of affectively modulated control and persuasion is to gamification's practitioners whose ideas and strategies could be regarded as being at the forefront of current academic thought insofar as they are, in many respects, premised on

thinking "the human" as a potential cyborg (Hayles 1999), as an affectively motivated "desiring machine" (Deleuze and Guattari 1987), and as one agential actor among others (Latour 2005; Thrift 2008).

Later on, Marshall McLuhan echoed Bernays' promise of mediated publics in his famed Playboy interview from 1967 when he noted that through the use of a pre-iPhone screen-based technology the public could be manipulated and affectively modulated through the power of sensorial – primarily visual – stimulation. As McLuhan explained: "There's nothing at all difficult about putting computers in the position where they will be able to conduct carefully orchestrated programming of the sensory life of whole populations" (McLuhan 1969, 19).

Similarly, in the early 1990s Deleuze was warning us of the dark side of digital quantification. In his "societies of control" article, he warned us that future modes of discipline and control would be, at once, more focused on targeting the individual (consider, for instance, your debt score or credit rating) and more capable of dividing us up into numerical strata – of dividualizing us. As he explains:

> The disciplinary societies have two poles: the signature that designates the individual, and the number [. . .] that indicates his or her position within a mass. This is because the disciplines never saw any incompatibility between these two, and because at the same time power individualises and masses together, that is, constitutes those over whom it exercises power into a body and molds the individuality of each member of that body. (Deleuze 1992, 5)

For Deleuze, digital forms of dividualising quantification would offer "power" the means to control subjects using a light – almost imperceptible – touch. Digital "control mechanisms" – as he called them – would form a system of "variable geometry the language of which is numerical". These control mechanism would work using modulation, they would be responsive to subtle changes, to invisible variations. He explains that the controlling mechanisms of the future (of our present) would operate almost intuitively, "like a self-deforming cast that will continuously change from one moment to the other, or like a sieve whose mesh will transmute from point to point" (ibid., 4).

More recently, in the late 1990s, techno-sceptics like the artist/activist group the Critical Art Ensemble were feverishly warning us of the dangers of our post-visual data-bodies and the ways they will – in the future – begin to define what our fleshy selves are capable of. As they explained in 1997:

> With the virtual body came its fascist sibling, the data body – a much more highly developed virtual form, and one that exists in complete service to the corporate and police state [. . .] What brought the data body to maturity is the technological apparatus. With its immense storage capacity and its mechanisms for quickly ordering and retrieving information, no detail of social life is too insignificant to record and to scrutinize. From the moment we are born and our birth certificate goes online, until the day we die and our death certificate goes online, the trajectory of our individual lives is recorded in scrupulous detail [. . .] The desire of authoritarian power to make the lives of its subordinates perfectly transparent achieves satisfaction through the data body. Everyone is under permanent surveillance by virtue of their necessary interaction with the marketplace. Just how detailed data body information actually may be is a matter of speculation, but we can be certain that it is more detailed than we would like it to be, or care to think [. . .] But the most frightening thing about the data body is that it is the center of an individual's social being [. . .] We are powerless to contradict the data body. Its word is the law [. . .] The corporate intention for deploying this technology (in addition to profit) is so transparent, it's painful. The only possible rejoinder is: 'Have you ever been at a work station... 24 hours a day, 365 days a year? You will'. Now the virtual sweat shop can go anywhere you do! (Critical Art Ensemble 1997, 145–146)

For the Critical Art Ensemble, the emergence of the "virtual" digital platform created the conditions for the immaterial expansion of capital-driven ways of being, thinking, and doing. The Internet, in their view, would emerge as a computerised tool for the powers that be who were – as they are now – intent on maintaining, quite literally, business as usual. In their view, "the most significant use of the electronic apparatus is to keep order, to replicate dominant pancapitalist ideology, and to develop new markets" (ibid., 141). In the face of this imminent future (our NSA-surveilled present [Gellman, Soltani

and Peterson 2013; Risen and Poitras 2013]), they urged anyone who would listen that the "need for Net criticism certainly is a matter of overwhelming urgency". Critical Art Ensemble acknowledges that "a number of critics have approached the new world of computerised communications with a healthy amount of scepticism". They fear that "their message has been lost in the noise and spectacle of corporate hype – the unstoppable tidal wave of seduction has enveloped so many in its dynamic utopian beauty that little time for careful reflection is left" (ibid., 139). Their hyperbolic observations might even give us pause by encouraging us to ask: If that was then, what about now?

Well, for one thing we could observe that social media platforms, the touch screens and mobile technologies that help enable them, and emerging gamification protocols and databases are valuable not because they involve data, statistics, tweets, and desires expressive of the general experience of being alive, but because this data produces a useful resources for organisation whose professional interest is in surveilling us once we "go public", as Greg Elmer (2013) has observed. Moreover, as is increasingly becoming clear, once we've rendered ourselves transparent to the digital apparatus, our desires are parsed before being fed back to us in a virtuous – and seemingly benign – loop of desiring rewards and rewarding desires.

GAMIFICATION HYPE-NOSIS

But let's look a bit more closely at gamification today – as a market, a promise, a quasi-religion, an incentivisation tool, a way to manufacture "better" human beings… Over the past few years, gamification has been taking the digital – and especially the mobile – world by storm, promising at once to increase bottom lines, promote healthy behaviour, while extending and deepening social as well as virtual relationships. The hype surrounding gamification has generated a certain level of debate about its merits, its relationship to gaming-culture more generally, whether it works at all, etc. Indeed, "real" gamers – those who use consoles like the just released Xbox One or PlayStation 4 – are embarrassed by the gamification upstarts who want to associate with them. But whether or not gamification lives up to the hype, its strategists and proponents persist in their attempts to embed game-based logics into more and more of the screens and devices that define our everyday (digital) lives.

But the hype surrounding gamification was – and is – certainly real, and occasionally breathless. For example, gamification guru Jane McGonigal has insisted that "reality is broken" and that digital games can "save the world" (2011). Similarly, game designer Jesse Schell wondered in a recent TED talk whether using "game-like external rewards" can "make people lead better lives?" (2010). The scale of today's gamification industry is enormous and growing; for example, in 2011 the profits from social gaming company Zynga – which recently held its initial public offering (IPO) – made up 12% of Facebook's entire revenue stream prior to Facebook's own controversial IPO (i.e. of Facebook's $3.71 billion in sales in 2011, Zynga contributed $445 million) (Geron 2012). Indeed, gamification-based companies such as Bunchball. com, Badgeville.com, and Bigdoor.com are helping global corporations like Adobe, eBay, Intel, ABC, CBS, ESPN, NBC, CISCO, Microsoft, Toyota, and Ford connect digitally with their customers through mobile communication technologies (smartphones, tablets, laptops, etc.), "Corporate Game Design" and "Emotion Hacking" by embedding game-driven incentives into, for example, employee training programs, financial services websites, shopping websites, enhanced loyalty programmes, social networks, e-surveys, call-centre protocols, and market research. Other gamification companies such as Strava and Fitocracy (more about Strava later) turn fitness into a game by encouraging users to upload GPS data onto the web from their mobile devices where it is data-mined and quantified in order to provide users with feedback and graphs that not only contain information about their individual athletic performances and newly "quantified selves" (Wolf 2010), but help place their performances among an athletic hierarchy of digitally equipped athletes. Additionally, e-learning companies such as the Canadian company Desire2Learn are applying game-based strategies to the field of learning management systems, embedding digital technologies into "real" and "virtual" classrooms, and enabling instructors at, for example, the University of Waterloo, to make "data-driven decisions" in order to design, customise, develop, and deliver online "social learning" experiences capable of catering to students at a "granular" level across mobile platforms by allowing them to collaborate virtually while being data-mined and assessed by their teachers (Desire2Learn 2011).

The basic strategic motivation driving gamification's designers is to provide rewards for repetitive tasks at regular and random intervals in order

Will we live in a "gamocracy" where we're the ones being played?

to allow for the perception of constant improvement, thus providing an *addictive motivation* for gamers to keep playing the game (Wills 2009). Essentially, the thinking goes, if gamification can provide the right set of data-driven and sensorial stimuli, our brains will treat software-based digital representations like a drug, potentially resulting in the Pavlovian responses marketers dream about. The potential result of the gamification of everyday life is that, over time, more and more daily events and professional activities will develop a sort of virtual "achievement layer" that primarily reflects gamers' abilities to fulfil their desire to click buttons, remain distracted, follow guidelines, achieve top scores, and make it to the next level. Indeed, the ideal gamification scenario, we might say, would result not so much in gamers playing games as it would in gamers being played by their games. It would also result, let's not forget, in digital metadata pertaining to the patterns of everyday life to be uploaded and instrumentalised in new and powerful ways, resulting in the creation of yet more information-driven markets capable of absorbing the seemingly endless flows of liquidity flowing from central bank "printing presses".

As I've already suggested, given the unrelenting process of gamifying everyday life, gamification has its critics. For instance, Ian Bogost, a prominent game-theorist, describes game-based digital strategies – particularly those designed to sell merchandise and manipulate customers – as "exploitationware" (Bogost 2011) due to the ways these games prey on affective and emotional needs for quantifiable achievement and re-value "play" as a mere product promotion strategy. Moreover, Bogost – also an object-oriented ontology philosopher (Bogost 2012) – cautions us about the potential for life in a future gamocracy to become one in which the relationship between human, machine, and digital agency becomes increasingly blurred. As he explains: "When people act because incentives compel them toward particular choices, they cannot be said to be making choices at all" (Bogost 2010).

Indeed, it is this "beyond the human", or posthuman (Barad 2003; Braidotti 2013; Hayles 1999), dimension of gamification that is perhaps most interesting and will become increasingly worthy of critical examination, particularly as attempts at algorithmic and digitally modulated control intersect with social, legal, moral, and ontological conventions that regard the so-called "human" as the locus for agency, decision-making, and desire.

As has already been demonstrated and critiqued, 21st-century digital algorithms and computational capacities are increasingly being used to analyse and represent complex streams of what's known as "big data" in order to attempt to pre-emptively modulate, customise, and control the (actual and virtual) world before we encounter it (Andrejevic 2011; Best 2010; Bratich 2006; Crang and Graham 2007; Elmer 2003; Elmer and Opel 2006; Fuchs et al. 2012; Lyon 2001; Lyon 2003; Massumi 2007). Gamification, then, has the potential to short-circuit or pre-empt our desires by being better and faster at being contextually aware of a world increasingly overlayed with – and determined by – the data we generate as we go about our lives (not to mention the data that has already been accumulated and mined from the past). That is, the persistent extension of gamification and achievement-driven metrics of value has the potential to result in a corresponding decrease in the once "inherent" value of things like health, education, friendship, and community-building insofar as they will become increasingly obscured or replaced by quantified metrics and credits such that the act of choosing and making everyday decisions is pre-emptively short-circuited or modulated (Deleuze 1992) by not only extra-subjective motivations, but also by nonhuman algorithms whose secret "understanding" (Tiessen and Seigworth 2012) of desires is perpetually being discerned and translated into computer-readable binary code and other virtual quanta (Galloway 2004; Munster 2011).

OVERCODING THE OUT OF DOORS: MOUNTAIN BIKING, ROAD CYCLING, AND STRAVA

At this point, in the spirit of peering into the darker sides of the digital, I want to shift gears a bit to focus on some of the very tangible effects of the overlaying of gamified logics onto previously non-game contexts, namely mountain biking and road cycling. I want to focus on these sporting activities and some of the ways they intersect with a gamification-facilitating web platform named Strava, in order to examine what can happen when digital data comes to overcode the immersive continuity of what, in this case, we might describe as the thrill-seeking pursuit of flow, adrenalin, speed, and encounters with "nature". Indeed, as an avid mountain biker, the implications of the digital overcoding of the woods, mountains, and trails is a topic that is of great interest to me.

As you may know, mountain biking is usually an activity that allows us to encounter the beauty of our natural environments while, at the same time, seeking out spills, thrills, physical challenges, and – when done with others – social camaraderie. This changes on the race course, but this description is fairly comprehensive. This bucolic bubble, however, is increasingly being burst by the adoption by mountain bikers of mobile GPS units that allow them to visually map their ride and digitally data-mine their adventures before uploading the metadata generated by the ride to websites like Strava.com (2009) where this data is pooled with the data – the heart-rates, the distances, the speeds, the caloric output, the number of rides, times, and biometric data – of other riders. The experience of mountain biking, then, is increasingly being quantified – and overcoded. This quantification, in turn, has led to measurement and measurement, in turn, has led to comparison, and comparison has led to competition where it didn't exist before. Competition is then catalogued, represented, and shared by Strava, which gives riders the ability to transform even solo rides into "social" – as in, social media – experiences. The thing is, though, riders are finding that the virtual and digital social spaces created by Strava are feeding back into the analogue spaces of the mountain bike trails in not so desirable ways. Indeed, increasingly riders are commenting that their rides are becoming less bucolic, less social, less sensorially immersive and satisfying as those riders pursuing virtual trophies or seeking to become "KOMs" (Kings of the Mountain on Strava) in order to impress their online followers and "friends", holler at fellow riders to "Get outta the way! Strava! Strava!" as they ride past at a pace that turns the once immersive and flow-centric experience into nothing but a statistically focused blur. As Tom Vanderbilt recently wrote in Outside Magazine, Strava has led to the quantified self-equipped cyclist having to ask herself or himself: "Is the unexamined ride worth riding?" (Vanderbilt 2013).

According to Strava's "About" page, the website and gamification platform grew out of the needs of its digitally connected designers to create quasi-social athletic experiences in the face of their professional lives which were exceedingly busy and usually only allowed for solo cycling excursions. They explain:

> We missed the sense of camaraderie and friendly competition that drove us to achieve our best through training with others. We envisioned Strava

as the means to put our workouts and races into context. We call that *social fitness*. Today, Strava lets athletes all over the world experience social fitness – sharing, comparing and competing with each other's personal fitness data via mobile and online apps. Currently focused on the needs of avid cyclists and runners, Strava lets you track your rides and runs via your iPhone, Android or dedicated GPS device to analyze and quantify your performance. Strava makes fitness a social experience, providing motivation and camaraderie even if you're exercising alone. (Strava 2013)

Obviously, the intentions of Strava's designers are more or less straightforward and noble ones. But like gamification itself, Strava's infiltration of cycling's ranks – not to mention its disturbance of the once less competitive and more casual and flow-centric thrill-seeking of mountain biking – has been the target of some unsubtle critique by those with a pulpit in the mountain biking world. Author Seb Kemp's rant from *Bike Magazine* – an influential mountain bike publication – sums up the situation without pulling any punches. In his view:

> The Strava app helps you become more and more of a desperate loser by creating an imaginary world where every moment on your bicycle can be turned into a race. Not against yourself, but against other people. Other imaginary people. Each part of your ride becomes a series of timed sections where you compete with the virtual world for the title of KOM (King Of the Mountain). It is sort of like internet gaming except the people that play Strava actually go outside.
> Anyway, Strava has become very popular in a very short amount of time, which goes to show that not that many people actually ever enjoyed riding their bike. Strava gave internet [surfers] a reason to grin and bare the drudgery of riding because now they could be in contact with their internet friends and, better still, compete with them for an imaginary title. (Kemp 2012)

But Strava's gamified effects on non-digital space and time go beyond its ability to transform random stretches of road or trail into time-trail-like segments of a quasi-virtual or quasi-actual race course. In fact, Seb Kemp's commentary in Bike Magazine is a response to another story involving, in

this case, Strava, virtual competition, and death – what has become known as "Stravacide". The virtual recognition afforded by Strava is a gamified reward in recognition of the speed cyclists can achieve while passing through given sections of road and trail. The faster, the better! To paraphrase media theorist Paul Virilio: "In the world of Strava, speed is power" (Virilio 2006). Of course, KOM (King of the Mountain) recognition does not only go to those with the best climbing speeds, it also gets bestowed upon those capable of the quickest descents. For one cyclist – William K. Flint, Jr. – the overlay of digital incentives onto his everyday life while out for a ride in the hills above Berkeley, California proved fatal (Darlington 2013). Flint, an avid Strava user, twitterer, and computer coder, died on a descent after running into a car at the intersection of Grizzly Peak Blvd. and South Park Drive. It seems Flint's King of the Mountain time on that stretch had just been beaten by some other unnamed and faceless virtual nemesis, and in an attempt to reclaim the crown he crashed into a sport utility vehicle driven by a mother and her daughter and met his demise (McLaughlin 2012).

But what's perhaps most interesting about this tragic situation – this tragic conflagration of virtual and actual environments and desires – is what happened next: Flint's parents decided to sue Strava – which they claimed had developed a sort of nonhuman agency in excess of that of its user, William K. Flint – and was now at fault for "failing to warn cyclists competing in KOM challenges that the road conditions were not suited for racing" and "encouraging dangerous behaviour" (Bicycle Retailer 2012). According to Flint's parents, Strava failed "to host a safe competition" (ibid.). By extension, the Flints' legal argument can be seen as representing the nascent emergence among an increasingly digitally and algorithmically modulated public of what will become a more widespread – and ontologically significant (Bennett 2010; Bogost 2012; Pickering 1995) – notion: that when faced with the right digital and algorithmic architecture, humans will be unable to resist its plans for them. In this case, of course, the plan was to go faster and farther at any cost. What this case objectifies and even foreshadows, is that popular understandings of the lines that distinguish between human agency and the "agency" of computer code and digital devices will increasingly become blurred and destabilised in the popular imagination in the not too distant future, giving rise to ontological and existential questions and complexities that will increasingly challenge legal, political, and philosophical paradigms –

all thanks to the affectively enticing lure of online achievements and the perpetual pursuit of virtual supremacy and digitally designed deliverance.

BIBLIOGRAPHY

Anderson, Janna. 2012. "Gamification and the Internet: Experts Expect Game Layers to Expand in the Future, with Positive and Negative Results." *Games for Health Journal* 1(4): 299–302.

Andrejevic, Mark. 2011. "The Work That Affective Economics Does." *Cultural Studies* 25(4–5): 604–620.

Barad, Karen. 2003. "Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter." *Signs: Journal of Women in Culture and Society* 28(3): 801–831.

Bennett, Jane. 2010. *Vibrant Matter: A Political Ecology of Things*. Durham: Duke University Press.

Bernays, Edward. 1935. "Molding Public Opinion." *Annals of the American Academy of Political and Social Science* 179: 82–87.

Bernays, Edward. 1928. "Manipulating Public Opinion: The Why and The How." *American Journal of Sociology* 33(6): 958–971.

Best, Kirsty. 2010. "Living in the Control Society: Surveillance, Users and Digital Screen Technologies." *International Journal of Cultural Studies* 13(1): 5–24.

Bogost, Ian. 2012. *Alien Phenomenology, or, What It's Like to Be a Thing*. Minneapolis: University of Minnesota Press.

Bogost, Ian. 2011. "Persuasive Games: Exploitationware." *Gamasutra*, May 3. http://www.gamasutra.com/view/feature/6366/persuasive_games_exploitationware.php.

Bogost, Ian. 2010. "Persuasive Games: Shell Games." *Gamasutra*, March 3. http://www.gamasutra.com/view/feature/132682/persuasive_games_shell_games.php.

Braidotti, Rosi. 2013. *Posthuman*. Cambridge: Polity.

Bratich, Jack. Z. 2006. "Nothing is Left Alone for Too Long: Reality Programming and Control Society Subjects." *Journal of Communication Inquiry* 30(1): 65–83.

Cooper, Seth, Firas Khatib, Adrien Treuille, Janos Barbero, Jeehyung Lee, Michael Beenen, Andrew Leaver-Fay, David Baker, Zoran Popović and Foldit Players. 2010. "Predicting Protein Structures with a Multiplayer Online Game." *Nature* 466: 756–760.

Crang, Mike and Stephen Graham. 2007. "Sentient Cities: Ambient Intelligence and the Politics of Urban Space." *Information, Communication & Society* 10(6): 789–817.

Critical Art Ensemble. 1997. *Flesh Machine*. New York: Autonomedia.

Curran, Kevin and Roisin Lautman. 2012. "The Rise of Gaming on Social Networks." I*nternational Journal of Social Networking and Virtual Communities* 1(1).
http://iaesjournal.com/online/index.php/VirCom/article/view/477.

Darlington, David. 2013. "The Strava Files." *Bicycling* November: 60–70, 86–91.

Deleuze, Gilles. 1992. "Postscript on the Societies of Control." *October* 59: 3–7.

Deleuze, Gilles and Felix Guattari. 1987. *A Thousand Plateaus: Capitalism and Schizophrenia*. Minneapolis: University of Minnesota Press.

Desire2Learn. 2011. "News." Accessed December 1.
http://www.desire2learn.com/news/2011/Desire2Learn-Announces-Release-of-Newest-Enhancements-to-Desire2Learn-Learning-Suite/.

Deterding, Sebastian, Staffan Bjork, Stephan Dreyer, Aki Jarvinen, Ben Kirman, Julian Kucklich, Janne Paavilainen, Valentina Rao and Jan-Hinrik Schmidt. 2010. *Social Game Studies: A Workshop Report*. Accessed March 27, 2014.
http://socialgamestudies.org/report.

Dormann, Claire and Robert Biddle. 2008. "Understanding Game Design for Affective Learning." *In Future Play 2008: Proceedings of the 2008 Conference on Future Play: Research, Play, Share*, 41–48. New York: ACM.

Elmer, Greg. 2013. "IPO 2.0: The Panopticon Goes Public." *MediaTropes* 4(1): 1–16.

Elmer, Greg. 2003. "A Diagram of Panoptic Surveillance." *New Media & Society* 5(2): 231–247.

Elmer, Greg, and Andy Opel. 2006. "Surviving the Inevitable Future. Preemption in an Age of Faulty Intelligence." *Cultural Studies* 20(4): 477–492.

Flint, William, K. and Kathleen B. Flint. 2012. "William K. Flint et al vs. Strava, Inc." Accessed March 27, 2014.
http://www.bicycleretailer.com/sites/default/files/downloads/article/StravaSuit.pdf.

Fuchs, Christian, Kees Boersma, Anders Albrechtslund and Marisol Sandoval, eds. 2012. *Internet and Surveillance: The Challenges of Web 2.0 and Social Media*. New York: Routledge.

Galloway, Alexander. R. 2004. *Protocol: How Control Exists After Decentralization*. Cambridge: MIT Press.

Gellman, Barton, Ashkan Soltani and Andrew Peterson. 2013. "How We Know the NSA Had Access to Internal Google and Yahoo Cloud Data." *Washington Post*, November 4. Accessed December 1, 2013.
http://www.washingtonpost.com/blogs/the-switch/wp/2013/11/04/how-we-know-the-nsa-had-access-to-internal-google-and-yahoo-cloud-data/.

Geron, Tomio. 2012. "Zynga Makes up 12% of Facebook's 2011 Revenue." *Forbes*, January 2.
http://www.forbes.com/sites/tomiogeron/2012/02/01/zynga-makes-up-12-of-facebooks-2011-revenue/.

Greitemeyer, Tobias and Silvia Osswald. 2010. "Effects of Prosocial Video Games on Prosocial Behavior." *Journal of Personality and Social Psychology* 98(2): 211–221.

Harris, Jonathan Daniel. 2010. "The Zynga-Haiti Controversy: A Tale of Two Campaigns." *HuffingtonPost.com*, May 4. Accessed December 1, 2013.
http://www.huffingtonpost.com/2010/03/04/the-zynga-haiti-controver_n_485919.html.

Hayles, N. Katherine. 1999. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. Chicago: University of Chicago Press.

Heisler, Katherine. 2012. "Let's Play: To Keep Gen Y Staffers, Gamify Their Work." *Forbes*, August 5.
http://www.forbes.com/sites/ciocentral/2012/07/03/lets-play-to-keep-gen-y-staffers-gamify-their-work/.

Juul, Jesper. 2010. *A Casual Revolution: Reinventing Video Games and Their Players*. Cambridge, MA: MIT Press.

Kalwar, Santosh Kumar, Kari Heikkinen and Jan Porras. 2012. "Conceptual Framework for Assessing Human Anxiety on the Internet." *Procedia – Social and Behavioral Sciences* 46: 4907–4917.

Kapp, Karl M. 2012. *The Gamification of Learning and Instruction: Game-Based Methods and Strategies for Training and Education*. New York: John Wiley & Sons.

Kemp, Seb. 2012. "Strava, Sexy Botnets, and Suicide Cycling." *Bike Magazin*.
http://www.bikemag.com/news/news-of-the-tweet-virtually-real/.

Kohler, Chris. 2010. "Farm Wars: How Facebook Games Harvest Big Bucks." *Wired*, May 19.
http://www.wired.com/gamelife/2010/05/farm-wars/all/1.

Latour, Bruno. 2005. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.

Lin, James, Lena Mamykina, Silvia Lindtner, Gregory Delajoux and Henry Strub. 2006. "Fish'n'Steps: Encouraging Physical Activity With an Interactive Computer Game." In *UbiComp 2006: Ubiquitous Computing. Lecture Notes in Computer Science*, edited by Paul Douris and Adrian Friday, 261–278. Berlin: Springer.

Lyon, David. 2003. *Surveillance as Social Sorting: Privacy, Risk, and Digital Discrimination*. New York: Routledge.

Lyon, David. 2001. "Facing the Future: Seeking Ethics for Everyday Surveillance." *Ethics and Information Technology* 3(3): 171–180.

Martin, Randy. 2002. *Financialization of Daily Life*. Philadelphia: Temple University Press.

Massumi, Brian. 2007. "Potential Politics and the Primacy of Preemption." *Theory & Event* 10(2).
http://muse.jhu.edu/login?auth=0&type=summary&url=/journals/theory_and_event/v010/10.2massumi.html.

McGonigal, Jane. 2011. *Reality is Broken: Why Games Make Us Better and How They Can Change the World*. New York: Penguin Press.

McLaughlin, Erin. 2012. "Negligence Suit Filed Against Cycling Website Over Accidental Death." *ABC News*, June 19. Accessed December 1, 2013.
http://abcnews.go.com/US/family-suing-website-cyclists-death/story?id=16605785.

McLuhan, Marshall. 1969. "The Playboy Interview: Marshall McLuhan." *Playboy Magazine* March.
http://www.cs.ucdavis.edu/~rogaway/classes/188/spring07/mcluhan.pdf.

Meister, Jeanne. 2012. "Gamification: Three Ways To Use Gaming For Recruiting, Training, and Health & Wellness." *Forbes*, May 21.
http://www.forbes.com/sites/jeannemeister/2012/05/21/gamification-three-ways-to-use-gaming-for-recruiting-training-and-health-amp-wellness/.

Munster, Anna. 2011. "From a Biopolitical 'Will to Life' to a Noopolitical Ethos of Death in the Aesthetics of Digital Code." *Theory, Culture & Society* 28(6): 67–90.

Nietzsche, Friedrich. 2005. *The Anti-Christ, Ecce Homo, Twilight of the Idols*. New York: Cambridge University Press.

Pearce, Celia. 2009. *Communities of Play: Emergent Cultures in Multiplayer Games and Virtual Worlds*. Cambridge, MA: MIT Press.

Pickering, Andrew. 1995. *The Mangle of Practice: Agency and Emergence in the Sociology of Science. The American Journal of Sociology* 99(3): 559–589.

Read, J. Leighton and Stephen M. Shortell. 2011. "Interactive Games to Promote Behavior Change in Prevention and Treatment." *JAMA: The Journal of the American Medical Association* 305(16): 1704–1705.

Risen, James and Laura Poitras. 2013. "NSA Report Outlined Goals for More Power." *The New York Times*, November 22. Accessed December 1, 2013.
http://www.nytimes.com/2013/11/23/us/politics/nsa-report-outlined-goals-for-more-power.html.

Schell, Jesse. 2010. "When Games Invade Real Life." *TED*, April.
http://www.ted.com/talks/jesse_schell_when_games_invade_real_life.html.

Schreiner, Keri. 2008. "Digital Games Target Social Change." *IEEE Computer Graphics and Applications* 28(1): 12–17.

Shin, Dong-Hee and Yoon-Joo Shin. 2011. "Why Do People Play Social Network Games?" *Computers in Human Behavior* 27(2): 852–861.

Strava. 2013. "About Us." Accessed December 1.
http://www.Strava.com/about.

Tannahill, Nick, Patrick Tissington and Carl Senior. 2012. "Video Games and Higher Education: What Can 'Call of Duty' Teach our Students?" *Frontiers in Educational Psychology* 3.
http://www.frontiersin.org/Journal/10.3389/fpsyg.2012.00210/full.

Thrift, Nigel. 2008. *Non-Representational Theory*. New York: Routledge.

Tiessen, Matthew and Gregory Seigworth. 2012. "Mobile Affects, Open Secrets, and Global Illiquidity: Pockets, Pools, and Plasma." *Theory, Culture & Society* 29(6): 47–77.

Vanderbilt, Tom. 2013. "How Strava Is Changing the Way We Ride." *Outside*, January 8.
http://www.outsideonline.com/fitness/biking/How-Strava-Is-Changing-the-Way-We-Ride.html.

Virilio, Paul. 2006. *Negative Horizon: An Essay in Dromoscopy*. London: Continuum.

Weidman, Aaron C., Katya C. Fernandez, Cheri A. Levinson, Adam A. Augustine, Randy J. Larsen and Thomas L. Rodebaugh. 2012. "Compensatory Internet Use Among Individuals Higher in Social Anxiety and its Implications for Well-Being." *Personality and Individual Differences* 53(3): 191–195.

Whitson, Jennifer R. and Claire Dormann. 2011. "Social Gaming for Change: Facebook Unleashed." *First Monday* 16(10).
http://firstmonday.org/ojs/index.php/fm/article/view/3578/3058.

Wills, David and Stuart Reeves. 2009. "Facebook as a Political Weapon: Information in Social Networks." *British Politics* 4: 265–281.

Wolf, Gary. 2010. "The Data-Driven Life." *The New York Times*, April 28. Accessed December 1, 2013.
    http://www.nytimes.com/2010/05/02/magazine/02self-measurement-t.html.
Woods, Dan. 2012. "Gamification Grows Up to Become a CEO's Best Friend." *Forbes*, May 14.
    http://www.forbes.com/sites/danwoods/2012/05/14/gamification-grows-up-to-become-a-ceos-best-friend/.
Wright, Robert. 2012. "Why We All Have 'Internet-Addiction Genes.'" *The Atlantic*, September 7.
    http://www.theatlantic.com/health/archive/2012/09/why-we-all-have-internet-addiction-genes/262112/.
Yamakami, Toshihiko. 2012. "Gateway Analysis of Nine Success Factors in Mobile Social Games: Lessons From Mobile Social Game Business." In *Human Centric Technology and Service in Smart Space, Lecture Notes in Electrical Engineering*, edited by James J. Park, Qun Jin, Martin Sang-soo Yeo, and Bin Hu, 129–136. Dordrecht: Springer Netherlands.
Zichermann, Gabe and Christopher Cunningham. 2011. *Gamification by Design: Implementing Game Mechanics in Web and Mobile Apps*. Sebastopol: O'Reilly.

LUDOGRAPHY

Strava. 2009. Strava.
    http://www.strava.com.