Casual Power

Understanding User Interfaces through Quantification

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Abstract

The paper draws parallels between quantification as found in the user interfaces of video games, to similar elements of more "serious" devices, in particular mapping and navigational platforms. I present an autoethnographic study of a mundane experience that would be familiar to many Google Maps users: locating a nearby place of interest and figuring out how to reach it. The navigational case is used as a canvas for a further analysis of the role of quantified elements in user interfaces. My autoethnography shows how the mundane actions performed on the screen are informed by the necessary reductions that mapped media perform on the physical world. Such reductions are imitated and enabled by user interfaces designed to control and guide user attention. Designers aim to simplify and streamline user interactions with the system and such practices are built on tracking the user and habituating the actions she performs through the screen.

> Golden rule for young warriors: when in doubt raise DEX! To-hit chance is THE most important stat for a warrior (no matter what your damage is, it's exactly zero if you miss...), BLOCKING with a shield can actually be a substitute for armor and, early on, 1 AC from a level up is nothing to be looked down on.
> Armin's Diablo Level Up Point Distribution Guide[1]

> Both Armor Class (AC) and To Hit are based on your Dexterity. Below is a summary on how they are calculated. For more information about AC and To Hit, see chapter 5.6.5.
> Armor Class
> Warrior, Rogue, Sorcerer: $Dex/5 + AC_{items}$
> Monk with plate: $Dex/5 + AC_{items}$
> Monk with mail: $Dex/5 + AC_{items} + clvl/2$
> Monk with leather and other light armor: $Dex/5 + AC_{items} + 2 \cdot clvl$
> Monk with no armor: $Dex/5 + AC_{items} + 2 \cdot clvl$
> Bard: $Dex/5 + AC_{items}$
> Barbarian: $Dex/5 + AC_{items} + clvl/4$
> Jaruff's Guide to Diablo and Hellfire, version 1.62[2].

1 Available at: http://www.arewehavingfunyet.com/diablo/lvlup.txt.
2 Available at: http://www.lurkerlounge.com/diablo/jarulf/jarulf162.pdf.

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Introduction: Quantification as Self-Representation

The following text draws parallels between quantification as found in the user interfaces of video games to similar elements of more "serious" devices, in particular mapping and navigational platforms. The quotes presented above draw attention to the nature of how numbers are used in the course of a game to create a clearly understood approximation of complex real life phenomenon. In this case, the quotes are from online guides to Diablo (Blizzard Entertainment 1996), an action role-playing game based around the acquisition of better equipment and skills. Those improvements are represented in sequential interval scales and affect the player's performance through mathematical formulas ingrained in the game's engine. In this game, as in many games like it that are built on the tradition of table-top Role-Playing Games (RPGs), the game mechanics are focused on numerical improvement, through "levelling" certain "stats" of the player's character or her equipment in order to cause more damage, attack faster etc. In such a setting, level 2 is always better than level 1, and a +1 sword will be replaced by a +2 of the same kind.

When looking at the phenomenon of the Quantified Self (QS) movement (Nafus/Sherman 2014) where the participants choose to trace and represent themselves through numerical scales in order to better understand topics as wide as personal health, mood or sleeping patterns, some similarity can be seen with the role of numbers in *Diablo*. In both cases humans, be it players or QS practitioners, are transferred into traceable sets of numbers to better facilitate their mediated existence on a digital platform. The goal in each case seems to be rather different; in one case, it is to help users immerse themselves in a make-believe entertainment platform, in the other to supplement one's knowledge of one's own body via meticulous auditing.

This paper suggests a more nuanced view: the aforementioned practices are bound by similar propensities of human perception. It can also be said that designers of non-game digital systems can and do make use of similar numerical shortcuts in order to enact certain affordances in the physical world. Specifically, I am talking about the perception of time and distance, as experienced through digital cartographic interfaces such as Google Maps or satellite navigation systems for cars. Doing so requires adopting a different perspective on the ways designers inscribe user interfaces with meaning (Akrich 1992). This paper argues for a conceptualization of digital maps as types of *ludic interfaces* (Fuchs 2012) that are designed to partially occlude the world to the user, through the implementation of quantified user interface (UI) elements.

I present an excerpt from an autoethnographic study of the roles of user interfaces in the manufacturing and implementation of digital maps. The paper begins with a mundane experience that would be familiar to many Google Maps[3]

3 This experience is transferable to other types of navigational interfaces. In particular, consider other types of digital maps like Apple Maps, Open Street Map or Microsoft's Bing Map; vehicle navigation devices and phone applications such as various versions of TomTom, Garmin, and CoPilot devices, or the Waze app.

users: locating a nearby place of interest and figuring out how to reach it (cf. Brown/McGregor/McMillan 2014). The navigational case is used as a canvas for further analysis of the role of quantified elements in user interfaces.

Autoethnography has a long tradition within both the social sciences and more humanities-oriented cultural practices (Ellis/Adams/Bochner 2011). Ellis and Bochner (2000) are recognised scholars in these fields with a large following advocating *evocative autoethnography*, which focuses on aesthetic renderings of personal research experiences, in ways that blur academic writing with literary genres such as biographies or memoirs. However, Anderson (2006) suggests using autoethnography as part of the *analytical* tradition of anthropological enquiry, tying the reflexivity of the autoethnographic method to the broader social context of the researcher as a participant-observer and utilizing it in order to advance theoretical knowledge rather than to only explore emergent personal narratives. Following his framework, the case before us represents an attempt to tie personal practices of map-based navigation to broader theoretical developments of modern mediascapes, particularly the idea of inscribing meaning into sociotechnical artefacts. This, while under the conceptual framework of Actor-Network Theory (ANT), which allows the adaption of a selective and temporary frame of reference into the workings of a particular system of process, as it is produced through translated actions between multiple human and non-human actors (Latour 1987; Woolgar 1990; Law 1992; Latour 2005).

Drawing on the case studied I move to examining digital maps as playful objects (Sicart 2014). Central to this consideration is the distinction between play as an activity and playfulness as an attitude, and thus the potential to embed the latter into devices and practices which are not traditionally considered playful. Playfulness allows for interface quantification designed to reinforce autotelic goals removed from map use and navigation. This analysis is based on human cognitive properties for simplifying and comparing numbers through the prism of "the machine zone" (Schüll 2014), a theory of the way the digitalisation of previously analogue technologies can be designed with the aim of nullifying user self-reflexivity.

A Case Study: Losing Track of Space through Digital Cartography

The case began when I was required to do some grocery shopping in the city of Utrecht for a social event. A colleague and I decided to meet up at a local supermarket so that he could help me with carrying the snacks and bottles back to the office.

Naturally, when we were making arrangements, I suggested the nearest supermarket that I could think of. Later, as I was about to leave for the supermarket, I realised that another same store might be closer. It was in exactly the opposite direction, away from the city centre, but it was larger and the path back to the office from it was more straightforward for two people carrying several bags. Due to the peculiar geometry of Utrecht's historic centre, with its medieval

streets, it was not immediately clear to me which supermarket was the closest. I still had a few minutes, so I swiftly launched Google Maps in one of the tabs of my browser. It loaded in seconds and zoomed in on my location. I then proceeded to type "ah" (shorthand for the supermarket brand in question). The map zoomed out slightly, showing three red dots around my location, which was indicated by a blue "you are here" circle (Figure 1). There was the answer to the first part of my question: yes, there was another supermarket in another direction and it did appear to be about the same distance from me as the other one, based on a rough visual approximation of the distance on the map. However, with one location being reachable by walking in a straight line and the other hiding behind multiple curves and turns, the quickest route was still not apparent.

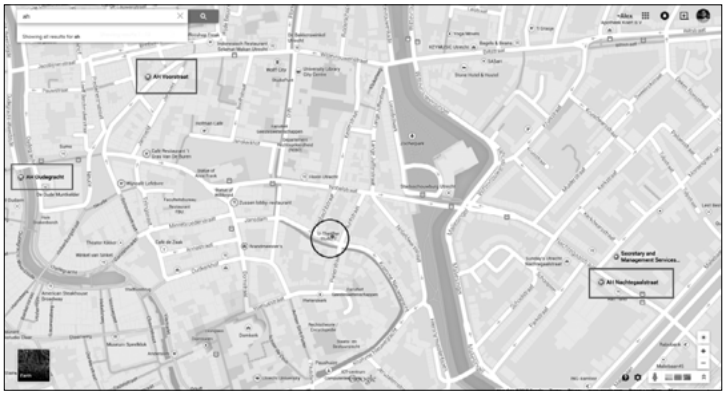

Fig. 1: Albert Heijn (AH) supermarkets (squares) in the vicinity of location (circle), screenshot from Google Maps on Windows PC by author.

I then proceeded to query the map regarding the travel time and distance with respect to each of the two locations. Selecting the walking route option, it showed me a tentative path and an estimated time of travel – marked by blue lines – as well as alternative routes (Figure 2).

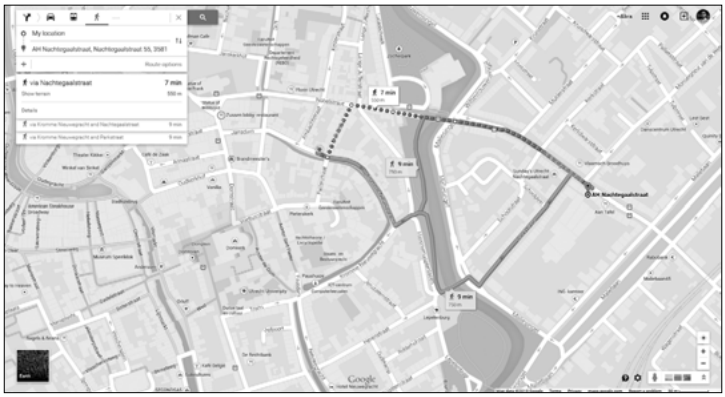

Fig. 2: The way to AH Nachtegaalstraat, screenshot from Google Maps on Windows PC by author.

Did it pay off? Not really. For the first supermarket, the one that I originally intended to visit, Google indicated a walking distance of 550 meters and journey time of 6 minutes. For the alternative supermarket, GM displayed an identical distance of 550 meters and a time of 7 minutes. The first one still seemed closer. I then realized that my search actions were completely un-reflexive, where, even as a researcher of mapping, I wasn't registering my own actions. I also realised that I was already running late for the planned meeting.

The map compressed space and time for me, turning potentials into actuals. It is what Ingold refers to as the "cartographic illusion" (Ingold 2000: 234), where by focusing on the end product of a mapmaking project (the produced inscription), the user of the map (the map-reader, engaged in wayfinding) confuses their surrounding landscapes with "space". To underscore the futility of my attempts to save myself some time and effort, one aspect of this illusion

"lies in the assumption that the structure of the world, and so also that of the map which purports to represent it, is fixed without regard to the movement of its inhabitants. Like a theatrical stage from which all the actors have mysteriously disappeared, the world – as it is represented in the map – appears deserted, devoid of life. No-one is there; nothing is going on." (ibid)

Even Google Maps, with its imposing rhetoric of truth (Della Dora 2012) could not have accounted for real-time events that could disrupt my journey, such as accidents or road works.[4] However critical towards maps, I was substituting my own memory of how the immediate world works with the quantifiable, relational qualities afforded to me by this interface between myself and the world, with such quantification being the decisive difference between how maps describe the world compared to other images, such as landscape paintings (Alpers 1984). Although – unlike in the examples put forward by Ingold – my journey to the supermarket *would* have left a trace on this map (as long as my phone's complementary Google location services remained connected), the illusion was still compelling enough. The seemingly accurate and immediate depiction of the actions available to me in the world was superimposed on the map. As I show through the unpacking of this case, through current theories of digital quantification and human perception, in digital mapping the cartographic illusion is even stronger.

4 It is worth noting here that while efforts to create such ever-accurate maps exist, they mostly pertain to automotive and not pedestrian navigation. For example, the Waze application attempts to do so (Hind/Gekker 2014). Additionally, at the time of writing, the attempts of multiple actors to develop real-time maps intended to be read exclusively by automatic vehicles, with nearly real-time updates (Miller 2014; Badger 2015).

Playfulness as Interaction

In this section, I argue for the appropriation of a playful prism for the analysis of mapping: by tracing specific manifestations of the mediatization (meta)process (Hepp 2013), I aim to show how the moulding forces of entangled industries – spatial data, social networks, and User Interface design – come together in the making of digital mapping interfaces. Thus, the continuous growing entanglement of additional spheres of life with specific media logics leads to the hybridization of communicative and cultural practices into the production of maps.

The *user,* or perhaps the *player* (rather than reader or viewer), is the main subject of the computational industries. Joost Raessens (2006) suggests that games and other digital technologies facilitate playful goals and identities, leading to the "ludification of culture". According to Raessens, modern Western cultures have become more accepting of notions of play outside of the traditional escapist or leisure domains. Play has been appropriated as a metaphor for a political process, utilized to foster suspense in game shows and movies, and utilized to conduct war through drone interfaces inspired by video game consoles and their controllers (Raessens 2012).

Play philosopher and designer Miguel Sicart (2014) offers a dissenting view on play, breaking away from formalist definitions attempting to re-introduce the concept beyond rule-bound game systems (Sicart 2011), while still keeping it as a viable operational term for the purposes of analysis. For him, play is a mode of human activity, a mode of being in the world and with the world. Play is not bound to any particular object and is not emerging from games with fixed rule systems. Sicart's point of departure, in fact, is not games but *toys,* citing the wonder and creativity they evoke in children and adults alike. For him, play is appropriative and autotelic, changing intended activities into other, not related to the original goal of the player. It is a mode of engagement with various others: "Play is being in the world, through objects, towards others. We play not to entertain ourselves or to learn or to be alienated: we play to be, and play gives us, through its characteristics, the possibility of being" (Sicart 2014: 18).

This definition, and specifically the suggestion to see objects as conduits, brings to the fore an important distinction: play and playfulness. While often conflated, and rarely discussed in previous games and play theories, the two are quite different since

> "[P]lay is an *activity* while playfulness is an *attitude*. An activity is a finite and coherent set of actions performed of certain purposes, while an attitude is a stance toward an activity – a psychological, physical, and emotional perspective we take on activities, people, and objects... In this sense, playfulness is projecting some of the characteristics of play into nonplay activities. It is an attempt to engage with the world in the mode of being of play but not playing." (Sicart 2014: 22)

This distinction will be useful when analysing quantification interfaces in mapping and beyond: an object can be playful, i.e. embedded with properties that bring about playfulness. This does not mean that his object was created

for or designed with play in mind. Playfulness is an attitude that fully takes on play's attribute of appropriation, as it is reliant on one's ability to see beyond the mundane, useful, accepted uses of objects and spaces, rejecting fixity and *reambiguating* the world. It disrupts existing contexts and injects play into non-play places.

I suggest *casual power* as a term for understanding how playfulness-within-objects changes the nature of the power relations between designers and users in digital environments. The term is borrowed from *casual games*, a type of video games that has become popular in recent years, characterised by easy and enticing mechanics, short play sessions, and appeal to mass audiences (Juul 2010). Such games have a tendency of suppressing other types of activities, often through users' smart phones, as they are played in-between and instead of less desired tasks: on public transport, during class, or at a boring meeting.

Similarly, casual power can be traced in designs intended to invoke playfulness and to overwrite something else. It can be positive, as in when subway stairs are modified to resemble piano keys in order to encourage people to be physically active (Rolighetsteorin 2009). Yet, often it is also a problematic technique, which aims to deceive, or at least distract, the user from being self-reflexive about the actual activities she is undertaking within a system. There always exists a tension between functional and predictable design and design intended to invoke playfulness. Nowhere is this clearer then when discussing maps.

Playful Mapping

Chris Perkins (2009) was the first to suggest introducing play into research focusing on mapping assemblages. Following the fixation of cartographers on usability and efficiency achieved through scientific means, devoid of the cultural components of mapping and its contextual specifics for users (Perkins 2008), he argues for re-examining the disruptive role of digital mapping in facilitating for people

> "the possibilities of putting themselves on their own map, destabilizing the taken-for-granted representational neutrality of the image; new kinds of maps are being made; more people are making maps; more things are being mapped; and mapping is taking place in more contexts than ever before." (Perkins 2009: 168)

This notion of ludic engagement underscores how playful mapping is entwined with everyday play, rather than standing apart from it. Re-examining Perkins' suggestions, a counterargument can be made that while playfulness opens up some possibilities, it closes others, in line with the principles of appropriation and personalization advocated by Sicart. Specifically, once multiple new actors have access to mapmaking, and while traditional mapmakers are required to compete with newcomers and other distracting screens (Dalton 2015), the role of play in mapping can become more insidious than in paper cartography. The specificity of digital maps is them being "Latourian quasi-things inscribed with

programs of actions" (Lammes 2009) that structure space for their end user in a certain way. If play is a mode of being in the world through the map, and mapping is an emergent and processual practice (Kitchin/Dodge 2007; Dodge/Kitchin/Perkins 2009; Kitchin/Gleeson/Dodge 2013), then a subversive play can be introduced into the map inscription in order to facilitate a certain being in the world, one that benefits the mapmaker rather than the map user.

Maps are permeated with varied forms of quantification, such as scoring,[5] route calculations, or constant (re)evaluations of speed, directions, and estimated times of arrival (ETAs). Designing interfaces that evoke participants' sense of play or competiveness is very fitting for such score-centred activities. In fact, media scholar Chris Chesher equates navigation in third-person computer games with navigating utilizing a GPS satnav device, pointing to how both systems restructure Lefebvrian notions of social space (Lefebvre 1992; Elden 2007). He lists three distinct ways in which those sociotechnical spaces are similarly structured: first, by displacing ad hoc navigational practices with concrete instructions, the system entrenches the rigid procedural logic and rhetoric of structured play; then, both systems similarly re-make the spaces around them into a subject-oriented consumption space, where desires are gratified almost immediately by the automatic alignment of the personal point-of-view with that of the mapped world; finally they both present a complex overlay on top of the mapped view. As I have shown in the supermarket example above, this overlay is rife with various quantified elements. The next section delves deeper into the consequences of quantification when moving from an analogue to a digital platform. It does so through a comparison with another case study of a similar move, this one in the world of gambling machines.

The Machine Zone

I suggest understanding user interface quantification through the notion of the "machine zone". Anthropologist Natasha Schüll, researching the gambling industry, describes the way this industry is concentrated on getting people 'into the zone'. Done through black-boxing the numbers behind gambling by way of digital technologies, this "zone" is defined as a psychological state of repeating the interactions with the digital gambling machines, where the users, no longer interested in winning or losing, are engrossed in the actions themselves and the feedback loops they generate. In such a state, playing to win is irrelevant; rather – as a gambler named Mollie describes it – the aim is "to keep playing – to stay in that machine zone where nothing else matters" (Schüll 2014: 2). Using Sicart's dichotomy, such attempt at "zoning" the user can be seen as an application of playfulness to gambling spaces and objects, detaching it from the

5 Giving scores, in the form of stars or numbers, have become a growing feature of many map-based interfaces. From the local business classification website Yelp to the tourist-oriented TripAdvisor, maps are used to order certain types of locations in both space and rank.

"official" goal of gambling – earning money – into an autotelic, appropriative state that draws on the action (the being) more than the result.

The architecture, ergonomics, and design of gambling spaces are intended to insulate the machine's user from their daily realities and create a zone without any unexpected occurrences, where a series of habituated actions provide a stream of expected outcomes. According to Schüll, compulsive gamblers often juxtapose the mechanical accuracy of the pre-designed play sessions with the social contingencies of their everyday work and lives, often in service jobs where – driven by neo-liberal post-Fordian models – human interaction is quantified and evaluated for purposes of constantly increasing productivity. For such gamblers, the machine and its nullifying effect on time and space offers a provisional respite from such demands by simply switching off: "To put the zone into words, the gamblers I spoke with supplemented an exotic, nineteenth-century terminology of hypnosis and magnetism with twentieth-century references to television watching, computer processing, and vehicle driving." (Schüll 2014: 19)

Ironically, the modes of quantified daily interactions that the gamblers try and escape make the gambling devices into effective tools for entrapping players. The introduction of digital technologies has created a unique conjuncture of highly traceable and manipulable players. Digitization hides game components that were previously visible and discernable behind an occluding rectangular of glass. The machine here is manufacturing a sense of wonder and enchantment through increased use of calculations to undermine uncertainty, replacing the old reliance on magic or superstition (Weber in Schüll 2014). In the case of electronic gambling machines, the mechanical reels were gradually replaced with electronic and later digital parts that created a disconnect between the game as experienced by the player and the actual outcomes, which were pre-calculated in an exact manner. Tracing trade materials and interviewing designers, Schüll concludes that by obfuscating the actual game mechanics, while giving players the illusion of control by including nostalgic aesthetic elements into the design, the gambling industry aims at maintaining this aura of enchantment. The magic of the machine is intrinsically tied to the way human perception works, as "[t]here is a mismatch… between human capacities to process and respond to information and those of the digital technology. This mismatch, one could further suggest, reflects the larger asymmetry between designers and players, technologies of disenchantment and states of enchantment." (Schüll 2014: 85)

The machine zone is then a state of contrived contingency, manufactured by the gambling industry to attract the user through enchanting the technological process behind digitalized play. It creates a disjunction between how the end-user perceives the game and its actual mechanics. Unlike what one would expect from gambling, the resulting state for the constantly tracked and measured user is one of a nullified certainty and calm, as she is engrossed in the actions she is performing.

Reading the ethnographies of gambling machine designers, it becomes clear that such a state has implications beyond that of the immediate gambling industry. Struggling between sticking to the claim of addiction (or 'problem gambling') as something inherent to the individual, most designers nonethe-

less admit that there are ways to foster addictive behaviours – or perhaps, more accurately, addictive loops[6] – through the point of contact behind users and devices – the user interface. Like in the *Diablo* game, and similar to self-tracking methods of the QS practitioners, the gambling machine simplifies an otherwise messy and random reality into a series of sequential numbers. It is increasingly tied to a permanent user profile that tracks players and rewards them for unbroken play, while continuously adjusting the experience of the machine in order to retain the player for as long as possible.

The experience interwoven into the design of digital maps can also be understood through the machine zone. The map allows for the user to substitute complex thought processes and cognitive unease for a repeated interaction with their physical reality through a pleasant mantle of the familiar. Familiarity, through a sense of cognitive ease, is often interpreted as "truthfulness" by the mind (Lazarsfeld/Berelson/Gaudet 1944; Lazarsfeld/Merton 1948). Familiar actions also have a causal link to affect, meaning that a sense of mastery from performing a familiar task can be felt as pleasant (Zajonc 1968; 1980; Bornstein 1989). This is anchored in the quantifiable nature of the digital media, and relates to another attribute of human perception. The propensity of humans to measure is supplemented by their ability to compare those measures across different, often unrelated, scales and is known as *intensity matching*. Kanhenman (2011) notes that most people from a similar cultural background agree on matching such attributes as the intensity of a colour to the severity of a crime (murder is a deeper shade of red than theft). This also links to the *availability heuristic* (Tversky/Kahneman 1973), which allows one to substitute a question related to frequency or quantity with an easier one.

Why did I do the cumbersome comparison between the supermarkets, described in the opening of the paper? Because I wanted to know which one was closer. To act through a map is often to examine numerical information – whether in units of time or space. But such data has a trace of Ingoldian "cartographic illusions", obscuring the complex spatiotemporal relationship – not only the visible aerial distance on the map, but also the actual turn-by-turn directions that creates the genuinely lived distance of traffic lights and blocked sidewalks. *Thus, if the question that I needed to answer was 'how difficult would it be for me to carry groceries from one place compared to another?', the answer I might end up getting is 'which of the two numbers presented to me by Google Maps is lower?'.*

The Machine Zone through Quantification and Gamification

To summarise the argument so far, the machine zone is a mode of design that uses obfuscation in user interface to entice non-reflexive and prolonged engagement with a digital device. Casual power is the resulting diffused power

6 Compare with Stefan Werning (2007) discussion of video games as programmed objects where he draws parallels between the psychological notion of 'behavioural loop' and programming's loop and recursion techniques.

manifesting through multiple small interactions, in simple and repetitive increments. In this last section, I emphasise the role of quantification in such power relations through a comparative analysis of the Google Maps interface with that of the Facebook social media website.

Social media quantifies the basic human relations of the world, allowing one to constantly re-asses his or her position vis-à-vis subjective reality via answering a series of easier questions (How many friends? How many likes?). This happens while experiencing a (misleading) sense of familiarity through the mastery of a user interface designed to foster a disconnect between the ease of an action and its meaning. Artist and critic Benjamin Grosser, inventor of the "Facebook Demetricator" browser add-on that deletes all quantity-related mentions from the popular platform, comments on such constant self-assessment:

> "Our need for personal worth is highly dependent on these social interactions, as both relatedness and esteem are necessarily measured in relation to others. If this essential human need can only be fulfilled within the confines of capitalism, then it stands to reason that we are subject to a deeply ingrained desire for *more*: a state of being where more exchange, more value, or more trade equals more personal worth. In other words, our evolutionarily developed desire for worth is an intrinsic need, which translates, through the 'pervasive atmosphere' of capitalist realism, into a desire for more." (Grosser 2014: n. p.)

Grosser's argument is built on the propagation of a neo-liberal managerial culture, and specifically the audit, as an evaluation method rooted in observable metrics, which exceeded its original role in the financial industry and made its way into domains like higher education and public service. Facebook builds upon this culture in two ways: as a driving force, and as a data infrastructure. First, in constantly displaying metrics to the user, it aims at commodifying the social interaction into a manageable structure, while playing on the anxieties of the individual to miss out or lose. The numbers – most often notifications of new events – go up whether the user attends to them or not, thereby maintaining a constant pressure to check what is new in their feed. But the moment she checks (i. e. clicks on the icon which displays the number) the count is gone and the user must attain additional notifications by creating interaction opportunities. This requires engaging others through Facebook to be prompted as they comment or message back, perpetuating the "desire for more". Additionally, based on a list data structure, Facebook's database in itself is geared towards keeping score and assigning a numerical structure, thus "[o]n occasion, this may lead the Facebook interface programmer to include a metric simply because they can" (ibid).

As can be seen from the discussion of the machine zone as a quantitative engagement mode, my argument regarding the casual power of the mapping interface combines several conceptual frameworks. Namely, I recognise the concerns over social media designed towards habituating behavioural automatism (Madrigal 2013) via paths of commodifying quantification (Grosser 2014) in order to create an autotelic mode of being through a playful attitude (Sicart 2014). This allows me to compare how both social media and digital mapping are the offspring of increasingly shortening attention cycles and the unique characteristics of digital

objects (Kallinikos/Aaltonen/Marton 2010). Both are often presented as utilities that allow one to extend the existing characteristics of human interaction or spatial perception through improved means. Numbers play a similar function in both as they propagate a sense of the immediate, the calculable, and the objective.

While not as saturated with metrics as the Facebook user interface (Figure 3), Google Maps has similar interface tendencies (Figure 4). Selecting any point on the digital map will give a user several suggestions on the possible ways to interact with it in the physical world, whether by offering quantified (time and distance) ways to reach it or by ranking it compared to other locations in the area. Such suggestions are based on user input, and one's personal preferences are distilled from previous use patterns. Through quantification, the user is presented with clear and discernible information about the world and ways to act in it, making the map into a navigational rather than mimetic reproduction of the world (November/Camacho-Hübner/Latour 2010).

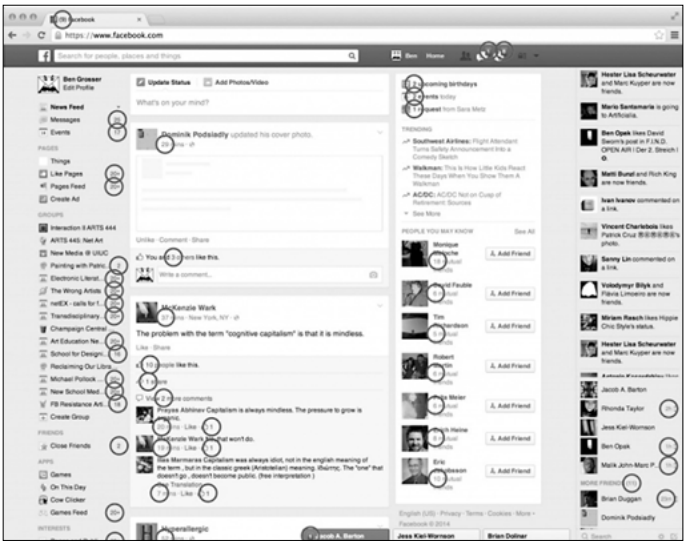

Fig. 3: Metrics location on Facebook User Interface, from Grosser (2015).

Fig. 4: Metrics location on Facebook User Interface, from Grosser (2015).

Conclusion

While a comparison between an old computer game and a movement centred on self-tracking and self-assessment may seem inane at first, they are both rooted in a cultural shift from analogue to digital platforms. Such a shift prioritises a move to a clear and immediate display of numerical information, giving a sense of purpose to an otherwise messy reality.

My autoethnography of the map was to show how the mundane actions performed on the screen are informed by the necessary reductions that mapped media exert on the physical world. Such reductions are initiated and enabled by user interfaces designed to control and guide user attention. Designers aim to simplify and streamline user interactions with the system and such practices are built on tracking the user and habituating the actions she does through the screen.

Understanding this mapping interaction requires one to consider the nature of play and playfulness, a quality rarely associated with the serious world of task-oriented navigation. Yet, by utilising the ideas of playfulness as an attitude that can be embedded in an object and of the machine zone as an example of non-reflexive engagement with such an object, a theoretical analysis can be performed. The notion of cognitive fluency helps to elucidate the ease and pleasure I received from performing repeated actions on the map. The theory of propensity matching explains how the numerical elements of the user interface allowed me to substitute difficult questions with simpler ones, provided the answer could be expressed in quantifiable and comparable units. Comparing a map's numerical elements with that of a social media website allows us to recognise repeating design patterns in both, that simplify and automate repeating daily actions.

Throughout the paper, I used the term *casual power* to describe this effect: the way digital objects are made to fit into quotidian practices and the ways people *casually* use them while they track him or her in order to continuously improve their user experience and propagate additional time spent using device. This echoes the warning of media philosopher David Berry against

> "new forms of invisible interface/ubiquitous computing/enchanted objects which use context to present user with predictive media and information in real time. The aim, we might say, is to replace forethought by reconfiguring/replacing human 'secondary memory' and thinking with computation. That is, the crucial half-second of pre-conscious decision-forming processes whereby we literally 'make up our own minds' is today subject to the unregulated and aggressive targeting of the programming industry." (Berry 2014: 211)

This exercise employed the example of my own Google Maps use for broader critical consideration of quantification in society. In the venue of critical auto-ethnography I strive to provide an analysis that "recursively draws upon our personal experiences and perceptions to inform our broader social understandings and upon our broader social understandings to enrich our self-understandings" (Anderson 2006: 390). This theoretical framework opens up

potential research into the ways media interfaces are produced, how users experience them, and particularly the role and power of quantifiable elements in this communicative practice.

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