



GAMIFICATION **CRITICAL APPROACHES**

EDITED BY

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COMMISSION FOR TECHNO-HUMANITIES
FACULTY OF "ARTES LIBERALES"
UNIVERSITY OF WARSAW



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Gamification. Critical Approaches

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INTRODUCTION

Jarosław Kopec
Krzysztof Pacewicz

From schools, through workplaces, healthcare, travel, and marketing, to everyday leisure activities and even sex, life is becoming more and more gamified.

Yet the definition of gamification is still volatile. All the authors in this book try to grasp the meaning, the sense and the consequences of this accelerating trend.

Gamification is widely perceived as a magic bullet – a universal solution to a variety of contemporary problems, not only efficient and cheap, but also infusing our world with lots of “fun”.

In place of this laudatory attitude, this volume presents a critical approach. The emphasis usually put on the fun-factor does not explain anything; in fact it conceals the social, political and cultural consequences of gamifying all spheres of our lives.

It is our aim to explore this dark side of gamification.

Jarosław Kopec regards gamification as a trend aiming at infiltrating society with the ideology of algorithmisation. Applications for gamification of particular parts of everyday life (Endomondo, iKamasutra, Life is a Game) are employed as cases for study. The main case, HabitRPG, is interpreted as gamification in its purest form, and therefore it stands as the core example for interpretation of gamification’s ideology.

Krzysztof Pacewicz analyses the famous *Gamification by Design* by Zichermann and Cunningham as an example of biopolitical power/knowledge. The “anthropology of gamification” – an eclectic and pseudo-scientific variant of behaviourism – is exposed as a crucial element of the proposed techniques of power. It is also argued that the gamification strategies of management advocated by the book incorporate simplifying procedures and disciplinary techniques to ensure that players play by the rules, and thus could have a substantial effect on social behaviour patterns if widely adopted.

Aleksandra Przegalińska addresses the relation between neuroscientific self-quantification devices and quantification/gamification procedures. The main example is Melon – a headband and an accompanying app to measure focus on a daily basis. Przegalińska exposes the dual nature of links between gamification/quantification regimes, on the one hand, and neuroscience (in particular neuroimaging) on the other, with its ability to present our neural activity as transparent. Both gamification and quantification aim at general behavioural change, resulting in outcomes perceived as positive. The analysis shows how these regimes interfere with neuroscience in order to become even more persuasive and, essentially, successful.

Michał Smoleń argues that instead of simply adding a fun factor to boring activities, gamification creates a new, highly controllable social system. By using game metaphors and mechanics, a designer can influence the behaviour of a subject, but also make him or her easier to supervise and more prone to being used as part of big data. She can initiate competition between some players and silence other potential conflicts. This social system creation resembles the establishment of markets as spheres of economic activity, as researched by economic sociologists. Nonetheless, gamification forms a system particularly suited to the designer’s interests, granting her full control over institutions and rules, which makes consideration of underlying power inequalities especially crucial.

Jakub Wencel bases his chapter on a crucial distinction between gamification and playfulness. He analyses the complementary and necessary relationship between gamified and non-gamified areas and elements in modern video games using the philosophical tools rooted in the modern tradition of studies on biopolitics. Subsequently, he defines gamification as a device that is set up to “take over” non-gamified areas of playful, undetermined interaction. Gamification-as-biopower preys on disorderly, but productive and creative bodies.

Mateusz Kominiarczuk analyses how videogames become gamified. Commonly accepted definitions of gamification explicitly prohibit the “gamification of games”, stating that even if it occurs, it is either impossible to distinguish from regular “game design”, or else limited to achievements. However, careful examination of design trends observed in games published

after 2010 indicates otherwise. A case study of the development of the *Diablo* and *StarCraft* series shows that the “gamification of games” trend is quite real, and not limited to achievements.

In the afterword, Szymon Wróbel asks the following question: if the world is but a game, if the cosmos is a playground, what would the rules of such a game be? Would they be similar to the laws of nature as currently understood? Or perhaps it is only *la comédie* designed as a theatre play?



Critical approaches to gamification are vitally needed, not only to understand how present societies are transforming, but also to know how to react. We hope that the essays in this volume can contribute to the debate.

LET'S PUT PROGRAMS IN OUR MINDS. THE IDEOLOGY OF GAMIFICATION. CASE STUDY OF HABITRPG

Jarosław Kopeć

This text explores and attempts to interpret gamification as a trend aiming at infiltrating society with the ideology of algorithmisation. Applications for gamification of particular parts of everyday life (wealthiness, sex, work, habits) are employed as cases for study. The main case, HabitRPG, is interpreted as gamification in its purest form; therefore it stands as the core example for interpretation of gamification's ideology.

Introduction

Gamification is a phenomenon deserving of critical approach as it becomes more and more popular and is often discussed in an overtly positive manner. In the following text I make an attempt to discuss and interpret it using certain methodological approaches based on Latour's (2005, 2009), Chun's (2005) and Manovich's (1999) writings about how humans and non-humans interact to build a common collective.

I see gamification as a dangerous phenomenon and I try to analyse its ideology. First, I reconstruct basic concepts, which are important for my argument. Having done that, I proceed to discuss particular cases of gamification, namely *Endomondo*, *iKamasutra*, *Life is a Game*, and the main case, *HabitRPG*. In the final remarks I tie my thoughts together and present my inter-

pretation of the phenomenon of gamification: gamification is about programming humans' consciousnesses and is an aspect of the projection of computer ontology onto culture itself (Manovich, 1999).

The ludic MM&As and what they all mean

Matthew Fuchs (2012) defines gamification as “penetration or infiltration of social sectors” by “game-design elements”. The best way to study this process is by studying the interfaces, because they are the places where games and players meet.

It is not so much computer hardware or the computer's software, and to a disputable amount only the user, that determines direction and pace of gamification, but in the first instance the interfaces that mediate in between human and machine (Fuchs, 2012).

The interfaces are the mediators between (wo)men and machines. Although Fuchs is referring to videogames, his concepts are also usable when describing systems closer to other kinds of games. In this text I will not go deeper into this issue but will limit myself to cases from the audiovisual segment of games.

Fuchs understands interfaces as material objects used for communicating with machines, such as gamepads, keyboards, or cameras used for tracking a player's movement. But he also notes that “playfulness can never be owned by the object alone”. He uses the example of LEGO bricks thrown in front of a person in an Egyptian temple in 2000 BC, imagining that such a person would do something entirely different with them than a child from the 1970s in the USA. To make this example closer to the videogames he discusses, we can replace LEGO bricks with a modern gaming console and the situation would be the same. This is why there must be more than a material object to make something a game. Putting it simply, there has to be something that can inform a person situated in a context that the system one is looking at is a game, and instruct him or her concerning what kind of behaviour the system expects from him/her, even when a particular object does not have to be associated with a game. Translating this into Latour's terms (2005, p. 53), there must be an ideomorphic actor – a thought – relating to the user via the material non-human – a physical game. This ideomorph may be a *ludic method*, a *ludic metaphor* or a *ludic attribute*. These three are the core elements of gamification – they are the elements which, when introduced into a non-game context, “contaminate” it with game-like features. These three aspects of gamification appear in certain non-game contexts in different proportions, and gradually turn a particular system into a gamified one.

If one wanted to describe gamification as the penetration of our society with methods, metaphors, values and attributes of games—as I suggest here—then ludification would be the infiltration of society with play-related aspects, i.e. methods, metaphors and attributes of play (Fuchs, 2012).

Going along Latour's lines, I would have to say that a system is gamified when it includes both physical (material interface) and ideomorphic (the meanings of signs addressing the game-like character of the system: ludic methods, metaphors and attributes) non-human actors. By "system" I understand a collective (Latour, 2009, 2004) of humans and non-humans who are related within a particular situation, like a restaurant with its guests, cooks, waiters, building, coffee machine and everything else that is relevant.

I follow Fuchs' notion, and this is why in the following paragraphs I try to reconstruct his understanding of ludic methods, metaphors and attributes to set the basic criteria, which will allow me to call certain systems gamified and discuss the differences between particular cases.

A ludic method is a rule set of behaviour containing criteria of success within a particular system. It can be, for example, a time-limited "2 for 1 deal" in a restaurant: when one buys a burger before a specified time, he or she gets two for the price of one. This system contains precise rules of success. If one follows them, he or she can win, where winning is understood as making use of a bargain. Fuchs would probably call this system gamified, even though there would be no visual or rhetorical (ludic attribute or metaphor) allusions to games.

To describe such situations Fuchs introduces two terms relating to the ways in which particular ideomorphs can inform players about the other non-humans and make players treat these non-humans as games. A ludic metaphor is a "figure of speech that is built upon connotations to the semantic field of games and play" (Fuchs, 2012). A ludic attribute is a visual or auditory allusion to games, such as a graphical pattern resembling a roulette table, card colours, poker chips, the sound of shuffling the deck, etc. Both ludic metaphors and attributes adhere to games differently than ludic methods – they do not set any rules of success in a system; they rather link to games through allusions, quotes or resemblance, placing a person in a game-like situation through connotation. This kind of gamification requires a human to be able to recognise the signs and associate them with games. A ludic method does not need one to meet this requirement; the requirement is comprehension and following the rules even without understanding that it is an allusion to games.

The proportions between employment of ludic methods, metaphors and attributes in certain cases of gamification will be a visible sign of the type of gamification which is employed in a particular system. When a system employs certain attributes and metaphors, saying that by proceeding according to the rules, a person will *earn experience points* and *level up*, or by using icons of dice, cards or a board – it is stating clearly that it is trying to gamify the user's behaviour – the ideomorphic actor (Latour, 2005, p. 53) screams that it comes from the world of games and is quite difficult to miss. When the system does not include such explicitly game-related actors, the association with games may be more obscure, although the strongest part of the gamification – the method – may still be there.

Methods on the one hand, and metaphors and attributes on the other, add some features to the systems in which they are implemented. These features vary, but on the basic level they include didacticism. When there are rewards and rules, there is a strong message, which makes some decisions made by a user appear positive and others negative. These criteria of success, a part of the ludic method, establish certain ideologies of particular examples of gamification. At the same time methods and attributes inform a user that he or she should behave as if he or she were taking part in a game. This is the way some kind of ideology is introduced into the system and communicated to the user.

Tracing ideology in/of gamification

What does it mean for there to be an ideology of/in gamification? How can a piece of software have an ideology?

Wendy Hui Kyong Chun (2005) answers this question in the context of the distinction between software and hardware. She compares software to ideology (calling it a “functional analog”) because software is what obscures the hardware. She follows Althusser’s (1971) thought about ideology as a representation of the imaginary relation of individuals to their real conditions of existence. She says that there is almost no unobscured relation between a human and a digital machine. There is almost always an intermediary – the software.

Software, or perhaps more precisely operating systems, offers us an imaginary relationship to our hardware: they do not represent transistors but rather desktops and recycling bins. Software produces ‘users’. Without OS there would be no access to hardware; without OS no actions, no practices, and thus no users (Chun, 2005).

Even professional programming, so different from everyday practices of non-technical users of modern computers, when conducted in the environment of modern, high-level programming languages, is conducted away from the machine itself. It happens on the level of software – operating system, interpreter, compiler, even a text editor. A programmer has to use editors and other programs to create new software. Even he or she, a professional, technical worker whose job is to give orders to the machines, is kept away from the hardware and has to make use of numerous intermediaries.

This situation, according to Chun (2005), is very different from that in the early days of computers. Before high-level programming languages were developed and popularised, programmers had to delve into the materiality of the hardware – cables, transistors, punched cards – and program particular machines through a physical effort. Programmers back then did actually touch the computers.

Higher-level programming languages, unlike assembly language, explode one’s instructions and enable one to forget the machine. They enable one to

run a program on more than one machine—a property now assumed to be a “natural” property of software. Direct programming led to a unique configuration of cables; early machine language could be iterable but only on the same machine—assuming, of course, no engineering faults or failures. (Chun, 2005)

Why is it so different now? It is an effect of “democratisation”, which has obscured the materiality of the computer in order to allow its “users” to separate themselves from thinking about silicon, zeros and ones, logic gates and all the materiality of a machine. “*Structured programming* (...) hides, and thus secures, the machine. Not surprisingly, having little or no contact with the actual machine enhances one’s ability to think abstractly rather than numerically” (Chun, 2005).

Alexander R. Galloway (2006) continues the discussion of software as a “functional analog” to ideology. He treats the term “functional” as a term from computer science and discusses the visuality of software, going deeper into the theory of images, engaging in a dialogue with Chun’s text. But there is also a topic relevant to my theoretical approach. Galloway stresses the difference between software and linguistic phenomena in terms of their affectiveness. He states that “[s]oftware is algorithmically affective in ways that ideology never was” (Galloway, 2006).

An illocutionary speech act (Austin, Urmson, Sbisà, 1975) is one that causes a significant change in the social world. A classic example is a pronouncement of marriage. After it is done, the social status of some human actors changes, as does their legal situation. On the other hand, when a very similar (in terms of content) act is performed on a stage in a theatre, everyone knows that it is not illocutionary.

But what about software running on a digital machine? Is it able to make such a distinction? Is it possible to turn an act of illocutionary speech into something without this causal force through a simple change of context? When we consider virtual environment software, the answer is yes. When a Python programmer runs software in a virtual environment, the program’s actions may be strictly limited, and when one wants to terminate everything related to that program, he or she can do so by deleting the virtualenv (Python Guide, 2014). A programmer can also mark particular lines of code as comments, which will not be interpreted and executed by the machine (in Python mostly by adding hash - ‘#’). But still, as Galloway says, agreeing with Katherine Hayles (2005), both situations are different. A social, intersubjective context is not the same as one constituted by a virtual environment, which is implemented arbitrarily by the developer of a particular piece of software. So there is an issue with non-illocutionary speech when relating to a computer.

Galloway’s note considering the power of software versus the power of ideology is still relevant to the discussion of the relation between gamification and ideology. It is time to tie the threads created in this part of the text together and get back to the opening question: how

can a piece of gamification have an ideology? The whole discussion reconstructed here addresses the issues of relations between users, programmers, software and hardware. How can I put gamification software into this catalogue of classes?

A gamification application, for now no particular one, is an instance of software. It engages in relations with users and hardware. Its relationship with the user is on the level of both cognition and the body. One does not only communicate with applications through the body, but software does often create representations of users' bodies. Particular cases of such applications will be discussed further, but let us stop here for a brief moment. When software creates a representation of the user's body and life, it treats it in the same way that ideology (Althusser, 1971) treats living conditions. Therefore, a piece of software is a functional analog to ideology, with all the consequences pointed out by Galloway and Chun. It obscures the "hardware" of a human physical and social body, it creates a certain conception of its condition and it separates a human (understood as a self-aware mind) from his or her living conditions, replacing them with the representation created within the software, and obfuscating what is beneath it.

A piece of software, which we would call an instance of gamification, includes ludic methods, metaphors or attributes. These are employed to tell the user what he or she should do in order to transform his or her living conditions represented within the software. The internalisation of such an ideology built into a piece of software would be understood as the moment when the representation generated by software replaces the previous representation used to perceive the living conditions of a particular human. This is when the algorithmical logic of the gamified system synchronises with a human's own logic.

The core element of a ludic method is the criteria of success. A game has to specify the conditions under which a particular player wins the game. These have to be precise and include some instructions which a player should follow in order to achieve success. This mechanism of receiving instructions and engaging in gamification can be represented as an algorithm written as a computer program. On a basic level, such a program should include conditional statements and some variables storing the data.

Such a program, written in Python, should look more or less like this:

```
User_food = 0;
User_food = int(raw_input('How much did you eat today? (kcal)'))
If user_food < 2000:
    print 'Success!'
else:
    print 'Better luck next time'
```

This particular program asks its user about how many calories he or she has eaten that day. Having got the answer, it checks if it is less than 2000. When it is, it prints „Success!“. When it is not, it prints “Better luck next time”.

This program, when looped, would be a minimal example of gamification of life using a ludic method. It would introduce specific criteria of success and check them, giving its user simple feedback about his or her success or failure. The moment when one started preventing oneself from eating too much because of the fear that he or she might get negative feedback from the program would be the moment at which I would locate the internalisation of the ideology of gamification.

In the next part of the text I discuss three different examples of gamification of life to show how gamification is introduced into non-game-like systems. I present particular applications of different parts of gamification – ludic methods, metaphors and attributes – to sketch the background for the main case discussed in this chapter, which is *HabitRPG*.

Three background cases

The following examples show different types of gamification. The accent is put on employment of ludic methods, metaphors and attributes in particular cases. These examples serve as background for *HabitRPG*, which is discussed in the last part of the chapter.

iKamasutra

iKamasutra is an application developed for mobile devices which allows heterosexual couples to gamify their sex lives.¹ The core functionality of this application is a catalogue of sexual positions which the user can browse through, marking particular positions as “done”, “to-do” or “favorite”. The application counts the number of positions marked as “done” and gives its user feedback about how well he or she has mastered *kama sutra*. *Kama sutra* is understood here as a diverse sex life, only loosely connected to the ancient Hindu text. The numerical representation of diversity is a percentage of positions marked as “done”. The criteria of success in *iKamasutra*, which are necessary to establish a ludic method, are therefore very simple: the more positions you try out, the more you become a master of *kama sutra*.

Other functionality included within the application is a randomiser that allows users to choose positions randomly from the catalogue. This process is not entirely random: the user can determine the basic characteristics of the positions he or she wants to find. Variables include intimacy, complexity and required strength. This functionality resembles advanced settings for search engines, but it is also well prepared for being used in a sleeping room environment – the user must set the specifications and then shake the device. The application will respond to this gesture, displaying a proposition:

1 Non-hetersexual positions are not included in the catalogue.

Shake it, baby. You'll like it.

- Ask your partner to shake the iPhone to choose a random new position.

- Swipe left or right to view the next position.

(iTunes, 2015)

As additional services, *iKamasutra* offers functionalities based on references to popular culture. The user can go through a film catalogue, choose one of the records and see which positions were used by the characters of a chosen movie. The other functionality – “places” – allows users to check the types of places where they have had sex. The social-media integration features include exporting data to Facebook and Twitter, and also e-mail. One can send someone else a message including one of the positions from the app's catalogue, supposedly as a suggestion. The *iKamasutra*'s press kit describes this feature with a catchy tagline: “Email is now foreplay” (iKamasutra, 2015).

iKamasutra does not employ ludic metaphors or attributes. It does not resemble a game at all, except for this peculiar status bar representing the progress in “catching them all”.

Endomondo

“Free your endorphines” (endomondo.com) is the tagline for *Endomondo*, a system for gamifying being fit. The system includes applications for mobile devices and a website accessible by a desktop computer or laptop. The basic functionality of *Endomondo* is tracking sporting activity – running, biking, swimming, yoga, tennis and many more. Activity is traced by two types of input: data gathered by a mobile device using GPS technology and user declarations posted through a website.

The data gathered this way is processed and turned into feedback. One can see his or her history, look at the graphs, or take part in a challenge posted by someone else: either a person or a company. Companies post their challenges on *Endomondo* as commercials tailored for a social-media environment. Their challenges are competitions: the person who does the most running or swimming in a given time wins the prize, such as headphones or some sport equipment. These challenges are heavily branded.

Another kind of feedback is the calorie burning statistics, which are calculated to represent the number of hamburgers burnt during the workout. One can also compare the distance he or she has beaten during the trainings to travelling around the world or to the moon and back.

The curious part of *Endomondo*'s technology is an option to turn a smartphone into a digital coach. The device may be enabled to measure the user's speed, pulse and time, and then motivate its user, via voice, to try harder.

The video demo posted on *Endomondo's* main webpage explains that the application's purpose is to turn sport into fun. It does this by motivating users to try harder and be happy with the results. The ludic method here is not as simple as in *iKamasutra's* case. The previous application stated it clearly: you have to get 100%. *Endomondo* does not do that. It says: you should be fit and we will help you to be more motivated to try harder; this is the way for you to be happy. But it is the user who decides what his or her goals are and whether or not he or she wants to take part in a particular challenge. The motivation comes from competition with other users, but it is open-ended. There is no way to reach 100% here in *Endomondo*. The method is here more for motivation to cultivate one's own endorphines. At the same time there are no metaphors or attributes employed, at least not within the main interface of the application.

Life is a Game

Oliver Emberton's tutorial for life (Emberton, 2014) is an illustrated text, not an interactive application. It explains how one should live. "Life is a game of strategy", it states clearly. To succeed, one has to allocate resources effectively.

Emberton's guide divides life into three stages: "young" and "adult" are discussed together, while "later life" is what comes next. This is when all the effort should pay off. "Your past decisions drastically shape where you end up, and if you're happy, healthy, fulfilled – or not – in your final days there's far less you can do about it" (Emberton, 2014).

During the first two phases one has to proceed in life, gathering necessary skills and experience. Not all of these are available at the beginning of life. Some get unlocked after a "liver" (that is to say, a person playing a game called "life") meets some prerequisites. The "young" phase is crucial for later success. "You'll never have so much time and energy again", says Emberton's tutorial. The only thing one has to do is to assign time as effectively as possible. The other demon, beside time, that one has to bend to one's own will is one's body. The body does not always obey the orders given by the brain. We are assured that "This is not a bug". Everyone has it sometimes.

Later in the game money comes into the equation. It also has to be managed. A "liver" can decide whether he or she wants to start his or her own business and get rich or take up a "low-stress strategy" with some savings "for a rainy day" and a simple life.

What is the most interesting about *Life is a Game* is how it lays out micro-management of everyday tasks conducted in order to achieve specified goals. A liver is described via a set of characteristics resembling those from role-playing games: health, energy and willpower. "If your state gets too low in one area, your body will disobey your own instructions until your needs are met" (Emberton, 2014). Willpower is crucial for beating tasks your body does not

want to undertake. When you know that you have to do something of that sort, try to boost your willpower the day before. Having done that, you will be prepared to fight the demon of your own body after a good night's sleep. This is the bottom line and the criteria of success: you have to gather the resources necessary and then use them wisely. It is like a 4X video-game: build your economy, build an army and go and conquer. But there is also some randomness included:

- you are born as a random gender and in a random place, but you can manage that by moving to another place;
- the further you go into the game, the more often random events occur, like when your child needs his or her diaper changed.

Even bearing this slight randomness in mind, one can make decisions based on the rule set explained in the tutorial.

Besides the ludic method, there is also the level of *ludic metaphors* and *attributes*. Their employment makes allusion to the distinguishable graphic style of contemporary pixelesque indie-games (*Fez*, *Spelunky*, *Superbrothers: Sword & Sorcery*), which refer to older, classic games from the 8-bit era (*Super Mario Bros.*, *The Legend of Zelda*, *Final Fantasy*). This particular choice of graphic style makes the player's representation – a pixelesque avatar – very distant. It is like a character from an old-school videogame or a cartoon character. Simplification is suggested strongly, and resonates perfectly with the simplifying tendencies of the whole tutorial. In *Life is a Game* (Emberton, 2014), ludic attributes tune perfectly with the method.

The main case: HabitRPG

The main case discussed in this text is *HabitRPG* (<http://habitrrpg.com>). It was chosen because, at first sight, it does not include any particular ideology. It does not, by default, try to persuade you to do anything particular, be it running, working efficiently or maintaining a healthy diet. It seems to be all about “managing yourself however you like”.

Gamification at its purest

On January 2011 Tyler Renelle started a successful Kickstarter (Kickstarter, 2015) campaign to raise funds for development of software he had written, called *HabitRPG*. Its tagline at that time said that *HabitRPG* was a “Habit tracker app which treats your goals like a Role Playing Game”. Currently, the project's Wikia (Welcome, 2014) describes it as “a habit building program that treats your life like a Role Playing Game”.

HabitRPG is called a program, not an application or a game. This is because it is not a single app – it is a framework one can use to create his or her own game. This is why I chose it as the main case for this text. At first glance, *HabitRPG* does not include any particular ideology. It is not single-purpose, like *Endomondo* or *iKamasutra*. It does not even try to persuade its users to allocate resources properly. It is about building good habits. But is that all? In this part of the text I will try to show that it is so much more.

The basic functions of the system allow a user to add Habits (2014), Dailies (2014), To-Dos (2014) and Rewards (2014). The first category is for positive or negative habits a user wants to build or break. These can be everything, examples would be smoking, washing the dishes or reading books. The user decides which habits he or she wants to build or leave behind. *HabitRPG* is a framework for making one's own gamification of life, so the suggestions for habits delivered by the developers are there just as examples: the system does suggest deleting them and replacing them with one's own.

“Dailies” is a category for things (habits) the user wants to do every day. He or she is rewarded for doing them daily. What they are is up to the user. He or she can include jogging, cooking, feeding an animal or whatever he or she wishes.

To-dos are things to be done. The user can determine the date by which particular things have to be done or just leave them without any deadline. When one completes his or her to-do, there is a great reward. By completing dailies, positive habits and to-dos, the user's avatar gains experience points and money. Experience lets him or her level up, increase characteristics and become stronger. The avatars can engage in fights against virtual obstacles inspired by MMORPGs. Gold can be spent both on equipment (swords, helmets, shields, armour, etc.) and rewards configured by the user, such as “watching an episode of *X-files*” or “eating out”.

Upon levelling up and acquiring gear, the user's character becomes prepared for taking part in quests. There are two types of quests:

In collection quests, players are able to collect special drops, which count toward a party-wide total goal. In boss battles, party members deal damage to an enemy by completing tasks, and take damage for the uncompleted dailies of all quest participants, not just their own. (Quests, 2014)

Teams called “parties” can undertake quests. Every user can create his or her own party, invite friends to join, and fight obstacles together. Succeeding in quests requires cooperation – there is collective responsibility both for failures and successes (losing health points, earning rewards in money, experience and items). The user's party is also visible in the top bar of the webapp. One can see other friends' progress, look at their items or characteristics and see the pets they have gathered, hatched and raised to mounts.

The characters in *HabitRPG* – the representations of users – are simplified versions of those from MMORPGs. They are described with levels (starting from 1), experience (at every level one needs more to increase his or her level), mana (spent to cast spells), characteristics (strength, constitution, perception and intelligence) and classes (Warrior, Rogue, Cleric, Mage) (Class system, 2014). These characteristics influence the reward system and are important during quests. For example, a character who is a Mage (Mage, 2014) can cast spells, which can damage bosses, recover his or her party members' Mana, or buff his or her party's Intelligence.

But even though there are mechanics similar to MMORPGs (with statistical chances of success or failure, healing, buffs and critical strikes), the core component of task resolution in *HabitRPG* is still the user's sincerity about his or her behaviour AFK.² He or she is the only one who can mark particular things on his or her list as done. There are no peripherals enabled to verify these declarations, while sometimes they are employed in other cases of gamification, like in *Endomondo*, which was discussed earlier (a mobile device is a tracker which feeds data about the user's activity to the app).

Quests are not the only segment of the software that aims to motivate the user using signals from other users. There are also challenges, which are published in the social part of the program. Users can set their own challenges and offer rewards to other competitors, which are given on the basis of their achievements. There are also guilds – groups dedicated to users with common interests, hobbies, or professions (for example there is one for social researchers). They offer the basic functionalities of forums, but also serve as platforms for distributing challenges.

HabitRPG uses all three techniques of gamification enumerated by Mathias Fuchs (2012): ludic method, ludic metaphors and ludic attributes. There is a fixed system of rewards, represented in levelling up, earning money and getting items. There are also clear rules of failure: the user loses health points when he or she fails to complete his or her dailies or when he or she cannot stop following bad habits. Even though the user defines all the dailies, habits and to-dos, the system still provides him or her with criteria of success and mechanisms for resolving conflicts. Every aspect of *HabitRPG* is infiltrated by ludic attributes. The visual material provides allusions to videogames. It is all colourful pixel art similar to modern indie-games and to *Life is a Game* (discussed in the previous subchapter). This allusion introduces a feel of fun and simplification, which resonates with ludic method as in the case of Emberton's guide (2014). *HabitRPG* does not obscure the fact that it gamifies life; rather, it is evident, unlike in the cases of *Endomondo* or *iKamasutra*.

2 AFK – away from keyboard.

Synchronizing HabitRPG

HabitRPG is open-source software, which means that anyone can use its code and adjust it to their needs. But it is also community-driven, which means that users can contribute to the development of the program, including by discussing ideas about further development of the software. They do it through a forum. One of the contributors, "Lyttol", suggests that the system does not punish him strongly enough for not keeping up with his to-dos:

I agree, I'm a newish user so perhaps I don't "get" it yet, but at the moment my movement seems to be fairly one directional, ie more XP. I rarely lose health, mainly because I'm not a naturally punitive character type, and the plenty of carrots works well, but I do feel that it would be good if I was punished for languishing todos, I like the idea of adding greyed out to dos as placeholders, but once activated, they start to hurt if not completed.
- Lyttol

Lyttol suggests that a more punitive system should be introduced into *HabitRPG*. He or she (forum does not provide data about gender) declares a need for greater punishment for failing to make progress in his to-dos. The system of rewards for to-dos gives bigger rewards for completing the tasks marked as red. The colour indicates that this particular to-do was added a long time ago and its completion has been delayed severely. The longer the user delays completing the task, the greater the reward he or she gets when he or she finally ticks it off.

One of the contributors to the forum found his own way to adjust the system to his character:

I've started deleting to-dos and re-entering them before I check them off because I feel guilty about getting 50 XP from, say, changing a dead battery.
- Waldere

Waldere had a similar problem, but found an easy DIY solution. He modified the system without changing its code. When he finishes a delayed task, he does not tick it off, but deletes it and adds a new one, and marks this one as done. This way he avoids getting big rewards for completing delayed tasks. The official *HabitRPG*'s Wikia webpage explains the logic behind this contested algorithm:

The reasoning behind doing it this way is this: If To-Dos diminished in value as they aged, then you would want to do the ones that were red even less, because they wouldn't be worth much after a certain point. Consequently, there would be less point to doing anything you hadn't done right away. With the current system, you have a greater incentive to eventually get around to doing the older To-Dos, especially for things that cannot be done quickly or easily, such as long term goals that take a lot of effort.
"Instant" To-Dos (ones you put on your list only to check them off immediately) may seem to have the lowest value initially, but they also provide an immediate experience, gold, and mana return, which can bring you closer to something you want to buy or an extra spell cast on that day, instead of deliberately waiting for a To-Do to turn red. (To-dos, 2014)

The reasoning presented in this entry suggests that it is all about motivation. The point is to get things done, not to get punished for not completing the tasks.

The discussion presented here suggests that at least some users of *HabitRPG* want to synchronise the system with their ideas about how they should live. They try to make it as motivating as it can be and make the logic of the system as close to the logic of their lives as possible.

There is another part of *HabitRPG* which suggests such behaviour. Upon reaching level 10, a player can, while levelling up, assign points earned to attributes (strength, perception, condition, intelligence). There is a function available which allows the user to decide which habits, to-dos and dailies fall within the scope of the attributes. Having done so, we can tick an option, which will automatically level up our attributes in a manner dependent on which tasks we complete more regularly. If we assign strength to daily jogging, then when we jog, we will earn points in strength.

The whole point of gamification understood in this manner is to tune it with the expected trajectory of one's life.

Hand in hand with neuroscience – habit programming

One of the books *HabitRPG's* official Wikia enumerates on its page entitled “Books that can help” (2014) is Charles Duhigg's *The Power of Habit* (2012). The core concept of Duhigg's book, “the habit loop”, has a dedicated page within *HabitRPG's* official Wikia (The Habit Loop, 2014). This particular book seems to have been an important factor in shaping *HabitRPG*. The discoveries of neuroscience which are presented in this popular science book are perfectly traceable in how *HabitRPG* works.

Duhigg's book explains from a neurological point of view how habits drive people's actions.

Most of the choices we make each day may feel like the products of well-considered decision making, but they're not. They're habits. (Duhigg, 2012³)

To illustrate this thesis Duhigg tells stories of people whom neuroscientists researched in order to understand how human brains work. Some of the had undergone radical self-changes. Some created commercials for basic home supplies so that they fit in with the daily habits of the customers. Others experienced severe brain injuries (Eugene Pauly) but still, even with malfunctioning short-term memory, managed to almost unconsciously complete daily tasks.

3 Numbers of particular pages including given quotations are unavailable, because the version of the book used for the purpose of this paper was a .mobi e-book, which lacks fixed division into pages.

The conclusions of the first part of Duhigg's book are simple: "We now know why habits emerge, how they change, and the science behind their mechanics. We know how to break them into parts and rebuild them to our specifications" (Duhigg, 2012).

HabitRPG seems to be a practical embodiment of the methods described by Duhigg. Let us take a closer look at what Duhigg calls, while telling a story of discoveries in the field of neuroscience, a "habit loop".

He claims that there is a part of the brain which stores habits. When particular procedures are practiced often, they travel from the consciousness to the basal ganglia. When they arrive, they become habits. To perform actions which are habitual, the brain does not need to work so hard – it can save some effort. This principle is illustrated by the example of rats running repeatedly through a maze: "as the route became more and more automatic, each rat started thinking less and less" (Duhigg, 2012, part I, chapt. I). Duhigg explains that this process of turning actions into habits is related to energy efficiency developed during the evolution of animals.

Habits, scientists say, emerge because the brain is constantly looking for ways to save effort. Left to its own devices, the brain will try to make almost any routine into a habit, because habits allow our minds to ramp down more often. This effort-saving instinct is a huge advantage. An efficient brain requires less room, which makes for a smaller head, which makes childbirth easier and therefore causes fewer infant and mother deaths. An efficient brain also allows us to stop thinking constantly about basic behaviors, such as walking and choosing what to eat, so we can devote mental energy to inventing spears, irrigation systems, and, eventually, airplanes and video games (Duhigg, 2012).

With this in mind, habits emerge as extremely positive. They can override consciousness, which is the source of most of the trouble – fear, laziness, apathy etc. So how can one build his or her own habits?

This process within our brains is a three-step loop. First, there is a cue, a trigger that tells your brain to go into automatic mode and which habit to use. Then there is the routine, which can be physical or mental or emotional. Finally, there is a reward, which helps your brain figure out if this particular loop is worth remembering for the future (...). Over time, this loop—cue, routine, reward; cue, routine, reward—becomes more and more automatic (Duhigg, 2012).

And this is also how *HabitRPG* works, at least in terms of rewards given for following self-defined routines. To put it simply, it gives us a piece of cheese for getting to the end of the maze, and finally, through repetition, turns it into a habit. Having done so, it saves our energy and lets us complete the tasks that previously were annoying or difficult regularly and with

ease. A habit loop is like a ludic method in a continuous loop – do what the game wants and you will earn a reward. Do it daily or at least regularly, and this particular routine will become your habit. And your life will be better.

I dare not dwell on discussion as to whether or not a human brain does actually work this way. I am no expert in the field of neuroscience. I treat Duhigg's book and its contents as an actor in the network of the developers of *HabitRPG* and something like an ideological manifesto or a theory instructing their decisions.

In the next, final subchapter, I will tie all the strings together and draw my conclusions.

Do we really want to program our brains?

At the beginning of this chapter I presented a simple program code, which was something like a minimal ludic method. It included a single conditional statement and a pair: reward and punishment, given for obeying or disobeying the rule. In my example it was about eating less than 2000 kcal daily. Other cases of gamification presented in this chapter were concerned with other aspects of life: sex, health (or wellness) and career. They employed ludic metaphors and attributes differently, but they all included ludic methods, even though in the case of *Life is a Game* (Emberton, 2014) the feedback was not automatic (there is no computer technology included, just a manual). Both *Endomondo* and *iKamasutra* gave rewards for doing something that the developers decided was important or healthy. In the case of *HabitRPG* it is different. There is no particular aspect of life which is gamified. It is all about building habits, regardless of what they are. One could even use *HabitRPG* to build habits which are widely seen as unhealthy or bad (smoking, eating fast foods, spitting at people in the streets). And this is why I see *HabitRPG* as a case of gamification in its purest form. It is a complete set of tools for gamifying your life in whichever way you choose.

Going along the lines of Chun's (2005) description of software as ideology, I would dare to say that gamification is a piece of ideological software which obscures not only hardware, but also life itself. It creates a representation of the gamified subject and serves as an intermediary between a brain and a body. It can inform a subject about its social status, health, and productiveness and reward him or her for behaving as the program wants him or her to behave. A gamified human is a human with a program installed in his mind. And gamification is programming humans, so that they proceed along the lines of an algorithm.

Lev Manovich writes that such a situation is “the general principle of new media: the projection of the ontology of a computer onto culture itself” (Manovich, 1999). This makes gamification a perfect case for thinking about the human-machine relations within the collective (Latour, 2009).

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THE DOPAMINE LOOP AND ITS DISCONTENTS. ANALYSIS OF “GAMIFICATION BY DESIGN” AS BIOPOLITICAL POWER/KNOWLEDGE

Krzysztof Pacewicz

The paper analyses the discourse on gamification, as presented in *Gamification by Design* by Zichermann and Cunningham, as biopolitical power/knowledge. The gamification techniques proposed by the book are based on a certain understanding of human nature, often presented explicitly. This “anthropology of gamification” – an eclectic and pseudo-scientific variant of behaviourism – is shown to be a crucial element of the proposed techniques of power. It is also argued that the gamification strategies of management advocated by the book incorporate simplifying procedures and disciplinary techniques to ensure that players play by the rules, and thus can have a substantial effect on social behaviour patterns if widely adopted.

Gamification has recently become one of the dominant trends in many different areas of social life including marketing, commerce, education, healthcare and workforce management. While there has been some debate over the precise definition of the term (Deterding, Dixon, Khaled & Nacke, 2011), it is generally used to describe use of games in non-gaming contexts (Zichermann & Cunningham, 2011, p. XIV).

Even though the term has only been used since late 2000, the process itself is a variant of modern management strategies that were famously described as biopolitical by Michel Foucault. Niklas Schrape (2014) correctly states that:

this mode of regulation takes Michel Foucault’s concept of a liberal governmentality to the extreme. Within it, the subject is constructed as a free player in a defined rule-space. So far, the biopolitically appropriate behaviour of the players had to be ensured by negative feedback-techniques like punishment

and deterrence. Now, gamification allows for effective behaviour regulation via positive feedback. (p. 21)

In my chapter I will analyse gamification as a biopolitical strategy for controlling human behaviour through methods that attempt to mimic the mechanics of games. I will focus on the discourse about gamification rather than the techniques themselves, and the subject of my study will be the well-known book *Gamification by Design* written by Gabe Zichermann – a vocal proponent of gamification, called by some “the godfather of gamification” (Chanel 4, 2013) – and Christopher Cunningham. *Gamification by Design* constitutes a perfect subject for a case study not only because it is one of the most widely read books on gamification, but also because it has the form of a manual for businessmen, openly stating its biopolitical objective:

The House Always Wins (...) As markets gamify and consumer demand for fun, engaging, and creative experiences increases, you have a fundamental choice: either be the house, or get played.
Trust us, you want to be the former. (p. 13)

According to Zichermann and Cunningham, modern society is rapidly adopting gamification as a matrix of power relations – most people only “get played”, but those who create games and define the rules constitute a privileged group of “winners” – that is, those who benefit (mainly financially) from the new gamified reality. *Gamification by Design* is meant to be a tutorial for those winners *in spe* – entrepreneurs who already find themselves in privileged positions within the economic relations, but lack the knowledge of how to adapt to the new gamified markets. The book therefore contains information on how to exercise power, not unlike, *mutatis mutandis*, Machiavelli’s *The Prince*. And can there be a better object for analysis of a discourse of power than a “power manual”?

However, just like *The Prince*, the discourse on gamification does more than just advocate a specific set of power techniques – it elaborates on a certain anthropology, a set of presuppositions about human nature. The proposed strategy for acquiring power is based on a specific understanding of the human psyche, on a quite peculiar knowledge about the mechanics of human psychology and biology, which it seeks to exploit in order to produce profit, and therefore it constitutes a model biopolitical discourse, a contemporary power/knowledge strategy.

Power/knowledge

Gamification by Design advocates a specific vision of human nature. This anthropology is analysed later in detail, but it must be generally noted that the presuppositions about human nature are coupled with proposed management techniques.

The arguments in the book are usually structured in such a way that a specific thesis on human nature is coupled with a specific technique of gamification. While the proposed techniques of gamification are mostly either original ideas created by the authors or their observations on the latest gamification trends, the vision of human nature is definitely not: the anthropology (concept of human nature) of the book is based on certain scientific or pseudo-scientific theories, business experience (case studies) and common knowledge about life.

The status of the information presented in *Gamification by Design* is therefore dubious – it is by no means scientific or academic, neither is it strictly practical. On one hand, it is an eclectic mix of scientifically proven facts, pseudo-scientific theories and appeals to commonsense, and on the other, a set of claims about the effectiveness of certain gamification techniques.

However, the fact that the knowledge about human nature presented in *Gamification by Design* is epistemically questionable should not be interpreted as evidence of a defect of the book. It should rather be seen as a necessary element of a power strategy: a subjectivation technique, defined by Butler as “disciplinary production of the subject” (Butler, 1997, p. 95). In order to implement gamification as a management strategy, its subjects – human beings – have to be perceived as gamers: their desires, motivations and actions interpreted in relation to gamification techniques. The result of such a power/knowledge strategy, if applied consistently, can be a gamified social environment in which the possible actions that subjects can undertake are based on a predefined anthropology, and therefore limited (Schrape, 2013, p. 5). Subsequently, within this gamified environment, subjects may actually act as if they were gamers, “proving” the knowledge by submitting to the power of gamification techniques.

Rules of the gamification discourse

Before we move to analysing the content of the gamification discourse it is worth exposing its general characteristics: its producers, consumers and form.

Both the producers and the consumers of the discourse presented in *Gamification by Design* are entrepreneurs: people in the position of power, or at least aiming for such a position, seeking financial gain. Ultimately, the gamification discourse itself is a product – a marketing strategy – meant for sale. This has an enormous effect on the form of the discourse – it is not only a proposition of a power technique but also, at the same time, an advertisement of this technique. Gabe Zichermann, the author of *Gamification by Design*, is the CEO of Gamification.com, a company which organises fairly expensive “gamification workshops”, and Dopamine Inc. – “a creative agency focused on fun, innovative, gamified campaigns for employees and consumers” (<http://dopa.mn>).

As a result, the form of the gamification discourse is designed to appeal to a broad spectrum of entrepreneurs, all of them potentially customers of Zichermann's services. This may be the reason why the information presented in the book is often based on the most famous, though not necessarily the most up-to-date, scientific theories (e.g. Pavlov and Skinner) (Zichermann & Cunningham, 2011, p. 40) and "common sense". Furthermore, arguments about human nature lacking scientific grounding or even logical consistency are often used because of their persuasive power – they are meant to be simple, concrete and give easy answers to difficult questions, answers that entrepreneurs may grasp immediately and without too much effort.

According to a typology presented by Sebastien Deterding, the discourse on gamification presented in *Gamification by Design* clearly exemplifies the "rhetoric of reinforcement" (Deterding, 2014, p. 22), one of the most common ways of understanding gamification. Deterding states that:

proponents of the reinforcement rhetoric appeal to science but ultimately operate on a folk theoretical understanding, amalgamating knowledge of often obsolete and even mutually contradicting bodies of research (e.g. Maslow's hierarchy of needs with behaviorism, cf. Wu 2012), filtered through pop science. (p. 23)

This is clearly visible in *Gamification by Design*, which presents an extremely simplified picture of the human psyche, almost entirely based on the concept of reinforcement, understood in behavioural terms. This rhetoric, though scientifically obsolete, has – according to Deterding – an obvious advantage:

In the rhetoric of reinforcement (as in behaviorism writ large), intention, and cognition are seen as mostly epiphenomenal. Behavior is explained – that is, mathematically modeled and predicted – as the relation of the observable previous history of reinforcement of an organism and its current environment of observable stimuli (see Linehan, Kirman & Roche, this volume). This 'engineering' view of human behavior, coupled with a focus on data and predictive modeling, seems to resonate with the existing mental models and practices within software and technology companies. (p. 22)

This is precisely the way in which *Gamification by Design* uses the reinforcement rhetoric – the engineering view of human nature appeals to entrepreneurs because it provides a simple action-reaction model, easy to grasp and easy to implement in product design.

The anthropology of gamification

As I have stated, while the anthropology presented in *Gamification by Design* is somewhat eclectic, it does constitute a fairly consistent model of the human psyche. I will outline the authors' assumptions about human nature and show how they are connected with their proposed gamification techniques.

Innate drives

According to Zichermann and Cunningham, every human being is naturally equipped with strong drives, which stand at the root of different motivations. The effectiveness of gamification techniques relies on whether they are able to take advantage of these drives in order to induce the motivations desired by game designers.

The chapter "Player Motivation" opens with a somewhat peculiar reference to sex and violence (presumably meant to represent *eros* and *thanatos*, the basic drives according to psychoanalysis):

From Greek mythology to daytime soaps, it is clear that sex—or the drive to have it—will make a person do almost anything. Paris' abduction of the lovely Helen of Troy led King Menelaus to begin the Trojan War. (...) However, unlike games, sexual attraction is hard to predict and control, making it a less useful tool in engagement. Similarly, violence can yield unparalleled coercive results. Putting a gun to a person's head will likely get him to accomplish any task you request. However, chances are he won't enjoy a second of it, and he certainly won't come back for more. (...) Games, however, hit the sweet spot. They marry the desire-drive of sex with the predictability of duress—except without force and, when successful, driven entirely by enjoyment. (Zichermann & Cunningham, 2011, p.15-16)

According to *Gamification by Design*, games constitute a middle ground – a "sweet spot" – between the two basic drives, a clever way of using both *eros* and *thanatos* in order to motivate a human being to undertake certain actions. The power of games derives from the fact that they exploit the basic instincts implemented in the human psyche by nature itself. In order to be successful, a game designer has to mimic nature by creating situations in which players' natural drives kick in.

While this description might suggest that *Gamification by Design* presents a psychodynamic vision of the human mind (driven by deep unconscious forces), such a statement is far from the truth. In fact, the human psyche is understood mainly in behavioural terms: the natural drives and instincts are thought to be the basic objectives, sought by our somewhat animal and automatic brains:

(...) we are trained to “thin-slice” all kinds of situations and people. Our animal brains are wired to make snap decisions about friend or foe, and then ask questions later. Casual and social game designers understand this incredibly well. They think about players entering a funnel, so they aim to maximize the value and effect of that first minute. Train and engage, but don’t overwhelm. (p. 59)

While the game designers have to keep in mind the basic drives of the human psyche, there is no need to employ any psychoanalysis – the key to success lies in understanding the automatic reactions that guide humans’ actions. According to *Gamification by Design*, humans are naturally equipped not only with powerful primary drives, but also with a set of secondary objectives and behavioural strategies for pursuing these objectives.

So, even though understanding the basic drives is important, it is really crucial that game designers know the secondary objectives, fixed instincts common to all people, called by Zichermann and Cunningham “things that people like”. On page 80 of *Gamification by Design* the authors present a list of twelve “things that people like”:

Pattern Recognition; Collecting; Surprise and Unexpected Delight; Organizing and Creating Order; Gifting; Flirtation and Romance; Recognition for Achievement; Leading Others; Fame, Getting Attention; Being the Hero, Gaining Status; Nurturing, Growing. (p. 80)

While the list seems fairly random, the authors believe that these twelve objectives/instincts are the most important for game designers as they are intrinsic motivations which can be exploited by carefully planned game mechanics. Zichermann and Cunningham assume that “thing that people like” are natural instincts rather than learned strategies, even though they do not base their opinion on academic findings. For example, when describing the instinct to collect, they state that “[c]ollecting is one of the most powerful instincts among humans. Despite this strong proclivity, few rigorous studies have been done to identify the motivations behind collection” (p. 83).

It is worth noting that in addition to presenting knowledge of player’s “psychology”, the authors offer some “sociological” insights. After all, when it comes to playing a game, “the average person is looking to socialize—not win” (p. 23), and thus it is crucial for game designers to understand how humans’ innate drives shape their social interactions. For instance, the authors claim that “status drives much of our actions, and it forms a critical part of how we understand ourselves in context and relation to others. Status is so ingrained in our society that even those who renounce the system often derive their sense of self from the degree to which they reject it (e.g., anarchists, punk rockers, bike messengers)” (p. 92).

The authors assume that our society is status-based because of a natural, innate drive towards status: “a big, complex, and omnipresent human desire” (p. 92). However, this “desire” is perceived in a very specific way – as a strategy for playing the social game: “it can be understood

simply as a system for determining where and how we fit into a hierarchy” (p. 92). Ultimately, the shape of human society is determined by the innate strategies of individual “players” pursuing their personal goals – in the case of status, trying to determine where and how they fit into a hierarchy. The sociology of *Gamification by Design* is thoroughly atomistic.

Therefore, the game designers’ job is simple – the game mechanics should mimic the world to which the human psyche is adapted (e.g. create artificial social hierarchies) to unleash the individuals’ natural drives. However, in order to create a sustainable gaming experience – to keep the drives unleashed for good, and subsequently make a profit – the game designers must understand and learn to make use of a process that may be termed the “dopamine loop”.

The dopamine loop

Throughout *Gamification by Design* there are abundant suggestions that the real key to a successful gamification strategy is using dopamine loops (which could also be called reinforcement loops). The dopamine loop is an extremely simple concept: according to Zichermann and Cunningham, “brain scientists all over the world agree that games’ challenge-achievement-reward loop promotes the production of dopamine in the brain, reinforcing our desire to play” (p. 4). This foundational psychological mechanism can be shown schematically:

challenge -> achievement -> reward -> production of dopamine -> desire reinforced

How does it work in practice? Zichermann and Cunningham present an easy to grasp example: according to them, most children are genetically programmed not to like broccoli (p. XIV). How do we persuade them to overcome their natural limitations? The answer is simple: “Make eating the broccoli both more fun (with a little game) and more rewarding (with a little cheese sauce, or dessert afterwards). The interplay among challenge, achievement, and reward not only allows you to train children to eat their broccoli, but it releases dopamine in the brain, intrinsically reinforcing the action as biologically positive. (...) Heck, your kids might even show their friends how to turn broccoli into dopamine” (p. XV).

While *Gamification by Design* sometimes makes references to academic psychology, it is impossible to recognise the dopamine loop as a scientific concept. Rather, it seems to serve as a pseudo-scientific explanation for the effectiveness of gamification as a reinforcement strategy (to learn more about “neuromyths”, see Przegalińska, this volume, p. 49). It should be noted that dopamine is no ordinary neurotransmitter – in recent years it has become very well documented in the media. According to an article by Dr. Vaughan Bell in “The Observer”:

If there were a celebrity among brain chemicals, it would be dopamine. Supposedly released whenever we experience something pleasurable, it's forever linked to salacious stories of sex, drugs and wild partying in the popular press. The Kim Kardashian of neurotransmitters, it gives instant appeal to

listless reporting and gives editors an excuse to drop some booty on the science pages. (Bell, 2013)

It seems that the authors of *Gamification by Design* use the widespread knowledge of the existence of this particular neurotransmitter and the interest it attracts in order to appeal to the general public rather than to present a scientific description of brain functioning. Furthermore, it should be noted that Gabe Zichermann attempted to use the popularity of this “Kim Kardashian of neurotransmitters” by naming his creative agency, founded in 2011 – the year *Gamification by Design* was published – “Dopamine Inc.”.

The dopamine loop can therefore be treated as a pseudo-scientific metaphor for a “reinforcement mechanism” motivating the player to keep on engaging in the game. According to *Gamification by Design*, the loop works correctly when both the challenge and the reward are designed to satisfy natural human drives. This is especially important in regard to the rewards: any gamified product must have a complex reward system to keep the players engaged.

Zichermann and Cunningham are certain that status serves as the most convenient reward: “If you don’t have a ton of cash to give away as an incentive (who does?), status is an excellent alternative. It is a great driver of loyalty, not to mention a player’s fiscal behaviour (...) Importantly, this [status] ranking system need not be based on the real world at all—it works perfectly in a purely constructed environment” (p. 10). So, of all the natural instincts, the drive for status is the most useful when designing a dopamine loop – game designers should take advantage of this innate proclivity by constructing a virtual social hierarchy and motivating the players to compete for positions. This strategy is based on an assumption about natural human competitiveness: this is why the authors urge game designers to create leaderboards in such a way that every player can see himself right in the middle of it. “Below him, he will see friends who are on his tail, and above him he will see exactly how close he is to the next best score. And he will know exactly what he has to do to beat it” (p. 51).

As one can see, the basic mechanism of gamification as proposed by Zichermann and Cunningham – the dopamine loop – is easiest to achieve if the game itself induces players to compete for virtual status and get their virtual rewards from winning. In such a scenario, the only real winners are the game designers. Therefore, the model of gamification proposed by *Gamification by Design* indeed resembles a casino, where the house always wins.

Social engagement loop

Zichermann and Cunningham again employ the concept of a reinforcement loop when describing the social dynamics of gamification. One could say that the “social engagement loop” is a particular type of dopamine loop, crucial to the long-term success of the game. How does it work?

In a social engagement loop, a motivating emotion leads to player re-engagement, which leads to a social call to action, which flows to visible progress and/or rewards, which loops back around to a motivating emotion. (p. 67)

A social engagement loop is therefore a version of the dopamine loop in which both the challenge and the reward are designed to produce social engagement. Since humans have a natural tendency to socialise and a natural drive towards status, it is not that difficult: for example, the challenge can be to post your result or opinion on a social network. In this scenario, the reward consists of attention and fame received from other users. This reinforces the desire to continue playing the game (the dopamine loop) and at the same time creates a social viral effect: others may become interested in the game and start playing themselves.

Of all the “things that people like” – the natural proclivities of human beings – some are especially useful to the creation of social engagement loops. In addition to the somewhat obvious “Fame, Getting Attention”, “Recognition for Achievement” and “Gaining Status”, one has to consider “Gifting” (p. 86) and, last but not least, “Flirtation and Romance”: “Remember: in cultures with great social distance (including the United States), an element of flirtation can be critical for forming viral, social loops” (p. 87). However, game designers do not need to be too creative when designing social engagement loops, as “any product or service that has ranking, points, and favourites is likely to produce a fame or attention-getting loop” (p. 89). Humans are natural socialisers and therefore, according to *Gamification by Design*, it is enough to design a system and the innate social drives will kick in.

It has to be pointed out that gamification strategies based on the concepts of the dopamine loop and social engagement loop are exemplary specimens of contemporary biopolitics – the power techniques are designed to follow and foster natural processes (drives, loops) in order to gently guide the behaviour of subjects onto the desired path.

However, the understanding of human nature presented in *Gamification by Design* is not based on any solid scientific knowledge, but rather is extremely simplified and very selective – to put it mildly (see Deterding, 2014, p. 20). This is perhaps why the biopolitical strategies of gamification – in order to work “properly” – require simplifying procedures and disciplinary techniques, eliminating any unusual behaviour from the games and ensuring that players play by the rules.

Simplifying and policing the system

According to *Gamification by Design*, humans are generally speaking happier when their choices are simpler. This thesis, backed by the personal experience of the authors and Barry Schwartz’s paper *The Tyranny of Choice* (Zichermann & Cunningham, p. 71), leads Zichermann

and Cunningham to advise against designing overly complex gamification systems, or – to put it precisely – to make sure that even in complex gamification systems the options individual players have are limited, since “when it comes to gamified options, it isn’t good to reveal the entire complexity of the system upfront. Give the player just enough choice to engage him without overwhelming him” (p. 71).

The authors believe that by simplifying the system it is possible to predict the desired behaviour more easily, ensure the happiness of the player and thus create a dopamine loop. Players should not be given more than one choice at a time – this “minimization of complexity contributes substantially to their happiness” (p. 71). Simplifying the player experience is especially crucial at the early stages of the gamified system – authors go so far as to propose eliminating all choices whatsoever from the beginning of the game in order to ensure proper functioning of the dopamine loop:

At the tutorial level (level zero), there should be no choices. A player should be offered an action at which he cannot fail. Then, he should be rewarded for successfully completing that action. (Even a “Well done!” or a hearty, “I agree,” places your player squarely in a very seductive positive-reinforcement loop). (p. 61)

While the complexity of the game should slowly rise, it is crucial to keep the player behaviour entirely predictable and under control. The fewer options players have, the easier it is to draw them into reinforcement loops. Zichermann and Cunningham make it clear that the real complexity of the system might be substantial, but should be only visible to game designers and supervisors, who are not supposed to “play by the rules”, but rather intervene arbitrarily in order to ensure correct performance of the game mechanics. It is crucial that the gamified environment is not left to chance but rather meticulously controlled: “game designers leave nothing to chance” (p. 75).

In order to explain how to control a gamified system, *Gamification by Design* brings up the story of early online poker companies, which would hire poker players to fill the virtual poker rooms so that the new players would always find a match. “No matter your level in the game, designers made sure that a player of your ilk matched to you. If you were an expert, so was the paid player” (p. 75).

In order to keep the player behaviour simple and predictable in a complex system, there is a vital need for arbitrary policing, namely supervisors equipped with disciplinary prerogatives. The players will not always play by the rules and their behaviour will not always be standard. Zichermann and Cunningham warn their readers openly: “[d]o not be mistaken: people attempt to exploit any system in which there is something they deem of value” (p. 72).

A clever way of policing the system is to create admin positions and give them away as “rewards” to the most loyal players – this not only saves the resources needed to employ a disciplinary admin workforce, but also creates new rewards – “power, as mentioned, is one of the most motivating and enduring rewards in any system” (p. 72). The admins should be allowed to “look for unusual behavior” and be able to “take immediate and decisive action” (p. 73) against those who do not behave normatively – that is, those who do not play by the rules.

It seems that simplifying and policing the system are two sides of the same coin – while most subjects fit within the desired behaviour paths, there remains a minority whose unpredictable behaviour might endanger the consistency and predictability of the whole system. This is why every gamified solution needs some disciplinary policing; this model of power relations seems to fit well within contemporary biopolitics as such, which – according to many theorists – generally tends to resort to “soft” power in the central zones of the structure of social control, but still uses “hard” disciplinary techniques on the margins, directly policing those who do not “control themselves” (see Ajana, 2005; Foucault, 2003, Hardt & Negri, 2000).

Conclusion

Gamification techniques – as proposed by Zichermann and Cunningham – are definitely based on an odd, extremely simplified and utterly non-scientific model of the human psyche. But does this mean that they cannot be effective? As some critics argue, this is not the case. According to Nicolas Schrape (2013), “the gamification metaphor directly feeds back into reality. It motivates behaviour outside of the interactions with the computer. And isn’t it plausible to think that the way we talk about this behaviour influences the way we think about it?” (p. 5)

The disciplinary power of late classicism and early modernity – as described by Foucault in *Discipline and Punish* (Foucault, 1977) – can serve as a useful analogy: when a simplified and non-scientific anthropology gets fused with powerful mechanisms of control, it can deliver tremendous results. If the behaviour options are successfully narrowed – in order to be consistent with an “abstract” model of the human psyche – the model can feed back into social reality and become “real”; that is, it can produce powerful effects.

In a well-designed gamified mechanism, subjects have to act as model gamers in order to reach their objectives. The problem is that participation in those mechanisms may not be voluntary – education and workforce management are some of the areas where gamification techniques are being introduced most rapidly. An employee might have no innate gamer’s instinct, but he/she will nevertheless have to compete with their colleagues for points or badges in order to get a pay rise or a promotion. The same applies to students of primary schools.

This phenomenon is a model example of biopolitical subjectivation – subjects of gamified power techniques have to learn to play by the rules, even if the game mechanics do not “contribute substantially to their happiness” (Zichermann & Cunningham, 2011, p. 71). Even if the “dopamine loop” is just a fiction, the rise of simplified and well-policed gamified strategies of control is very real and so may be the rise of a new generation of “gamified” subjects. The somewhat detached and odd discourse presented in *Gamification by Design* might in fact produce substantial changes in social behaviour patterns – if, of course, it manages to influence those in positions of power.

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GAMIFICATION: PLAYING WITH NEUROSCIENCE

Aleksandra Przegalińska

This chapter addresses the relation between neuroscientific self-quantification devices and quantification/gamification procedures. It is mainly based on the example of Melon – a headband and an app to measure focus on a daily basis. My aim is to show the dual nature of links between gamification/quantification regimes and neuroscience (in particular neuroimaging) with its ability to present our neural activity as transparent. Both gamification and quantification – in my understanding – aim at general behavioural change, resulting in outcomes perceived as positive. In this chapter I will try to show how these regimes interfere with neuroscience in order to become even more persuasive and, essentially, successful.

The chapter starts with a general introduction to gamification/quantification as well as quantified self-tracking, and then presents types of quantified self-tracking tools that introduce aspects of gamification. This section is followed by close examination of Melon, a set comprising a headband and mobile app that analyses the activity of its users' brains in order to provide tips on how to stay more focused. The last section of the chapter takes a closer look at the newly established relation between gamification and quantification regimes and neuroscience and how neuroscience is used and transformed to serve them.

Introduction

Gamification and quantification regimes aim at general behavioural change, resulting in outcomes perceived as positive (such as weight loss, workplace productivity, educational advancement, or consumer loyalty). Gamification is the use of both game thinking and game mechanics in non-game contexts to engage users in solving problems. It combines the playful design and feedback mechanisms from games with users' social profiles in non-game applica-

tions. It offers the pleasures of play, and nurtures the desire to level up and, ultimately, win. Quantification, on the other hand, provides real-time feedback about users' actions by amassing large quantities of data and then simplifying it into various fairly understandable modes (progress bars, graphs, charts, etc.). Quantification of the self relies on collecting, collating and analysing minute data and providing feedback on how to better care for one's self. The term "care of the self" refers here, quite obviously, to the later work of Michel Foucault (1988), who closely examines Socratic dictates to care for oneself and know oneself. Foucault argues that through this self-reflection and -care, individuals come to see themselves as responsible for constituting themselves, including as moral subjects. This care for oneself is achieved in knowing how to live through abstinence, regularly subjecting oneself to a thorough examination of one's conscience, and achieving a general state of being in mastery. For Foucault, there is a certain pleasure associated with this control. This is exactly the point when quantification and gamification mechanisms step in. Currently, we could say that the Socratic dictates identified by Foucault and transformed into gamification and quantification regimes are an explicit part of the neoliberal project (Morozov, 2014, p. 269-301). Appealing design, immediate feedback, social contacts and a "fun" dimension are applied in order to attract participants. 200 million hours are spent each day playing computer and video games in the U.S. By age 21, the average American has spent more than 100 hours a month playing (von Ahn & Dabbish 2008). This kind of play is not to be mistaken for play understood as a non-serious pursuit that provides downtime from the responsibilities of daily lives. Here however, it is worth noting that as early as 1961 Erving Goffman has argued – along with many other prominent sociologists, historians, and anthropologists (Caillois 1961; Huizinga 1955) – that play was indeed a serious form of social interaction that required a more nuanced definition. Currently, for many complex reasons, play as we knew it has been replaced or supplemented by gamification. And gamification has become combined with quantification to a degree never known before.

An important aspect of current gamification is that it is applied to non-play spaces. Game developers and designers define gamification in terms of utilising game mechanics, technology, and development techniques from games in non-game spaces, while those from outside the industry generally equate gamification with adding points, leaderboards and badges to non-game activities. Epitomised by online technologies such as Nike+, Mint, and Foursquare that pledge to make everyday tasks such as exercising, financial planning and socialising more enjoyable, gamification proponents promise to make real life more like a game. The applications of gamification are diverse and wide-ranging, including, to name a few, car dashboards that use mini-games and graphic visual feedback to reward reduced fuel consumption; software that allows users to set, track, and achieve financial management goals; websites that reward

users who post interesting comments with reputation points and recognition; programs that promote healthy eating habits using points; and a raft of fitness and weight loss coaches for game consoles.

Gamification practices, operating under the umbrella of play, foster a quantification of the self, collecting, collating and analysing minute data and providing feedback on how to better care for one's self. This quantification of the self feeds into neoliberal governance projects that promise to make daily practices more fulfilling and fun.

Now, quantification and gamification of the self rely on procedures of various self-governance projects that promise to make daily practices more fulfilling. Enabled by increased levels of surveillance (for instance, by self-monitoring) these projects use incentives and pleasure rather than risk and fear to shape desired behaviors. Metering technologies provide users with both instantaneous and long-term feedback on the outcomes of past practice, thus influencing future behaviour.

Data collection in gamification and quantification is followed by visualisation of this data and cross-referencing, in order to discover correlations, and provide feedback to modify behaviour. As Pantzar and Shove note, "once equipped with a heart rate meter, an individual becomes a knowable, calculable and administrable object" (2005, p. 4). All measurements of this kind feed into circuits of reproduction, making performances visible and thus reproducible. This monitoring becomes a connective tissue essential for the reproduction of everyday practices, linking micro-level performance to the macro-level scale, while simultaneously spanning past, present, and future and presenting it in a rich but understandable manner.

More importantly, methods of metering construct the practices they sustain (cf. Pantzar and Shove 2005, p. 2). Data flowing from metering become institutionalised forms of memory implicated in larger patterns of continuity and change. The results are made evident through long-term record keeping.

When we subject ourselves to this quantification, we get more reassuring feedback concerning our progress towards knowing and mastering the self. Our daily achievements sum up to large scale trends that both confirm and shape transformations we have striven for. The next move to enhance both gamification and quantification procedures is to introduce "hard science" to prove their effectiveness. Actually, it is not a new tendency to use neuroscientific techniques to make that transformation "happen". The practice of using neuroscience to design gamification patterns has long been known. It is a new phenomenon, however, to use neuroscience to make that transformation visible. The techniques used by neuroscience have expanded enormously, from cellular and molecular studies of individual cells to imaging of sensorimotor tasks in the brain. Cognitive neuroscience has provided studies of mechanisms underlying cognition with a focus on the neural substrates of mental processes. Computa-

tional neuroscience of brain function has added knowledge concerning the information processing properties of the structures that make up the nervous system. By means of all these techniques, neuroscience claims to make our brain activities transparent. This is why it became an object of interest for organisations and industries that implement gamification/quantification procedures in the first place.

Neuroscience played an important role for gamification/quantification regimes as it allowed the implementation of those mechanisms that under neuroscientific scrutiny seemed to work best. Afterwards, it allowed researchers to check the results of the mechanisms implemented and reinforce those behaviours of users which were most desired. Currently, however, it is no longer a question of what to research in order to construct state of the art gamification/quantification procedures. It is all about the use of neuroscience within gamification/quantification regimes, as part of the measurement and play.

Types of quantified self-tracking tools

We can define quantified self-tracking as a regular collection of any data about the self that can be measured, such as biological, physical, behavioural or environmental information. Additional aspects may include the graphical display of the data and a feedback loop of introspection and self-experimentation. Quantified self-tracking is currently being applied to a variety of life areas including time management, travel and social communications as well as in the context of health. In the past, the cost and expertise needed for working with large-scale datasets and visualisations limited access to such work to professionals. However, these costs have decreased significantly. Furthermore, improvements in tools have made data collection and manipulation more available to the individual.

As already mentioned, quantified self-tracking first occupied the health sector and then became visible in wellness and recreational sport activities. With biomarker testing, health metric tracking was traditionally an expensive one-off process ordered by physicians for patients in response to specific medical risks. Two of the biggest applications in doctor-driven health metric tracking are cardiac monitoring and telemedicine (remote diagnosis) where implantable, worn or handheld devices transmit data wirelessly to medical professionals.

A number of different initiatives are attempting facilitate participatory health, including the emergence of Internet-based social networking communities together with low-cost newly available technology like genome sequencing and bio-monitoring applications and devices.

The increasing ease of capturing, storing and manipulating data has given rise to a variety of websites for sharing datasets and visualisation tools, for example IBM's ManyEyes (<http://manyeyes.alphaworks.ibm.com/manyeyes.>), Swivel (<http://www.swivel.com>), and FlowingData (<http://flowingdata.com>). There is also a variety of other health monitoring websites and devices currently available focusing on the consumer self-tracking market, in addition to social network-based health self-tracking. They generally have some level of free services but are non-automated, meaning that users must input their own data. The websites may accept data via the Internet, text and instant messaging, smartphone data applications, audio messages or other mechanisms.

At least two interest groups formed in the second half of 2008 to explore, brainstorm and share their self-tracking experiences: Quantified Self (<http://www.quantifiedself.com>) in the San Francisco area and HomeCampInt (<http://homecamp.org.uk>) in London. An underlying assumption for many self-trackers is that data is an objective resource that can quickly bring visibility and information to a situation, and that psychologically it should entail an element of empowerment, control, and fun. The goal is not only to gain access to data, but also to build a motivational system that helps with removing harmful habits from daily routines. This is where gamification steps in.

The Quantified Self community is a fast-developing movement where both health enthusiasts and diagnosed patients meet in an environment of trust to share the quantified self-tracking projects they have been working on in the format of monthly show-and-tell groups.

As of July 2014, the Quantified Self community, after only six years of existence, held more than 105 worldwide group meetups with thousands of participants. The two strongest meet up groups meet on a regular basis in San Francisco and New York to test the functionality of such devices as Melon. They test applications that apply quantification and gamification to self-manage time spent on creativity and productivity, and, for instance, to monitor and upgrade achievements in sport.

Obviously enough, the way in which an individual understands himself or herself in regard to wellness, health and health research is changing. In the past, n equalled someone else, the population average, which may or may not have applied on an individual basis; now, ' $n = me$ ' and the information applies directly.

Further, there is the idea of ' $n = we$ ' developing, as self-experimenting individuals come together in health collaboration communities like Quantified Self, or DIYgenomics, Patients-LikeMe, and Genomera that make their $n = 1$ discoveries less anomalous, and statistically significant.

These groups gradually tend to resemble social movements, including in their claims on what it essentially means to be a citizen. They advocate data-sharing, studies of participation, and more proactive health self-management, and responsibility-taking performed in a playful manner. Quantification is here reinforced by gamification: discipline reinforced by play. This, however, seems not to suffice for the group to grow and strengthen its global presence. Thus, in order to support the group's self-identification and general claims, scientific rigour needs to be introduced.

Melon

Melon is a headband and mobile app duo that joins the family of self-tracking devices and is clearly designed for people interested in self-quantification. Melon is being advertised as a device that allows the user to gain insight into how their mind works by tracking focus during any activity of users' choice. Its very revealing motto is: Understand yourself. Learn differently. Melon tracks the users' focus in relation to their activity, environment, emotions, and "any other behavior" of their choice. The core Melon team includes Arye, Laura, and Janus (the users do not get to know their surnames), specialists in human-centered design. They inform the user in a short video on a website devoted to Melon (<http://www.thinkmelon.com/>) that they have combined their backgrounds in cognitive science, computer science, measurement devices, electrical engineering, and product design to create Melon.

The Melon headband uses electroencephalography to measure brain activity. From this activity, Melon's algorithms detect users' focus, and then use this data to give the users personalised feedback on how to improve. The founders also mention that they have partnered with a top producer of EEG signal processing chips to access the best available algorithms for mental state detection. The introduction into what is blackboxed in Melon begins with a fairly simplified description of what is happening in the human brain:

The brain consists of billions of interconnected neurons. When a single neuron fires, it creates an almost imperceptible amount of electrical charge. During normal waking states, millions of neurons are firing collectively in your brain. The cumulative electrical activity that results can be measured on the forehead as brainwaves (ThinkMelon).

Melon measures this global electrical activity by placing three electrodes on the forehead, with the primary electrode on FP1. This allows Melon to monitor brainwave activity in the pre-frontal cortex. Melon is partnered with NeuroSky, one of the leaders in consumer EEG technology. The Melon system benefits from NeuroSky's experience with signal amplification (which makes raw brainwave signals stronger), filtering protocols (that eliminate known noise frequencies such as muscle movements and pulse), and notch filters (that eliminate electrical noise from the grid, which varies between 50Hz and 60Hz, depending on geographic

location). Filter technology remains at the forefront of NeuroSky R&D. The NeuroSky chip, used by Melon, filters out the ambient waves present in most uncontrolled conditions and measures neural activity in virtually any condition with 96% of the accuracy of similarly configured research grade EEGs. Information concerning the EEG's reliability is certainly important, as consumer EEG technologies have been reported as unreliable and imprecise in the past.¹

Most certainly, Quantified Self enthusiasts will be interested in these details and in how to make use of the portable EEG that Melon provides. Nonetheless, many other end-users are mainly preoccupied in the results of Melon, not its design. Thus, the founders provide simple and concise descriptions that link the design of the product to its functionality. For instance, the Melon headband is:

[M]onitoring your brain to teach you about your cognitive performance. Melon's brainwave monitoring headband listens to the electrical activity naturally given off by your brain. Using Bluetooth 4.0LE, Melon connects to your phone to help you track and train several mental states, including focus, meditation, and relaxation. The mobile app lets you understand how your behavior affects how you feel and teaches you how to improve.

The tracker, on the other hand,

“tracks your focus, relaxation, or meditation during any activity you choose”.

The app grabs data about your location, who you're with, and anything else possibly relevant to your mental state. You can add tags about what you ate, drank, and how you're feeling. All of this data is used to spot trends about what may be positively or negatively affecting your mental state. Real time tips alert you when you need to take breaks to maintain your focus, relaxation or meditation.

Tune is a digital expert that helps tuning “your mind to your desired mental state”.

Melon gives you tips that help quickly guide you to your desired mental state. Use this section of the app to prepare for an event or performance. Tune is about giving you confidence in your ability to get focused or unwind whenever you need.

1 For instance, it is well known that noninvasive technologies for the study of human brain activity suffer from the requirement that subjects avoid gross movement during recording. Movement degrades signal quality, and this problem is commonly dealt with using one of two strategies. Firstly, signals recorded while subjects show explicit behaviour are discarded, which results in asynchronous brain and behaviour sampling (see Debener et al. 2012). Secondly, only movement-constrained behaviour is allowed. Accordingly, the validity of neurocognitive theories remains poorly understood in the context of unconstrained human behaviour.

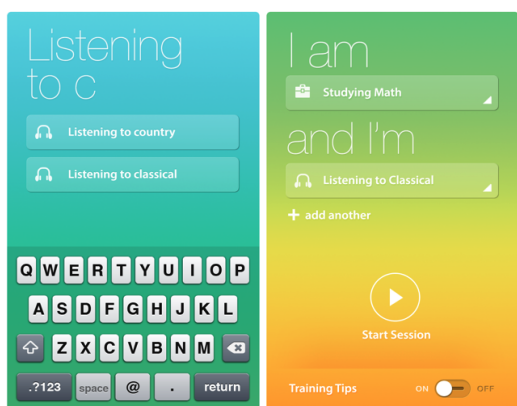
And, last but not least, train is a set of games based on the science of neurofeedback “to learn how to focus, relax, and meditate better”:

Our first game allows you to fold origami with your mind. The faster you get into your desired mental state and the longer you sustain it, the faster you can complete a fold. Each new creature you unlock will be more challenging than the last. Training your brain has never been more fun, and your friends and family will be impressed with your collection of creatures, indicative of your progress!

Now, Melon’s presentation on Kickstarter² began with the following words:

Daily life can be complicated, cluttered, and confusing. We at Melon believe that when people improve their focus, they feel more mindful, confident, and productive in their everyday lives. That’s why we are turning to you. We need your help in order to manufacture and deliver our first large-scale run of the Melon headband. And, we are eager to listen to your feedback once you receive your Melon. If you believe in our mission, our dream, or if you just really like us, then please purchase a Melon or donate to this project!

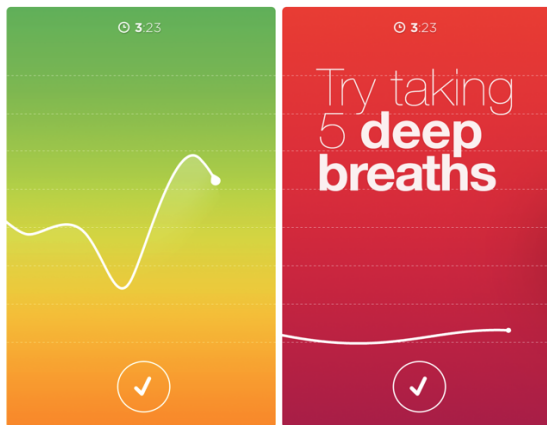
Following this, the founders of Melon ask if we (the users) could transform how we work, and then, even more intriguingly, improve the way we meditate and, ultimately, find a new way to be creative. Importantly, they point out that the Melon sensor turns focus into something measurable, understandable, and improvable. The users are encouraged to imagine the ability to see their brain as a transparent device and understand its invisible activity. Each time Melon is used, the app learns about what helps and hurts user’s focus. Insights appear at the ends of sessions and are stored as trends that are easy to understand and use. This part of the output is translated into the visual layout of the app:



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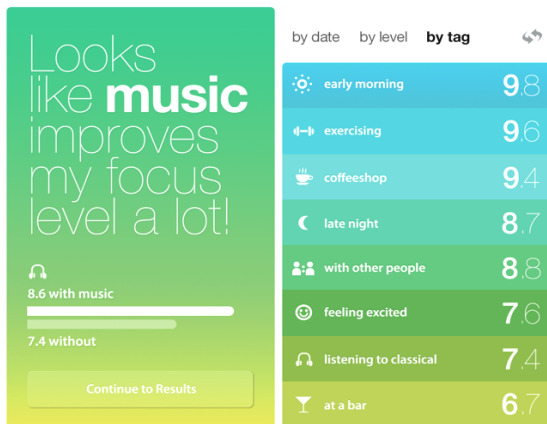
2 The project was successfully funded, raising \$290,941 (pledged for \$100,000) and backed by 2,723 people in June 2013. Currently the headbands are on presale for \$149 each. See: <https://www.kickstarter.com/projects/806146824/melon-a-headband-and-mobile-app-to-measure-your-fo>.

The image above shows the input tags indicating activity, environment, behaviour, and more. Melon architects claim that health aspects that are not obviously quantitative such as mood can be recorded with qualitative words that can be stored as text or in a tag cloud, mapped to a quantitative scale, or ranked relative to other measures such as yesterday's rating.



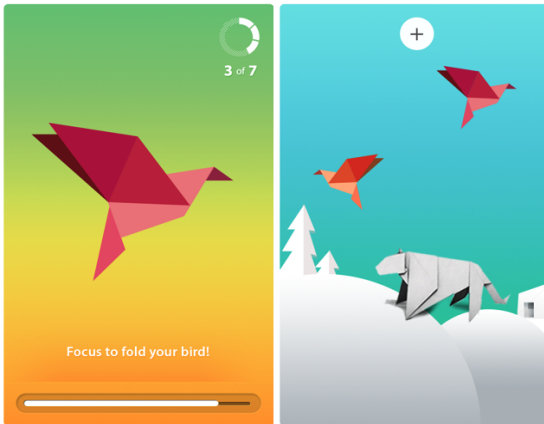
Copyright by Melon

Melon learns about and displays the user's focus. The user is offered personalised tips when his or her focus dips too low. Below, we see a personalised tip based on monthly tracking of the user's brain activity. The app suggests music as a solution to distraction.



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Melon also proposes that the user find focus with Origami. The call to the user is to play games to challenge him- or herself and achieve longer periods of focus. They also add that “better focus lets you fold origami faster and complete more complex creatures”.



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Public awareness and usage of neuroscience

In order to explain Melon's case in a broader context I would like to refer to a general growing tendency in the public awareness of neuroscience. Recent developments involve the use of neuroscience in the business world, technology and education. But, like homeopathy and phrenology, many of these applications can be regarded as “quasi-neuroscience”. The public has become more interested in new findings about the brain, and also finds brain-based explanations quite compelling. This public interest has led enterprising individuals to try to apply neuroscientific ideas to more everyday situations.³

This trend first began back in the late 1990s with “neuromarketing”. For instance, the Neuroleadership Institute (<http://www.neuroleadership.com/>), founded in 2007 to “encourage, generate and share neuroscience research that transforms how people think, develop and perform”, seeks to apply neuroscientific research in management and business. It publishes its own journal, and holds meetings around the world offered to prominent business people. The Neuroleadership Institute's published work shows why their approach needs more scrutiny. Take the example of the AGES model of learning which was published in the institute's journal (AGES stands here for attention, generation, emotions and spacing). The main idea is that effective use of these four domains in training can lead to more effective learning.

For instance, “generation” of associations and deeper, more elaborated processing of material leads to better memory retention. This means that the word “table” will be forgotten easily if it is presented briefly in a long list of other words. However, it will be easily remembered if

3 See, for example, http://www.creativitypost.com/science/how_neuroscience_is_being_used_to_spread_what_you_ackery_in_business_and_education#sthash.C8NbFajH.dpuf.

the subject is asked to imagine an elaborate scene featuring a beautifully decorated table in a restaurant where all the waiters are anthropomorphic ducks. This effect is a well-known and robust psychological effect, usually called “levels of processing”, first described by Craik and Lockhart in 1972. “Spacing” is the idea that information will be better retained if it is studied for short periods, spaced out over a few days or weeks, rather than intensively studied in a single short period. The spacing effect was in fact first described by Hermann Ebbinghaus in 1885. Neither of these effects needs any reference to neuroscience to make the point.

There are also occasional, often misleading, references to neurotransmitters such as dopamine and norepinephrine. The neuroscientific content seems to be there purely to put a new, modern gloss on ideas stemming from 1970s psychology. This is not to say that it is necessarily bad advice. But these are old ideas, given a slick re-packaging and being sold as brand new.

The public seems to be easily impressed with neuroscience right now, and business leaders do not have the scientific background to adequately critique these ideas. Someone who cloaks themselves in the appearance of academic rigour and promises new thinking based on cutting-edge neuroscience must seem pretty attractive.

Another particularly witless example is a recent article from “Marketing Week”, entitled “Neuroscience and marketing: what you need to know” (Bacon, 2014). In reality, the article contains discussion of results from experimental psychology, with no brain-related content at all. In this case, the term “neuroscience” is simply being used to produce a headline that people will be tempted to click on.

Such marketing tactics are not new, and it is hard to get too morally exercised over a group of business people finding a new way of scamming another group. But consider the growth of businesses that target parents, teachers, and schools, using similar language.

Educational neuroscience is a thriving field of research, and there are many excellent and doubtless well-meaning researchers doing rigorous and valuable work in the area. Unfortunately, there are also businesses that want to exploit teachers’ lack of experience and middle-class parental anxieties about school attainment.

Education seems to be a fertile area for the development of “neuromyths”.⁴ We can observe new variants that have flourished in the recent years.

For instance, NeuroNet Learning offers an accreditation program for schools in the United States, provided that the company is allowed to train teachers, implement the system across the school, and use the program at least four days a week. Their website is awash with terms such as “motor-perceptual learning” and “research-based learning readiness”. They claim

4 See, for example, <http://www.senseaboutscience.org/blog.php/77/neuromyths-and-why-they-persist-in-the-classroom>.

their approach is “backed by hundreds of peer-reviewed articles in the world’s top scientific journals”, and provide a list (<http://www.neuronetlearning.com/eng/about/#research>). However, the articles they cite turn out to be general papers, only indirectly related to the specific program. On closer inspection, they turn out to consist of articles only vaguely related to their claims, and the readers are left with a specific quasi-scientific discipline that we could call “gamified neuroscience”, a consumer-friendly neuroscience, not only useful in offering instant measurable results and solutions, but also full of rules that are very easy to follow.

There is a growing gap between neuroscientists on the one hand, and on the other educators and business people, who are fascinated by modern research, and eager to implement brain-based practice in their work. Measurement of focus and productivity is driven by a hidden claim that people have always wanted to have an easy way to remind themselves daily of what their goals are, and also to have a rough measure of how they are progressing towards those goals. Thus, as Yukti Pro states it, the idea of reporting daily accomplishments not as “time spent”, but as “efforts invested” into goals, is suddenly all around⁵. According to the designers of Melon, as well as many other designers of wearable technologies of a similar kind, people become interested in a system which can “positively motivate” them.

These ideas are again supported by positive psychology, which very often becomes the main reference point of those supporting gamified neuroscience. The so-called positivity ratio, also known as the Losada ratio or the Losada line (Losada 2005), is a largely discredited concept in positive psychology, positing an exact ratio of positive to negative emotions which distinguishes “flourishing” people from “languishing” people. A level of 2.9 or above is associated with human flourishing. “Flourishing is associated with dynamics that are nonrepetitive, innovative, highly flexible, and dynamically stable (Fredrickson & Losada 2005). Thus, the purpose of devices that link gamification with neuroscience is to come up with a system which can significantly boost productivity (for instance, as Yukti Pro mentions, by ca. 50%) (Eli, 2013).

Another major theme referred to by gamified neuroscience is “mirror neurons”. A company called Yukti Pro, specialising in productivity enhancement, notes in their statement concerning mirror neurons that there are “many interesting implications [of mirror neurons] which anyone can google”. For Yukti Pro however, the practical implication is (Eli, 2013) that “watching others progress makes us want to learn, move and do progress ourselves”.

Now, the praise does not necessarily have to come from the employer. For instance, as Yukti Pro notes, if I publically log my achievements for the day, the “likes” I get count towards the positivity of my environment. They also suggest that “people do things more eagerly knowing that others see them being heroic”. This is precisely where gamification steps in at its purest:

5 <http://blog.yuktiopro.com/gamification-and-neuroscience-to-boost-productivity-by-50/>.

“badges for the team lead to grant”. The positive power of receiving recognition is embodied by an electronic badge. “Mirror neurons” will ensure that “if I get a badge and everyone knows why, then it is just and they want badges too”.

At the end, Yukti Pro also refers to a par excellence transhumanist claim in its enthusiastic article:

I wanted to say how we love to use our unique pool of skills building user experiences to help people live better but there is a recently discovered way also to live longer (i.e. to add between 5 to 10 years to your expected life span), which all should learn.

Clearly, gamified neuroscience, they claim, may also be beneficial in lifespan extension and promoting longevity.

Neuroscience as a game?

The most interesting part of the idea behind Melon is the so-called Understood Self. “At Melon”, we read:

we are really interested in the idea of Understood Self, which we are trying to add to the movement of Quantified Self... We want people to have a great feedback system for the data we’re capturing, so it can help with the activities users already do day-to-day, go beyond numbers and scores, and move towards insights and understanding (Steadman, 2013).

The backing claim here is that neuroscience helps us to understand the “Self” (a term that remained undefined by the founders), but is nonetheless too obscure and cryptic to be useful. The human-centered design offered by Melon makes it more comprehensible. Now, one needs to remember that in Melon’s case neuroscience in its scientific form is actually present. The consumer portable EEG may have its deficits, but it clearly works well enough to effectively measure our brain activity. Melon uses technology that has been widely used in the field of medical research for over a century and thus has every right to establish itself in the good traditions of self-tracking, biocitizenship and DIY health care.

Nonetheless, the use made of it takes us to an entirely different level. The aspect of neuroscience that is used in the portable EEG is different from that which shows us the results. The second is a pragmatic, utilitarian method of tracking in order to alter personal behaviours. The research itself is not worth much if it is not used. Equally, the data is meaningless if it cannot be adapted to routines of discipline and play. Melon architects seem to make a claim here that quantification, gamification and neuroscience can significantly increase focus. Focus means awareness and awareness means enjoying a full experience of activities we engage

in. However, it mostly means productivity – better results in meditation, better results in sport and better results at work. Again, productivity gets linked with collaboration, positive psychology and neuroscience. What we observe here is a simplification of neural images into images that are pleasing to see and that stimulate action at the same time. Neuroscience serves gamification, but also becomes it. It is about motivation, clarification of brain activity, and serves the purpose of understanding and improvement. The designers of Melon tell us that “Melon is about taking invisible information, in this case from your brain, and turning it into something visible and helping change your behavior based on that” (Popolo, 2013).

Neuroscience is gamified here on many different levels. For instance, the user is invited to share his or her ideas about how to use Melon’s technology in a new and creative way. The engineers invite the Kickstarter and hacker community at large to promote innovation using the Melon.

It is not enough to say that neuroscience is used to enforce gamification, or allow it to step in. It is actually becoming gamified itself. Pieces of it are taken out to make it a game that is easy to play. It is presented as a science that anyone can google, an activity that anyone can join in with – an activity where this:

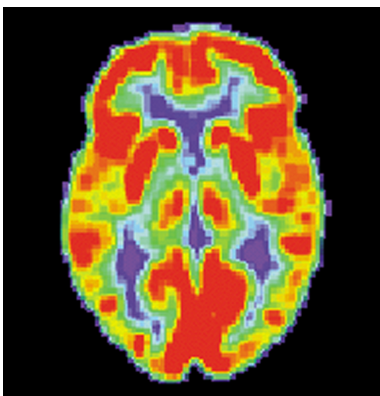


Image in public domain. Retrieved from https://en.wikipedia.org/wiki/Brain_positron_emission_tomography#/media/File:PET_Normal_brain.jpg

becomes this:



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This is a major shift in the public perception, but also in the popular scientific direction, of neuroscience. The gap between neuroscience and its public image is growing and becoming more and more frequently exploited in the manner I have just described, in the name of easy fixes and quick gains, based on “proven” research. Melon, insofar as it attempts to use neuroscience in a fruitful manner, may become another device that, instead of developing the neuroscientific scope of interests, simplifies its goals by gamifying and blackboxing it.

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GAMIFICATION AS CREATION OF A SOCIAL SYSTEM

Michał Smoleń

The growing popularity of gamification techniques in marketing, user engagement and workforce management makes it important to broaden our understanding of this issue. I argue that instead of simply adding a fun factor to boring activities, gamification creates a new, highly controllable social system. By using game metaphors and mechanics, a designer can influence the behaviour of a subject, but also make him or her easier to supervise and more prone to being used as part of big data. She can initiate competition between some players and silence other potential conflicts. This social system creation resembles the establishment of markets as spheres of economic activity, researched by economic sociologists. Nonetheless, gamification forms a system particularly suited to the designer's interests, granting her full control over institutions and rules, which makes consideration of underlying power inequalities especially crucial.

One of the most popular introductions to the field, *Gamification by Design: Implementing Game Mechanics in Web and Mobile Apps* by Gabe Zichermann and Christopher Cunningham (2012), defines gamification as “the process of game-thinking and game mechanics to engage users and solve problems” (pp. XIV) – generally in non-game contexts, such as marketing, workforce management, education, health and so on. But while this description, supported by a couple of established case studies of famous applications, would usually allow the user to distinguish between gamification and “regular” game or other social practices, deeper consideration leads to a number of important questions. For example, is gamification a recent phenomenon, originating around the time of the emergence of the term in 2000, and boosted by the particularly game-loving Generation Y (Bunchball, 2012), or has it been around since antiquity, always present as a playful element of education and upbringing: rhetorical debates,

sport or war games? What makes the problem even more complicated, game-centric approaches in cultural anthropology, stemming from *Homo Ludens* (Huizinga, 1995), put game and play at the core of development of culture, making the term “non-game activities” itself problematic. On the other hand, Kai Huotari and Juho Hamari (2012) point out that it is hard to find any elements and mechanics that could be considered as truly “unique to games” (p. 18).

I will not, of course, offer an easy solution to this terminological problem. And it is surely not a problem unique to “gamification” – other general names of social activities, such as “theatre”, “politics” or “sport”, would be at least as hard to define. My idea is thus to approach gamification from a different perspective – as a current social practice, gaining importance from 2010-2011, heavily influenced by the establishment of the internet as a dominant medium and video games as a mainstream hobby, and most commonly found in the fields of on-line business. Questions like “what is pure gamification?” will be replaced by “what social meaning does it have as it is?”. I am going to examine the surrounding discourse: how do gamification gurus advocate this technique and how do they conceptualise it, what do they promise and what is desired by businesses. This last element is crucial, because all different applications of gamification, in areas such as education, marketing, and employee engagement, are used by companies – on their clients or workforce. Gamification could thus become an important topic in economic sociology: the way in which it adds a new layer of meanings and elements, and transforms existing relations between subjects, according to video or board game-like mechanics, is surely worthy of consideration. These observations would in turn improve our understanding of different gamification effects, which should not be reduced to the simple introduction of an addictive “fun factor” into normally boring or tiresome activities.

My method, which involves case studies and elements of discourse analysis, makes this paper more of a preliminary conceptual paper than a definitive statement – such a statement would only be possible after numerous empirical, quantitative and mixed methods studies. I will thus be unable to provide the answer to crucial question: “Does gamification do what its proponents says it does?”. In a recent literature review, Hamari, Koivisto and Sarsa (2014) write that available studies generally support such claims to some degree, although gamification’s effectiveness is highly dependent on the context and the users. On the other hand, the number of complex empirical research papers on gamification is relatively low, and scholars notice important shortcomings in most of them. These problems make formal meta-analysis, which would serve as a strong basis for judgment of the effectiveness of gamification, impossible for them to conduct. In addition, such a study of, for example, enhanced user engagement, would probably not grasp all the different workings of gamification.

Reality and games

My main points about the effects of gamification practices, conceived of as the creation of a new social system within the existing world, may be demonstrated using the case of Jane McGonigal's *SuperBetter*, described in her influential book *Reality is broken* (2011, p. 133-142), in which she argues that positive emotions and practices from video games should be reintegrated into the "real" world. While *SuperBetter* is now available on mobile devices as a general life-management tool, it started in 2009 after a minor accident left McGonigal with lasting post-concussion syndrome. After the first month of slower than expected recovery, she decided to gamify the experience and develop a sort of alternative reality game. I chose this case because the narrative provided by author helps me to understand all the different workings of the gamification process, and because it cannot be easily reduced to the most common explanation of simply "making boring tasks fun" by manipulating dopamine levels through game-like elements.

McGonigal started by formulating a strategy for getting better: setting goals, focusing on progress, getting support from close ones, and keeping track of symptoms to know if you are ready to make the next step. She created a fun superhero identity (Buffy the Vampire Slayer) and came up with different missions (such as "gather allies", "find the bad guys" or "identify power ups") – and, of course, this self-imposed narrative has the potential to improve the quality of an injured person's life, especially of one as fond of games as McGonigal. But I would like to point out to several other important factors.

Let us start with the notion that a game is usually a system with a finite and fixed number of elements. The classic board game *Settlers of Catan* has five different types of resources, while the real time strategy video game *StarCraft* has two. Furthermore, these resources are easily countable and comparable. A game usually provides clear concepts of ally and opponent, and conditions of victory and defeat, and standardises activities (in the acclaimed board game *7 Wonders* a player can choose and build one of his cards, discard it for a little money or use it to expand his wonder – these are the only three available options every turn). By contrast, "reality" tends to be much more complicated, with lots of grey spots between different categories, problems with defining goals and procedures, and a generally high level of uncertainty. That was the case for McGonigal in her first month – she was not sure what she was allowed to do with her injured brain, her relationship with those close to her became a bit strained (she used to be self-reliant, and now she was embarrassed to ask for much-needed help), and her normal goals, like writing a book, were replaced by the murky concept of "getting better". But games are easier! By gamifying the experience, she transformed a highly complex and unusual situation into something easier to grasp and much more familiar, which in turn gave her clear goals and ways to accomplish them.

One could say that replacing multifaceted reality with simple narrative is one of the oldest tricks in the book of human nature – and I cannot really argue with that statement. But three important distinctions must be made. Firstly, it is worth noting that this narrative is consciously based on pop culture and video games, so it is probably not the same as old customs of, for example, religious interpretation of phenomena (without comparing their merits). Secondly, gamification is generally a tool of action and change, so it differs from the popular notion of ideology (Mannheim, 1936). Thirdly, and, in my view, most importantly, we should not think of this new, *gamified* system as “false” as opposed to the “reality” behind it (Althusser, 1971). Gamification and similar practices do not just cover reality with a new layer of useful meanings and interpretations. They can profoundly influence the actions of the subjects. Let us consider McGonigal’s sister: after the accident, she continued to catch up with her sibling every weekend, as usual. After agreeing to become a part of Jane McGonigal’s game as a superhero ally, she played her role by calling every day to ask about problems and progresses.

When the introduction of gamification is truly accepted by other people, it really makes “reality” a bit more like a game – fun, but also with an easier set of rules and clearer goals. What may seem unremarkable but is especially important in the context of business applications is that gamification makes different things countable and comparable. Loss of actual or perceived complexity and depth is compensated for by the growing usefulness of quantitative data: both to the big company, which needs to know about user engagement, and to the individual person. For example, in the first month of her recovery, McGonigal was faced with a murky spectrum of different tasks, with unclear relative importance and difficulty. By approaching them as missions in the life management superhero game *SuperBetter*, she could formulate clear rules (“one mission a day”), which made progress easier both to achieve and to keep track of.

One could of course argue that such practices (making reality simpler and countable) have themselves a long history: we may recall Simmel’s findings described more than a century ago in *The Philosophy of Money* (2011) or more current trends in higher education management in the European Union, in which every course is awarded points and has its rules, prerequisites and results described in a standardised way. There have surely been other cultural practices like gamification, which interpreted and at the same time transformed the social world, but that does not mean this present phenomenon lacks its own unique qualities altogether (like its use of video games as a source of metaphors and mechanics, its consciously utilitarian approach and its addressing of hedonistic motivations).

Gaming business

Although *SuperBetter*'s design history is quite informative and the game represents an important group of self-help gamification systems (like *HabitRPG*), we have to consider the fact that usually the “player” is not the one to design the rules and even set goals for himself. And while McGonigal's book promotes introducing games into our everyday lives for the benefit of society as a whole, some of the other gamification evangelists present a more competitive approach. *Gamification by Design* clearly states that, as in the casino, “the house always wins”. Gamification is seen as a powerful tool for transforming the market, and the fundamental choice is: “be the house, or get played” (Cunningham and Zichermann, 2012, p. 13). So now I will consider some of the business applications of this technology, as described in *White Paper* (Bunchball, 2012), and try to show some different effects of gamification.

The first application to be discussed is Microsoft Ribbon Hero (ribbonhero.com), a free software, which is a learning tool for Microsoft Office programs. Turning education into a game, and thus making it easier and much more enjoyable, is deemed important, because it is thought that a skilled user base will be more likely to appreciate all the different functions of Microsoft software (which are not included in simpler, free programs). Ribbon Hero follows the classic path of gamified education: it includes clear long- and short-term goal setting, an easy to track progress meter (points), and emotional rewards (narrative, levels and badges). And while it is hard to deem a fun learning tool sinister, Ribbon Hero provides an interesting example of the game within which subjects' transformation occurs according to the needs of the game designer. Gamification discourse often references general truths about people: the inherent human appreciation of games (supported by neuroscience) or great cultural trends such as the appreciation for games within Generation Y. But at the same time, every gamification application to some degree changes both preexisting social structures and the subjects (now players). Ribbon Hero's goal is thus to produce future users and customers of Microsoft software.

Now let us consider the Contributor Recognition Program, built into the SAP Community Network (<http://scn.sap.com/welcome>) and its gigantic forum with thousands of posts every day. In a smaller community, judgment of a contributor's merit can be left to “spontaneous” social processes of recognition, fame and prestige. Other big online communication platforms, like general discussion forums or comment sections on pop culture sites, do not really need recognition of authority: essentially, everyone's point of view is deemed equally valid. On the other hand, a user of a professional online forum needs to be sure that the answer to her question is given by someone possessing actual expertise in the field. This is where the Contributor Recognition Program takes off – it tracks every answer, gives points and levels, and even includes a competitive element (SAP employees represent their companies), which serves as im-

portant motivational factor. In this case, gamification can be seen as the establishment of a new social system with the help of game metaphors and mechanics, which can deal with the problems that “normal” social interactions cannot. It is clear, transparent, and easier to manage (by, for example, tweaking points awarded for different tasks) and use (the individual member does not need to check tens of posts to estimate another contributor’s credibility). And while it is not hard to find sources of new problems, like earning points only on simple questions, gamification promises the possibility of a quick response. “Traditional” social institutions or corporate cultures may be extremely hard to change, with contradictory interests of different stakeholders, pathological habits and so on. The designer of a gamified system just needs to change the “artificial”, formal rules of the game. Although close empirical studies would probably show diverse strategies of resistance even in the best gamification applications (Dragona, 2014), this promise of creating an easier to manage, controllable large-scale social system based on game mechanics is surely an important factor in the spread of gamification techniques.

The next case to be considered is Nitro for Salesforce (<http://www.bunchball.com/products/nitro-salesforce>), which serves as a tool for managing a sales workforce. It provides a unified system for data gathering, real-time feedback about every new closed deal, clear goal setting options, additional rewards (badges and prestige) and both individual and team competition. It could be thus analysed through the lenses of sociology of organisations and work. Although management has always included centralised standards and procedures, as well as different methods of surveillance and motivation, each workplace remains the site of constant struggle between different groups of interests. For example, while a company and its board of directors want to boost employee performance by rewarding the best ones, workers may notice that those who are working too hard or too effectively could lead to a general raise in requirements – thus, a silent solidarity of not overperforming could become part of the organisational culture, leading to at least short-term profit for employees and loss of effectiveness for the company (Burawoy, 1979). A gamified management system tries to counter such “negative” tendencies, not by engaging in tiresome negotiations and looking for a mutually beneficial solution, but by creating a new social system, with subjects-employees redefined as players in a highly competitive game, and simpler rules overruling old, localised nets of contacts and interests, which stood behind traditional reward mechanisms, such as appreciation bonuses. From the social point of view, sales employees share common group interests against higher-level management: transforming their job into a game, in which the performance of, and consequent rewards given to, other workers and teams may be observed in real time, encourages them to compete among themselves. Moreover, it comes as no surprise that there is no “Nitro for CEOs” (with points awarded for long-term company development, fruitful cooperation with trade unions or relatively lower wages of board of directors): the designer of the system

decides who and what becomes part of the game, and who remains outside, as the sovereign power behind the rules. And just as in the casino, the house always wins – at least that is what Bunchball, the company behind Nitro for Salesforce, promises to their corporate clients.

Further examples may help us better understand the relation between two important trends: *big data* and gamification. While employees subjected to systems like Nitro from the beginning could not have kept data about their work to themselves (gamification merely made it easier to manage), when it comes to customers and users, gamification can serve as powerful tool for data mining. Games and competitions on social media or applications like Nike+ are able to attract many users, who without a second thought give away information about their connections with other people, favourite locations, websites, hobbies and so on. These large-scale and multisource data clusters may be used in marketing (personalised ads and offers), brand management, new products design processes and so on. On the most basic level, users are subjected to uneven, unregulated and often unknowing exchange: a little bit of gaming fun for their engagement and private data. But we should not stop there. As I mentioned before, not only is deep gamification the process of manipulating preexisting elements, but it tries to transform them, as part of a video game-like system. In this case, gamification both gathers the data and creates social situations that are countable, easy to evaluate quickly and clearly, and belong to finite set of categories – generally speaking, this is good data to begin with (Paharia 2013). Before Nike+ (<http://www.nikeplus.com.br>), casual runners seldom kept very precise track of their routine exercises: there simply was not much data to be collected, no matter how clever the gathering mechanism. Twenty years ago nobody would have thought to count their acquaintances: certainly, the concept of popularity and a developed social network existed, but they were not commonly thought of as measurable with simple numbers. With online social network services, such numbers started to gain meaning as an unofficial sign of status and popularity, quite like a score in a game – and while such behaviour is today frowned upon by adult users, the game of “who has the most friends?” contributed to the overall deepening of user networks and thus produced data that simply was not there before. Gamification and *big data* can thus overlap and reinforce each other’s power: the common notion that customer and user behaviour is complex enough to prevent effective harnessing of *big data* could lose its merit when a social system is made simpler by gamification. On the other hand, this information bank could itself be a great asset when creating more engaging, more personalised games.

Social creation of the markets

Critical consideration of new social phenomena has to be conducted with caution – it is easy to make an erroneous “appeal to nature” and treat them as “artificial”, and therefore false, wrong and worse than the natural state before them. I have myself argued that gamification is the creation of a new type of social system and pointed to several associated threats. But at the same time, we have to remember that the market as an arena of economic activity was always a social construct. In this light, we can try to better understand gamification against broader social practices, and ask some new interesting questions about it.

In the introduction to the book *Do Economists Make Markets?: On the Performativity of Economics*, MacKenzie, Muniesa and Siu (2007) explain their basic premise by highlighting the active role of economic theory: as they write, it “is not just about knowing the world, accurately or not. It is also about producing it” (p. 2). They recall Austin’s theory of performatives and point to the current usage of the term in both philosophy of language and sociology. This performative view of knowledge (which influences the world it supposedly describes) is reflected in modern sociology of science – and economic theories are especially prone to such analysis (Callon, 1998). At the same time, it does not mean that they all should be discarded as “false” – they should be seen as tools, created by different people and groups in different circumstances, to resolve local problems. Such an approach should not be reduced to a simple “ideological” refutation (with grand narratives about moral wrongdoings of capitalism or neoliberalism) or limited to the study of academic discourses. Later in the book, Garcia-Parpet (2007) brilliantly describes the establishment of a “perfect” strawberry auction in a small French village. While it resembled the ideal market from neoclassical economic treatises (fluid, transparent, free, and so on), it was in fact not a spontaneous order, achieved by competition and a general tendency to lower transaction costs, but the brainchild of a young educated advisor, who transformed the old, ineffective system, in accordance with his formal economic knowledge, but needed to gather popular support, take the growers for a trip to more prosperous regions, and introduce fruit quality standards. Economic theory was thus more of a social recipe than an accurate description of a preexisting market – and to some extent it is always inherently intertwined with social action and power structures.

To better understand this last factor, we can turn to Foucault’s (2008) historical analysis of liberalism and neoliberalism. On the very basic level, while in classical liberal thought the ruler’s paradoxical role is to acknowledge the limits of his control and respect the natural flow of goods and people within the market, in the twentieth century economists and policy makers realized that the free market itself must be constructed, that effective competition is not at all a natural state of affairs, and that subjects must be brought up in a specific culture and institutional background, in order to be truly “free”. The argument is of course much more com-

plex and given in the context of biopolitics. But what is important to my analysis of gamification is that epistemic structures, which through their performative nature form institutions, create “free” subjects, set rules of cooperation and competition, are never innocent – because they themselves are a product of power (Schrape, 2014). In the context of economy, it means that behind every market victory, there is an underlying struggle to define the players and basic rules of engagement.

If the (neo-)liberal market itself is a social institution, gamification cannot be seen as particularly “artificial” or “false”. But there are still other important questions, which could lead to deeper comprehension and critique of gamification practices.

What kind of subjects are brought to life by gamification? What traits are, at the same time, presupposed and created? To answer these questions we have to note multiple epistemic traditions, which although they are not equivalent, meld together into the popular gamification discourse: neuroscience, positive psychology, cultural anthropology and current cultural studies. Some of these treat fondness of games as an inherent part of the human brain or culture, while others point to the relative popularity of video games in recent decades. In my opinion, cases of gamification show that they are generally more indebted to modern board and video game mechanics than just to general playful human behaviour. Regardless, subjects of gamification are described (Cunningham and Zichermann, 2012, pp. 1-34) as driven by intrinsic motivation – such as a hunger for fun, aversion to boredom, and desire to improve status and gain access to services before others – easily manipulated by prizes of insignificant cost (which is why gamification is supposed to be more cost effective than older loyalty programs, which gave away plane tickets or every tenth coffee for free). As in the classic liberal model, they are generally seen as calculating subjects looking for profit and utility, but their rationality is now understood as much more localised. For neoclassical economists, subjects’ limited rationality, only partial knowledge about the market, and tendency to choose short-term gains over long-term development were seen as fundamental threats to the well-being of the economic ecosystem. Gamification differs: this localised rationality, which always pursues perceived utility in the given circumstances, is seen as a chance for someone to actually create new circumstances and thus benefit from these “selfish” actions of the subject.

While markets were always social constructs to begin with, gamification promises to create an entirely new market, according to the client’s need. Let us remember that advanced gamification systems seldom use “real” money: Cunningham and Zichermann (2012, pp. 12) clearly state that cash prizes, or those easily converted to cash, are generally a suboptimal idea. It is not surprising that modern loyalty programs and gamification structures create their own currency (points, miles, gems, coins), which can sometimes be bought directly with real cash, however cannot be exchanged in the other direction. By producing new tokens of value in an entirely controlled environment, the designer of the game or gamification can influence cus-

tomers' or employees' behaviour: he can expect them to pursue points in a quite rational way, but at the same time he is the one to decide what is awarded with those points and what the user can do with them. Gamification can thus use users' general upbringing in a market-based society according to the designer's needs.

Fourcade (2010) notes that price techniques make things countable and tradable, and thus "bring market into existence" (p. 45) – in her article, she explains the mechanism of giving a price to previously immeasurable and untradeable things, like the condition of the natural environment. But while such social actions can bring new elements to the market, other procedures can to some degree take some goods from it (with the abolition of slavery in the USA, the free market for African life itself ceased to exist, at least to some degree). Localised system-building features of gamification, which create "artificial" markets as tools to influence the behaviour of the population, also have the power to put some element outside of the system – as we can see in the fact that gamified management software applies only to low-level employees and not CEOs. Another example could be a gamified education system, which gives points, badges and levels for individual or team accomplishments. While it could be effective and fun, it could also prevent any discussion about its own principles, goals and power mechanisms – critique of the education system, centralised bureaucracy or the position of the teacher is simply not a part of the game. Again, inequality of power was always there, even before gamification or standardisation. But the emergence of simpler game-like social systems makes the distinction between who and what is part of the game, and who and what is excluded and forbidden, perhaps more evident (and, on the other hand, hidden) than ever.

Sociology of science, and sociology of economics in particular, studies the performative effects of expert discourse, which influences reality as much as describes it (Fourcade, 2010). This consideration is also crucial in the context of gamification. We have to ask who is speaking, how authority is created, and what the individual goals of those people are. And the answers to these questions will somehow weaken some of the warnings about gamification, which I and many others presented earlier.

Unsurprisingly, gamification experts are usually game designers, entrepreneurs, teachers or keynote speakers, and in many ways profit from the spread of gamification. But even those who provide critical insight about this phenomenon are probably prone to overrating its importance, as they have invested time and resources into research. Furthermore, if expert knowledge is performative, then disturbing declarations of gamification gurus about the transformative power of their techniques should be treated not as realistic portrayals of their present effectiveness, but more as a complex conglomerate of wishes, prognoses, inspirations and marketing. This does not mean that gamification is just a scam or fad, or that it does not

work. Those impressive accounts of its successes could themselves lead to the spread of gamified social systems, influence more and more subjects, and – after some time – maybe give the game designer the power she now claims to possess.

Although gamification promises a new, fresh start and the replacement of old complex social structures with a new system that is engaging, clear, easy to manage, and based on mechanics and metaphors from video games, in fact those older cultural and social institutions would more often than not surprise the designer with their stubbornness or straightforward resistance. Dragona (2014) lists a number of counter-gamification techniques, such as obfuscation, hypertrophy or exposure. Any empirical account of the workings of gamification must thus cover this element of struggle against the system, which was itself intended to curb any possibility of it.

Researching social system creation

In my chapter I have tried to understand different ways in which gamification works and expand beyond the basic notion of “making boring things fun”. I argue that gamification can be seen as a new way of creating a localised, market-like social system, which could create and direct subjects according to designers’ interests. Video games served as a powerful inspiration and source of mechanics, and their expansion as a dominant form of entertainment could further advance gamification techniques. On the other hand, it is entirely possible that the success of gamification will not be a long lasting phenomenon and that in a couple of years it will be replaced by the next buzzword, spreading from white papers and TED talks to business applications, using new metaphors and interpretations of human nature or neuroscience. I think that sociology of economy can help us grasp such practices of social system creation, serving as a middle ground between small-scale ethnological study and general philosophical critique.

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GAMIFIED VS. NON-GAMIFIED SPACE IN VIDEO GAMES: A BIOPOLITICAL APPROACH

Jakub Wencel

Taking into account a crucial distinction between “gamification” and “playfulness, I try to analyse the complementary and necessary relationship between “gamified” and “non-gamified” areas and elements in modern video games using the philosophical tools rooted in the modern tradition of studies on biopolitics. Subsequently, I try to define “gamification” as a device that is set up to “take over” non-gamified areas of playful, undetermined interaction – the process exemplifying mechanisms of biopolitical organisation of society. Gamification-as-biopower preys on disorderly, but productive and creative bodies.

Gamification is the way design articulates itself within an interactive area

In my chapter, I define and establish the scope and the nature of the relationship between “gamified” and “non-gamified” space in video games through the conceptual tools derived from the theory of biopolitics. My goal is to use them to better understand how the complementary and necessary relationship between “gamified” and “non-gamified” areas and elements in modern video games works.

I define “gamification” – the term still young and somewhat ambiguous – in a broad sense, as the way of establishing logical and functioning “systems of interactions”. Although my understanding of “gamified” and “non-gamified” space in video games can be compared to the distinction between “gamefulness” and “playfulness” (Deterding, Dixon, Khaled, Nacke, 2011, p. 1), there are some crucial differences. While “gamefulness” and “playfulness” are purely per-

formative concepts, referring to a form of a certain activity, my perspective presupposes an “ontological” difference that comes before different types of interaction. Subsequently, I am more interested in writing about theoretical *areas* of game design (“gamified” and “non-gamified” space) than simply about different kinds of *praxis* of interaction.

Although the term “gamification” is usually used to describe devices, mechanisms and practices only “borrowed” from the video games and then applied to many different fields of human activity related to the use of technology (such as, for example, marketing, virtual interfaces or self-management applications and programs), I intentionally go back to its original field of work – video games. The disciplinary and regulatory character of gamification, if understood as something deeply related to biopower, becomes both a defining force in the game design itself and clearer and easier to define when analysed in the completely “artificial” context of the fictional, playful narrative of the video game.

When in 2011 American game critic Ian Bogost decisively and controversially declared, with a reference to a book by Harry Frankfurt (Frankfurt, 1991), that “gamification is bullshit” (Bogost, 2011), he, paradoxically, articulated not only its existence, but also captured its true *modus operandi*. Bogost claims that gamification is just another momentary intellectual trend, manufactured by marketing departments of big companies, and that its power is only “rhetorical”:

More specifically, gamification is marketing bullshit, invented by consultants as a means to capture the wild, coveted beast that is videogames and to domesticate it for use in the grey, hopeless wasteland of big business, where bullshit already reigns anyway. (...) Bullshitters are many things, but they are not stupid. The rhetorical power of the word "gamification" is enormous, and it does precisely what the bullshitters want: it takes games--a mysterious, magical, powerful medium that has captured the attention of millions of people-- and it makes them accessible in the context of contemporary business. (Bogost, 2011)

By saying this – perhaps unwillingly – Bogost presents “gamification” as a manufactured social disciplinary device, designed and created basically from scratch, – and useful to modern capitalism, which is looking for new ways to take over spheres of life which had not previously been under its control. Such a radical rejection of the logic of gamification in defence of video games can be understood as a gesture of resistance to its disciplinary character. However, if we assume that gamification is deeply biopolitical, everything becomes much more complicated. Just as there is no society without biopolitics and biopower (Hardt, Negri, 2009, p. 32-38), there is no *interaction* (not to mention *a game*) without some gamified elements.

It should be noted, therefore, that those areas of “gamified” and “non-gamified space” can be analysed, in the biopolitical sense, basically only within a process of “theoretical elimination” of one of them. We cannot separate biopolitics and biopower – although they are different

and they articulate themselves separately, they are, at the same time, complementary; there is no biopolitics without biopower and biopower without biopolitics (Hardt, Negri, 2009, p. 31). The discourses of constitution and oppression will always need something (like bodily substructure of society) to operate on, just like discourses of biopolitics – as subversive, free and undetermined as they can be – will always need biopower, with which they may be articulated. We can imagine a video game without goals, but it would still need some rules, an “inner language”, which would make it “playable”, even if this “play” were completely goalless. The ultimate purpose of this chapter, rediscovering the potentiality of “playfulness” as a form of “biopolitical principle of pleasure”, is then more about finding the boundaries of the gamified area: where the rules, the discipline, the goals are weakened or partially nonexistent.

Consequently, it should also be noted that “gamified space” is not understood here as a form of “rulebook”, as something completely “alien” and “detached” from a “non-gamified” space, something needed only as a “set of laws”. Although there are goals, rewards and rules which are set from the “outside” of the game, which are, naturally, part of this structure, they are merely “a tip of the iceberg”. When Scott Nicholson – in the article *A User Centered Theoretical Framework for Meaningful Gamification* (Nicholson, 2012, p. 5) – draws a distinction between meaningful and non-meaningful gamification, we should not be thinking only about distinguishing between areas “inside” (laws of interaction, inner goals etc.) and “outside” (“artificial”, manufactured achievements) the game. (Although Nicholson writes mainly about the difference between meaningful and non-meaningful gamification in non-game contexts, this distinction can easily be applied to video game design.) What really tells us how this structure relates to the problem of how much of the “space” is “gamified” is the organisation of the structure itself, which, of course, relates to all factors, including the external ones:

The opposite of meaningful gamification would be meaningless gamification, and at the heart of meaningless gamification is organization-centered design. Gamification tactics that rely upon points and levels leading to external rewards that are not related to the underlying activity are not concerned about the long-term benefits of the gamification on the user. (Nicholson, 2012, p. 5)

Nicholson concludes that the face of “organization-centered design”, which can be an example of meaningless gamification, is a way of focusing too much on mechanics or – in more precise terms – giving the mechanics unlimited, definite primacy. That primacy allows game mechanics to exercise control over all the activity within the game so authoritatively that it actually distracts the user and discourages him or her from engaging in the game:

Another threat to meaningful gamification is mechanism-centered design. A trap that game designers and companies can fall into is seeing a new or interesting game mechanism and deciding to build that into the gamification. Sometimes, this clever mechanism doesn't integrate

well into the non-game setting; therefore, while a novel mechanism can draw users into the gamification, the lack of integration means that users won't fully engage with the underlying activity. (Nicholson, 2012, p. 5)

Nicholson does not, unfortunately, attempt to define precisely how he understands game mechanics and how exactly the devices of gamification relate to them. Is every “rule” or “law of interaction” constituting the mechanics necessarily gamification? Or perhaps we can talk about gamification only in certain contexts of game mechanics? The biopolitical reading of this issue would draw us closer to answering “yes” to the first question.

Quite surprisingly, this kind of interpretation would be completely coherent with certain “formalised” readings of what exactly “game mechanics” is. Miguel Sicart, a game studies researcher, in his article *Defining Game Mechanics* tries to construct a self-sufficient, functioning theory of mechanics based on concepts from object-oriented programming. Sicart writes in the introduction to his article:

I define game mechanics, using concepts from object-oriented programming, as methods invoked by agents, designed for interaction with the game state. (...) With this article I intend to provide a practical analytical tool for describing game systems as formal structures that create gameplay. (Sicart, 2008)

“Gamification” is then something definitely “substantial”. It not only sets the book of rules and goals – obviously, it also contains “victory conditions”, “achievements” and “the lists” that determine which of the player’s actions should be rewarded and which should lead to appropriate punishment. Earlier, we mentioned the existence of an “inner language” of every video game, which constitutes all possible ways in which we could interact with it. Therefore gamification understood as something substantial consists also of all the possible sets of movements, practices, ways of communication and also ways of inhabiting, exploring and modifying the virtual world. That is why boundaries between “non-gamified”, “playful” interaction and “following the rulebook” are very hard to draw; in many video games we not only have a clearly marked gamified area (we know exactly what we have to do), but we also have a set of goals, which I would like to refer to as a form of “hidden gamification”.

The best examples here would be games like the *Grand Theft Auto* series or *Postal 2*, where often our goals are completely different from what the design “tells” us to do. In the newest instalments of the *Grand Theft Auto* series player has endless possibilities of “playfully” destroying the city and killing everyone around; yet, the storyline avoids missions during which he or she is forced to do so. The essence of the game, the pure, free interactive-explorative playfulness, is something that the game discourages us from. Looking at the current generation of “open-world” games we can clearly see that this paradox is crucial to their designs. *Postal 2* goes even further. It confronts a player with ridiculous missions, during which he or she has to, for example, buy a bottle of milk or deliver flowers. Meanwhile, the player is equipped

with guns and blades and the game itself is designed in such a way as to make using those items on other people the biggest feature. If we understood gamification as a simple rulebook or set of goals those aspects of game design would remain incomprehensible. The “playfulness” – apparently – can also be “gamified” in a non-direct, subversive fashion.

To better understand the difference between “gamefulness” and “playfulness” I would like to quote part of an article called *From Game Design Elements to Gamefulness: Defining ‘Gamification’* by game and design theory researchers Sebastian Deterding, Dan Dixon, Rilla Khaled and Lenart Nacke:

(...) “gamification” relates to games, not play (or playfulness), where “play” can be conceived of as the broader, looser category, containing but different from “games”. In game studies, this distinction between games and play is usually tied back to Caillois’ concept of *paidia* and *ludus* as two poles of play activities. Whereas *paidia* (or “playing”) denotes a more freeform, expressive, improvisational, even “tumultuous” recombination of behaviors and meanings, *ludus* (or “gaming”) captures playing structured by rules and competitive strife toward goals. Along those lines, classic definitions in game studies state that gaming and games – in contrast to playing and toys – are characterized by explicit rule systems and the competition or strife of actors in those systems towards discrete goals or outcomes (...) we suggest adopting the term “gamefulness” recently introduced by [Jane] McGonigal as a systematic complement to “playfulness”. Where “playfulness” broadly denotes the experiential and behavioral qualities of playing (*paidia*), “gamefulness” denotes the qualities of gaming (*ludus*). Thus, gamefulness circumscribes a coherent set of phenomena that is both distinct and has received little focused attention so far, which provides a meaningful extensional ground for defining “gamification”. (Deterding, Dixon, Khaled, Nacke, 2011, p. 3)

It should be noted, however, that the authors consider “gamification” only as the process of applying video game mechanisms to non-video-game areas:

(...) we propose the following definition: “Gamification” is the use of game design elements in non-game contexts. (Deterding, Dixon, Khaled, Nacke, 2011, p. 2)

This is despite the fact that, only a couple of sentences earlier, they acknowledge that the “gamification” process is based on transferring sets of rules and mechanisms from the “gameful” area to non-video-game areas:

We believe that “gamification” does indeed demarcate a distinct but previously unspecified group of phenomena, namely the complex of gamefulness, gameful interaction, and gameful design, which are different from the more established concepts of playfulness, playful interaction, or design for playfulness. (Deterding, Dixon, Khaled, Nacke, 2011, p. 2)

Using the notion of gamification exclusively for non-video-game areas appears to be unnecessarily limited. If we consider as “gamified” not only “meta game” mechanisms, like systems of achievements or ladders in multiplayer games, but also “inner-game” ones (as I described them in the preceding paragraphs), there is no reason not to define “gamification” in the broader sense as the way in which certain design solutions articulate themselves in an interactive area. Whether those solutions are the victory conditions in a *StarCraft* campaign or web achievements for successful transactions from a personal bank account, there is no substantial difference, although video games – the source of most of the “gamified” solutions in marketing or client service systems – are arguably the medium (being the only interactive areas which are completely “virtual” and created from scratch) where we can see most clearly how they work.

The broader use of the notion of “gamification” is also presupposed by the biopolitical perspective, as it forces us to perceive the aforementioned phenomena as unified in terms of logic of functioning.

Biopolitics, biopower and pleasure

In the second part of my chapter I will try to merge the theoretical framework of the previous section with an approach that could be called biopolitical. Why do we need biopolitics to analyse the fairly self-sufficient (at least in terms of finding the best ways to recognise and describe certain relations and mechanisms of video games) discourse of game theory – or, perhaps, the set of discourses? It is definitely much more than simply finding an analogy between these two sets of relations: the relationship between gamified and non-gamified space in the area of video games and the relationship between the biopolitical set of discourses and the half-visible (or completely invisible) substructure of human bodies. The analogy functions merely as a necessary consequence of the fact that the relationship between gamified and non-gamified space, which constitutes the space as it appears to a player, is in its most fundamental sense biopolitical.

Drawing a connection between these two perspectives is not about using video games as an example to describe the biopolitical structure of certain aspects of modernity (the way society, culture, politics and economics work). My goal is much more humble. I intend to adopt a biopolitical approach to gamification in order to help us to understand how modern video games work in terms of their most fundamental mechanisms. I want to show how the design – understood as a set of abstract rules, which can be literally written down on a piece of paper – starts to actually work in a certain “digital” space, which is basically always bigger than the space needed for the sum of all possible gamified activities. Bigger both in terms of possible

ways of interacting with it, but often also literally, like, for example, in probably the most infamously “explorative” role-playing game of all time – *The Elders Scrolls: Daggerfall* – with its grotesquely enormous world consisting mostly of random-generated emptiness. I will shortly describe how exactly this relation between these two perspectives works and then I will insert the Foucauldian notion of pleasure, understood as a way of challenging biopower, which in my opinion can be used for describing the activity on the boundaries of gamified space.

Although the concept of biopolitics was not conceived by Michel Foucault, it can be noted that its enormous popularity among philosophers, sociologists and theorists of culture of the past forty years or so is the direct outcome of Foucault’s works. The term is first used in the series of lectures entitled *Society Must Be Defended*, which he gave at the Collège de France during the academic year 1975-1976:

Unlike discipline, which is addressed to bodies, the new nondisciplinary power is applied not to man-as-body but to the living man, to man-as-human-being; ultimately, if you like, to man-as-species. (...) After the anatomo-politics of the human body established in the course of the eighteenth century, we have, at the end of that century, the emergence of something that is no longer an anatomo-politics of the human body, but what I would call a “biopolitics” of the human race. (Foucault, 2003, p. 242)

In this lecture biopolitics is biopower, a terrifying new socio-political force that has one simple reason to function – extending the mechanisms of social control to the level where the whole bodily existence of humans is made its object, a point of interest for the political powers, and therefore is made vulnerable and adaptable to any modifications that can serve external purposes. Biopower is not a singular force with one easily identifiable source and similarly easily identifiable mechanisms of oppression. That is what makes it different from disciplinary power, where the relations of power and mechanisms of establishing sovereignty were much more visible. Biopolitics-as-biopower does not see individual persons. Its point of interest is humanity as a species: not understood as one monolithic totality, but as a disjointed, chaotic, dynamic space, which cannot be simply divided into equal parts or summed up as a single structure or organism. Its mechanisms of “governance” are adapted to this structure – whether we talk about oppressive medical laws or self-enforced sexual ethics (examples of disciplinary and non-disciplinary biopower) the focus remains on the vulnerability of the human body and our difficult relationship with it.

The problem with this early Foucauldian notion of “biopolitics as biopower” is that – and this is an argument that tormented many of Foucault’s opponents through the decades – it does not give any conceivable platform from which we can actually oppose biopower. In other words – the amount of “space” taken by biopolitics is identical to the amount of space covered by biopower. Now, I want to refer to the more modern concepts of biopolitics, within which an important difference has emerged between biopolitics and biopower. This difference is strong

enough not only to support some sort of subversive, or even utopian thinking, but also to provide us with theoretical and practical tools to challenge the hegemony of biopower. Moreover, I am tempted to think that Michel Foucault himself – by re-interpreting the concept of pleasure in biopolitical categories – reached a similar conclusion, although his academic interest remained on the side of biopower. To elaborate on the difference between biopolitics and biopower I want to use the thought of Michael Hardt and Antonio Negri – an Italian-American duo of philosophers and activists, responsible for the trilogy of books which are probably the most famous publications from the post-operaismo school of social philosophy to this day (Hardt, Negri, 2000, 2004, 2009).

The concepts of, and distinction between, biopolitics and biopower is derived from the work of Michel Foucault (even if, as Hardt and Negri note, these concepts are rarely or never used consistently) (Hardt, Negri, 2009, p. 60-61). According to them, biopower is a process that tries to exercise hegemonic control over life with a variety of devices used for the organisation, suppression and “sustainable” use of its creative possibilities – its dangerous potential is revealed in all its glory by Giorgio Agamben and the figure of “Muselmann” (Agamben, 1998, p. 104): life reduced to its pure “nakedness” – vegetative, biological, aimless existence. Biopower, in its obsessive focus on man as a species, with particular emphasis on his body, involuntarily pursues its own annihilation. On the other hand, biopolitics expresses the power of resistance, which is distributed in multitude – the dynamic form of humanity able to challenge the biopower. And although in the work of Michel Foucault subversive strategies for the production of subjectivity, paradoxically, often turn out to be in the service of biopower (just as seemingly “safe”, “conservative”, institutional discourses, as a result of the corresponding shifts and dynamic reproduction, create subversive potential), revealing the extremely ambiguous nature of biopolitical “games”, with no clearly defined antagonisms, Hardt and Negri have no doubt that resistance is all about biopolitics – understood as reclaiming ownership of a productive life. It is the starting point from which humanity can start the fight for freedom and emancipation.

Biopolitics should therefore be understood also as a “power”: as the ability of life to produce and reproduce new forms of subjectivity (Hardt, Negri, 2009, p. 56). But most importantly, it is the power prior to biopower. The original nature of biopolitical resistance can provoke accusations of a lack of autonomy on the part of biopolitical production, and its dependence on biopower, as it operates secretly within it, allegations with which Michel Foucault would most certainly agree. Hardt and Negri, however, brilliantly note that this power may be exercised only over free subjects (Hardt, Negri, 2009, p. 59-61) – if subjects’ freedom had not been the initial condition of the formation of the relations of power, the power itself would not have arisen. Biopower may not need much, but it certainly needs a bodily substructure of society. “Freedom” is the only space where you can form a government or – as we should clarify –

practice governance. No matter how paradoxical it might sound, resistance comes first, before authority. At this point, we can only appreciate the importance of Foucault's assertions concerning the possibility of exercising authority only over free subjects. Their freedom is prior to the exercise of power, and the resistance is simply an attempt to further expand and strengthen this freedom. In this context, the dream of an external point of view, or external support for the resistance, is futile and counterproductive. The resistance originates within the biopower and aims to disarm it rather than destroy.

This purely utopian notion of biopolitics seems to be the argument that Michel Foucault makes in one of his best known interviews – a conversation with Jean Le Bitoux that took place in Paris in 1978, two years after his lecture series on biopolitics at the Collège de France. This interview – named ambiguously *Le Gai Savoir* (*The Gay Science*) – touches mainly upon such subjects as sexuality and the concept of pleasure. I would like to focus on this latter idea. The most interesting question that arises during the conversation refers to the possibility of “escaping the discourse” or – in other words – a possible way of articulating some sort of human activity that would be impenetrable by biopower and therefore immune to any kind of “discipline”, “regulation” or “normalisation”. Let me quote a crucial part of this interview:

FOUCAULT: (...) Against this medico-biologico-naturalist notion of sexuality, isn't it necessary to put forward [faire valoir] something else? For example, the rights of pleasure? (...) Which seems to me to escape these medical and naturalist connotations and which have the notion of sexuality built into them. After all, there is no “abnormal” pleasure; there is no “pathology” of pleasure. (Foucault, Le Bitoux, 2011, p. 389)

It seems that – despite remarks in his lecture series *Society Must Be Defended* – Foucault believed that there is a way not only to oppose biopower, but also to practice some sort of activity that could not be “contaminated” by biopower and usurped by its disciplinary ambitions. Although all the practices of pleasure have to be in some way mediated by the practices that are already (at least partly) absorbed by some discourses, this mediation works either through the form of pure negation (like anonymous sex in clubs where both partners do not even know each other's names and do not talk to each other etc.) or in the form of a “parody” or “pastiche” (like so-called “role-playing” or – as Foucault mentions – even non-harmful forms of BDSM). In other words, even if those practices are, in some way, rooted in discourses, they manage to find some sort of a “back door” to fight them – a way to articulate their subversive potentiality.

In the later parts of the interview the concept of pleasure is directly opposed to the concept of desire. I will not go too deep into the whole complicated history of this notion, which here functions as a purely Deleuzian idea, but it appears that in our reconstruction of the dynamics between biopolitics and biopower it would be closer to the latter. “Desire” is a very dubious concept for Foucault. It presupposes “the lack of” something; the pleasure here is an effect of

achieving or getting something that we needed before, but that was not there. Any activity that gives us pleasure or satisfaction is subsequently preprogrammed by biopower, contrary to the Foucauldian notion of pleasure, which is undetermined and actually “creates” a new form or practice that did not previously exist:

FOUCAULT: (...) I believe the problem of “pleasure-desire” is currently an important problem. I would even say that it is the problem that has to be debated in this reevaluation—this rejuvenation, in any case—of the instruments, objectives, and axes of the struggle. (...) Deleuze and Guattari obviously use the notion in a completely different way. But the problem I have is that I’m not sure if, through this very word, despite its different meaning, we don’t run the risk, despite Deleuze and Guattari’s intention, of allowing some of the medico-psychological presuppositions that were built into desire, in its traditional sense, to be reintroduced. And so it seems to me that, by using the word pleasure, which in the end means nothing, which is still, it seems to me, rather empty of content and unsullied by possible uses—in treating pleasure ultimately as nothing other than an event, an event that happens, that happens, I would say, outside the subject, or at the limit of the subject, or between two subjects, in this something that is neither of the body nor of the soul, neither outside nor inside—don’t we have here, in trying to reflect a bit on this notion of pleasure, a means of avoiding the entire psychological and medical armature that was built into the traditional notion of desire? (Foucault, *Le Bitoux*, 2011, p. 389)

This antinomy between the notions of pleasure and desire applies easily to the forms of gamified and non-gamified activities within an interactive area. The whole idea behind gamification in video games – on the level of the “game itself” – is to achieve goals that, obviously, has not previously been achieved: getting items that are not part of a player’s character’s equipment; reaching an area, such as the end of a certain level, that has not previously been reached; or getting rid of a “big boss” that has not previously been killed. In most of the situations gamification combines all of the aforementioned within super-gamified structures, where we have to obtain certain items to “level-up” our character so that he or she can finally face the powerful boss. And, finally, in the end, the way out of the area is cleared so we can advance to the next level and start the procedure all over again. Video games are the perfect virtual model of how biopower-fuelled desire works: not in a vulgar, psychological sense which tells us that we like to “kill non-existing people” because we are frustrated and we cannot kill real ones, but in a highly abstract and structural sense: game-design works as a set of mini-discourses that not only set abstract “victory conditions”, but also make us want to meet them. It is biopower at its finest.

Recovering the playfulness

What are the conclusions of applying the biopolitical perspective to the theory of game design? Or – in other words – what is at stake in applying such a reinterpretation of the inner relationship between “gamified” and “non-gamified” areas? Within the realm of socio-political activism it remains very clear: if we accept the biopolitical reading of social structures and discourses towering over them and, as careful students of Michel Foucault's work, we accept all the repercussions which come with it, we know that there is no such thing as thought or praxis outside or above the biopower. The only means of subversive mobilisation is from within the biopolitical area – the idea of bodily-oriented opposition to biopower, whether focused on the new, “empty” principle of pleasure, trying to disarm forms of violence and oppression rather than abolish them, or on more “politicised” ways of recapturing the previously seized parts of life, as in Hardt and Negri's theory.

In understanding video game design and the manner in which the gamification works, this kind of perspective can help to balance certain aspects of design. I would say that an inversion of our perspective on video games could turn out to be very productive: we are used to thinking about video games basically only from the “gamified” point of view. When we think of games, we think of the goals, procedures, and ways of maximising our proficiency in moving forward with the progression of the story or within a set of challenges. We intuitively ignore boundaries of the gamified activity, and areas of undetermined, free, playful interaction, which arise around them. Challenging the hegemony of the gamified heart of game design – this is what is at stake in the biopolitical process of recovering playfulness.

The ongoing commercial phenomena of “open-world” games are a sign that the will to challenge the primary role of gamified activity within an interactive area is strong, both in the developers’ and gamers’ communities, although the manner in which this process is often conducted is not very satisfactory – many of these games (of which the most notorious example remains the *Assassin's Creed* series) spectacularly fail when it comes to evoking the “playful” experience.

Small and independent studios turn out to be much more productive. Where the big developers did not succeed, offering no alternative to the dominant model of the high-budget modern video game – with simple, mostly combat-based mechanics, chunky design of rules and predictable victory conditions – groups of programmers and designers have started to question that hegemony.

Probably the most basic example of a gamified narrative mechanism is the fact of winning the game after successfully fulfilling all the necessary victory conditions. When we take a look at the history of video games we will see that even in the “corporate” part of it there are ex-

amples of games that try to derogate from this principle – titles like *Planescape: Torment*, *Red Dead Redemption* or *The Walking Dead* ended with the main character dying at the end of the game, which was not and still is not, by any standard, a regular pattern in the industry. But when we look closely at the storylines of those three games we can perfectly see how – despite seemingly *losing* at the end – the player is still actually rewarded. In *Planescape: Torment* the end of the main character’s journey also means the end of his many years of suffering, in *Red Dead Redemption* the player gets the chance to avenge the dead protagonist by briefly taking control of his son, and in *Walking Dead* the death of the main character turns out to be a heroic sacrifice. All three productions, by incorporating narrative motifs deeply rooted in modern pop-culture, manage to transform failure into success and therefore into an operational narrative gamifying device. This most basic gamification mechanism – “play well – win the game” – was not broken until the rise of so-called “independent games” in the second half of the 2000s.

When Failbetter Games studio, led by programmer Alexis Kennedy, created in 2009 *Fallen London* – a browser-based, adventure Massive Multiplayer Online Game, set in an alternative-reality Victorian London – it included a very peculiar, completely optional storyline. Heavily influenced by the work of H.P. Lovecraft (whose novels’ protagonist never actually succeeded in anything) it was called *Seeking Mr. Eaten’s Name* and basically did not let the player win, ruining him economically instead:

In the early days of *Fallen London*, we added an experimental storyline. It gave the player the option of developing a ghastly obsession which would ruin their character’s life, requiring savage ordeals that chewed up their abilities and resources. It was initially very popular, and then as we tightened the screws and people realised we meant the warnings that no good would come of it, only the most determined stuck with it. (Kennedy, 2013)

After a lot of controversy the experimental storyline was finally removed from the game. The studio even decided to offer some refunds in response to some more serious complaints, which should not come as a surprise: since Massive Multiplayer Online is a genre with extreme focus on the competition between players, it is also a very “gamified” category of video games:

The breaking point came when a particularly savage – and buggy – piece of *Eaten* content did players more damage than they’d expected. A couple asked for a refund on the *Fate* they’d spent on the resources they’d lost (a third player even made a legal threat, but retracted it after it turned out he, er, hadn’t even played the content). (Kennedy, 2013)

Today, the best example of affirming “playfulness” in video games is the popularity and critical success of “explorative games”: productions which question the necessity of the existence of goals and victory conditions, while simultaneously trying to explore and enhance the al-

ternative ways of interacting with virtual space. Developers like Simogo (*Year Walk*, *Sailor's Dream*), The Astronauts (*The Vanishing of Ethan Carter*) or ceMelusine (author of extremely short “games-thumbnails”, “digital spaces” capturing single moments with very little interaction) constantly try to question the “hegemony of gamified space”, but the most famous – and probably the most successful – remains the work of Belgian studio Tale of Tales.

What should be noted is how the members of the studio describe their work on their website. It is a perfect example of a creative way of developing the terminology, which embraces the “playful” side of video game design:

Our goal is to create elegant and emotionally rich interactive entertainment. As artists we focus on beauty and joy. We want to create art for people. That is why we distribute our work on line, and cheaply. As designers we hope that videogames can be as diverse and meaningful as any other medium. We want to create playful experiences that appeal to both gamers and non-gamers. We try to design expressive interfaces to access engaging poetic narratives through simple controls. (Harvey, Samyn)

Tale of Tales' games experiment with attempts at blurring the boundaries between “gamified” and “non-gamified” areas, as well as directly questioning, or even negating, their right to stand. While some of their games, like *The Forest* or *Luxuria Superbia*, work with the concept of explorative playfulness, the brilliant small game called *The Graveyard* challenges the sovereignty of gamification in a very original way. In *The Graveyard* our task is to reach – as an elderly woman – a bench in the titular graveyard. When we manage to do that our character suddenly passes away. There is no prize, no “victory” screen, no logical explanation. This time there is no reward after death.

According to Giorgio Agamben, the ultimate boundary of biopower is the human body (1998, p. 11-14): as a mortal object of interest, it establishes the limits of what it can, and what it cannot, survive. *The Graveyard* repeats this thought, and – to oppose the sovereign power – it decides to get rid of the player, and in this wonderfully radical move it reveals the whole potentiality of a yet undiscovered part of video game design.

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GAMIFIED GAMEPLAY: GAMIFICATION IN GAME DESIGN

Mateusz Kominiarczuk

Commonly accepted definitions of gamification explicitly prohibit the “gamification of games”, stating that even if it occurs, it is either impossible to distinguish from regular “game design”, or else limited to achievements. However, careful examination of design trends observed in games published after 2010 indicates otherwise. A case study of two game series by Blizzard Entertainment was performed: *Diablo* and *StarCraft*. The recent releases in each of these series were compared with their predecessors. In light of each series’ design history and ongoing development through patches and expansions, we arrive at the conclusion that the “gamification of games” trend is quite real, and not limited to achievements.

Problems with “gamification”

Like other papers collected in this volume, this chapter, too, deals with gamification, and the question of “gamified games” in particular – as we will see, a hardly uncontroversial concept. The authors of *From Game Design Elements to Gamefulness* define “gamification” as “the use of game design elements in non-game contexts” (Deterding et al., 2011, p. 2). Thus, their definition explicitly excludes the possibility of “gamification of games”, since – in their own words – “that would simply be game design” (Deterding et al., 2011, p. 4). The basis for this argument is the notion of “gamefulness” and “gameful experience” (“complementary but distinct” from “playfulness” and “playful experience”), and the presupposed link between “gamification” and “games”, as illustrated in the paper (Deterding et al., 2011, p. 3-5).

However, notable critics of gamification – Ian Bogost chief amongst them – have long since demonstrated that the so-called “game mechanics” so readily implemented by gamificators are neither core nor specific to games (Robertson, 2010; Bogost 2011, p. 2; Kelly, 2012; compare Zichermann and Cunningham, 2011, p. XV).¹ Huotari and Hamari (2012a, p. 18) raise a similar point, going so far as to state that “[t]here are no game elements, or if there are, they are not unique to games as we understand them”, and “[t]here are no non-game contexts... or game contexts for that matter” (2012b). Therefore, some other term may be more suitable – perhaps “pointstification” (Robertson, 2010) or “exploitationware” (Bogost, 2011).

Despite their differences from Deterding et al. (2011), Huotari and Hamari (2012) actually preserve the link between “games” and “gamification” in their own definition of the latter, alternative to the one formulated by Deterding, Dixon, Khaled, and Nacke. According to Huotari and Hamari, “[g]amification refers to a process of enhancing a service with affordances for gameful experiences in order to support user’s overall value creation” (Huotari and Hamari, 2012, p. 19). Viewed from the perspective of service marketing, it can be further compared with “enhancing services” accompanying the “core services” in the “service package” (Huotari and Hamari, 2012, p. 18-19). In their own words, “gamification describes a service system where a core service is enhanced by another one” – whether the service in question is or is not a game itself (Huotari and Hamari, 2012, p. 20). As we can see, gamification as defined by Huotari and Hamari does not preclude the “gamification of games” in the slightest.

Personal preferences aside, given that these are the only two peer-reviewed academic definitions of gamification to date, how are we to determine which one is more accurate – the one by Deterding et al. or rather the one proposed by Huotari and Hamari? Although well-argued, the latter fails to address one of the strongest points raised by Deterding et al. (2011, p. 4-5), namely whether it is even possible to distinguish supposed “gamification of games” from regular “game design” (as opposed to merely a “meta game platform”), or in Huotari and Hamari’s (2012) terms, how one is to differentiate the “enhancement” from the “core service” when the service in question is a game itself. Before we answer this question, we have to establish what a “meta game” is, and how one can determine whether he or she is dealing with a “core game” or a “gamification/enhancement service”. Then we shall not only answer the questions, but also resolve the problem of the choice between the two competing definitions.

1 In fact, they are not even universal amongst games. Zichermann and Cunningham in particular cite social games as the inspiration behind gamification, as opposed to “games overall” (2011: 23, 24).

Of achievements, services, and (meta) games

According to Huotari and Hamari, “[t]he core service of the game is to provide hedonic, challenging and suspenseful experiences for the player(s)”, evaluated by the “flow” phenomenon (Huotari and Hamari, 2012, p. 19) as described by psychologists (e.g. Skok, 2013). They also note that even though the game is already “gameful”, it “can be further gamified, creating so-called meta games” (Huotari and Hamari, 2012: 20). They do not define “meta games” further (nor in fact reference them anywhere else in the published paper), but another study co-authored by Hamari – *Framework for Designing and Evaluating Game Achievements* (Hamari and Eranti, 2011) – goes into more details.

Hamari and Eranti (2011, p. 15) note that “[a]chievements are always simultaneously related to at least two coinciding games, the achievement completion (meta-)game and the one in which the achievement’s fulfilment conditions are met”. Such a “(meta-)game” can be either part of the “game platform” (Valve’s Steam is one example) – and thus external to the game itself – or else part of the “game proper”. Most of Hamari’s and Eranti’s work deals with the first case, also briefly discussed (and critiqued) by Deterding et al. (2011, p. 4-5). The second one, however, is far more interesting, if only because it was merely touched upon by all the researchers mentioned.²

Since their introduction in Microsoft Xbox 360 in 2005 (Bycer, 2013), achievement systems have become nearly omnipresent (Hamari and Eranti, 2011). Along with levels, badges, and points, they have become the staples of the “gamification” strategy (Bunchball, 2010; Zichermann and Cunningham, 2011). The identification of these two is so strong that the mere mention of “game achievements” provokes questions about “gamification of games” (Deterding et al., 2011; Bycer, 2013) – not without some merit, according to Hamari and Eranti, who analysed several achievement systems and provided a framework for their evaluation (2011).

But this poses a different problem. If achievement systems in their current form (although with some recent variations) (Bryce, 2014) were introduced for use with games a few years before gamification became a trend, does that mean that Deterding et al. are right, and there is nothing to differentiate “gamification” from “game design”? Not necessarily. For one thing, what is now called “gamification” arguably existed in various forms long before 2008 (Deterding et al., 2011, p. 1-2). Moreover, we have yet to decide whether “enhancements” such as achievements systems are separable from games themselves. In their case, the answer ap-

² Note: in gamers’ jargon, “metagame” (“meta” for short) is the way the game is generally played at a certain level at any given time. It includes common character builds and item choices (in *Diablo*), as well as the build orders, timings, and army compositions (in *StarCraft*), among others. This common usage bears no resemblance to the academic usage and should not be confused with it.

pears to be in the affirmative, with full discussion in Hamari and Eranti (2011). But is it enough to add achievements to a game to call it “gamified” if it is so contested? Probably yes, but a stronger argument is required.

Since Deterding et al. (2011) consider any attempts at separating the supposed “gamification” from the “core game” unnecessary at best, and impossible at worst, whereas Huotari and Hamari (2012) do not pose such objections, all we need to do in order to decide who is right is to falsify this claim. If we are able not only to find a game that was supposedly “gamified” (preferably not just by its inclusion in a platform-wide achievement system), but also to show that the “gamification” layer can be separated from the “core”, then it logically follows that the more inclusive approach advocated by Huotari and Hamari is closer to the truth than the exclusive definition proposed by Deterding et al. (2011).

In order to do this, we have to empirically compare at least two titles, if possible from the same genre and franchise. To this end, two long-running game series by Blizzard Entertainment were selected, specifically *Diablo* and *StarCraft*. *Warcraft* – another iconic Blizzard franchise – was also considered for analysis, but ultimately abandoned due to its far less uniform nature and very different release history³. In the end, five games (along with their official, Blizzard-released expansions) were analysed, particularly *StarCraft 2*, a sequel to the critically-acclaimed RTS *StarCraft: Brood War*, and *Diablo 3*, an heir to *Diablo* and *Diablo 2: Lord of Destruction*, highly-successful hack-and-slash action role-playing games (HnS ARPGs).

What they have in common – besides their popularity, the company behind them, and the release in the 2010s, over ten years after the original games in the respective series – is how they deviate from their predecessors, as well as their “online-only” nature (and thus, the reliability of obligatory official patches). As we will see, while their core gameplay has remained mostly unchanged from the older games in the series, they also tend to engage players in various “meta games” which were introduced after their original releases.

3 Besides the original RTS series, *Warcraft*, (1995, 1996, 2000), the franchise also encompasses the arguably more popular subscription-based MMORPG *World of Warcraft* (2004), as well as a recent free-to-play electronic collectible card game *Hearthstone: Heroes of Warcraft* (2014). *Diablo* was at one point adapted to a tabletop RPG supplement (2000), and *StarCraft* was the inspiration for a board game of the same name (2007), but neither of those attempts has any consequence for the following analysis. The same is true for *StarCraft: Ghost* (a stealth TPP spin-off, cancelled in development) and very early, never-published MMO-oriented designs of *Diablo 3* by Blizzard North. In the same vein, although both *StarCraft: Brood War* and *Diablo 3* were released on consoles as well as PCs, this paper deals solely with their PC versions.

In search of the “game core”: a look at the history of *Diablo* and *StarCraft*

To discuss the more recent releases in context, we have to first understand the original games in the *StarCraft* and *Diablo* series: what they were, and what they became. Only then will it be possible to discern the “core” parts of the game from various “enhancements”.

***StarCraft* and the Battle.net**

In *StarCraft: Brood War*⁴ players can progress through the story in a series of increasingly-difficult missions organised into a single player campaign, play against computer and/or human opponents in custom maps, or even use the provided map editor to modify or create their own scenarios. At the time of its original release, one of the most defining features of *StarCraft* was the asymmetric, diverse design of the three playable factions: terrans, protoss, and zerg. Though enjoyable in the single player mode or with friends through a local network, one of the main strengths of *StarCraft: Brood War* is the free-of-charge matchmaking Battle.net platform provided by Blizzard for players looking for opponents online.

Thanks to Battle.net and the good game balance (achieved only after several patches), as well as the local conditions at the time, *StarCraft*'s popularity quickly rose, especially in South Korea – up to the point where it became a competitive electronic sport (or “e-sport”), with matches between professional players transmitted by dedicated television channels (*The Korean*, 2010). These entwined competitive and spectacular traits were further developed in subsequent releases of the game following Patch 1.0.8. (the one which first introduced “game recording”, or “replays”) for the original *StarCraft*.

A recent study by Simon Dor (2014) provides an accurate first-hand description of *StarCraft: Brood War* gameplay, as well as an in-depth analysis of “the heuristic circle of real-time strategy process”, as illustrated by an actual competitive match between professional *StarCraft* players. Dor depicts *StarCraft: Brood War* as an exemplar real-time strategy game and highlights what he considers to be its core gameplay elements, particularly “optimizing units’ actions” (Dor, 2014) (a part of the game often referred to as “micro” and “macro”, that is “micromanagement”, or direct control of units, and “macromanagement”, expansion and devel-

4 Technically, *Brood War* is only an expansion for the original *StarCraft* (1998). However, due to the very short gap in release dates (less than a year), and the urgent need for a simple way to distinguish the franchise from the first game title, and that from its sequel(s), *StarCraft: Brood War* is often understood simply as “the first game in the series”. Since the point of this paper is a juxtaposition of original games from the late 1990s/early 2000s with their continuations from the 2010s, an additional distinction between a “base game” and an “expansion” released within several months from each other is unnecessary.

opment of army production facilities, economy, and technology). If we were to substitute the base play experience of *StarCraft: Brood War* with that of its sequel, *StarCraft 2* (either *Wings of Liberty* or *Heart of the Swarm*), we would not have to change much in Dor's description, except for a few very minor details (such as the number of worker units available to each player at the start of the match or the introduction of campaign-specific game difficulty regulation). One might argue that the same would be true for most RTS games, but it is exactly the "generic core" of the game that we are looking for.

Examining *StarCraft* and its sequel in detail, we encounter multiple rule changes not just between games (or even between the base game and its designated expansions), but also from patch to patch. Certainly they affect the way the game is played, but the overall experience remains quite consistent even as the strategies change. If we are searching for possible "enhancements", instead of recounting what were essentially balance tweaks we should pay very close attention to authentically new game features introduced over time. Of particular importance to us are functions which were missing from earlier releases, such as the replays system mentioned earlier or the achievements system from *StarCraft 2* (absent from *StarCraft: Brood War*). Before we proceed any further with the analysis of such non-core features, let us consider the *Diablo* franchise.

Diablo

The original *Diablo* was not the first hack-and-slash action role-playing video game, but due to its immense popularity, other games of the genre were often called "Diablo clones". The goal of the original game was to delve deep into the randomised dungeons, at the bottom of which the final boss - "Dark Lord", or "Diablo" - waited to be defeated in combat by the player-controlled hero. Originally three character classes (warrior, sorcerer, and rogue) were available. Class choice affected the character's starting statistics and unique skills, such as the sorcerer's ability to recharge spell wands, as well as available equipment. Throughout the game, characters were awarded experience points, gold and items for killing monsters and fulfilling quests. After collecting sufficient experience, the hero advanced in level and power.

Diablo's strength lies in its simple yet mesmerising gameplay (kill monsters, collect items, kill stronger monsters in the hope of gaining even better items, etc.) paired with randomness of rewards (often compared to operating arcade slot machines). Both *Diablo 2* and *Diablo 3* further developed this idea, staying true to the tenets of an "endless randomized treasure hunt" while

introducing their own character classes and skill systems, as well as open-world exploration, story-oriented “campaigns” divided into “acts” (each one ending with a climactic boss fight), and new game modes – “normal” and “hardcore”.⁵

The original *Diablo* was Blizzard’s first game to utilise the Battle.net platform, which led to the game’s popularity. It was still primarily an offline game, as is apparent in the fact that only very few quests available in the single player mode were ever ported to multiplayer. Nevertheless, Jonas H. Smith placed *Diablo* “among the first truly successful commercial online games”. He also noted that due to the initial entirely local data storage, “the gaming experience was seriously affected by the amount of cheating apparent among many participants” (Smith, 2007). Neither the rampant cheating nor the merely partial porting from single- to multiplayer prevented the game from becoming a top seller, and each subsequent release further emphasised the online aspect of the game. *Diablo 2* and its expansion, *Diablo 2: Lord of Destruction*, added an option to play in “closed” Battle.net “Realms” (with game and profile data stored on server instead of with the client). Unlike the previous games in the series, the computer version of *Diablo 3* requires an internet connection to the Battle.net servers at all times and thus cannot be played offline at all – even in the single player mode.

While *StarCraft* is mostly competitive (although it affords some forms of team play), as an ARPG, the original *Diablo* is oriented towards cooperative, Player(s) vs. Environment play – a tendency fully embraced only recently.⁶ Nevertheless, designers provided players with the option of fighting with or against their friends and strangers on Battle.net or their local network. In both *Diablo* and *Diablo 2*, the winner of a Player vs. Player duel could collect a trophy – an ear of the defeated enemy. This “proto-achievement”, as we may view it, was never part of *Diablo 3*, which did not offer even the most rudimentary PvP prior to Patch 1.0.7. and its “duelling/brawling system”. Aside from individual PvP matches, the main form of competition in the *Diablo* series is ranked play afforded by the “ladders” first introduced in Patch 1.10. for *Diablo 2*, and then reintroduced as “seasons” in *Diablo 3: Reaper of Souls* Patch 2.1. (a few months after the expansion’s release).

5 Playing in “hardcore” mode meant that a player’s character could not be resurrected after dying, a restriction which did not apply to the “normal” game mode. *Diablo 3* kept that distinction, but in the original *Diablo* all characters risked permanent death (unless the game session ended without saving).

6 Even though early development of *Diablo 3* hyped the competitive features such as an “arena PvP”, the developers ultimately decided that it is impossible to achieve a satisfying PvP experience in a PvE-oriented game. Upon this conclusion, plans of a more sophisticated PvP mode were cancelled in favour of alternative competitive options (Keefer, 2014).

In both *Diablo* and *Diablo 2*, players were free to exchange or even give away their in-game spoils. The same was true in *Diablo 3* as well, but only to a point. Due to the uncertainty inherent in the search for specific items generated randomly, many players resorted to cheats, and a real-money black market rife with online scammers. Blizzard tried to prevent such a scenario in *Diablo 3* with an official, anonymous and highly-automated in-game auction house (based on virtual gold and real money). It was later recognised as causing a huge detriment to the players' experience and the dynamic of item hunting intended by the developers, which ultimately led to both the closure of the auction house and the changes in game rules which removed most other forms of trading in Patch 2.0.

Battle.net

We have discussed the core elements and development of games in the *StarCraft* and *Diablo* series, and in both cases the Battle.net system was cited as a huge factor behind the games' popularity. Its influence does not stop there. In *StarCraft: Brood War*, *Diablo* and *Diablo 2*, the game itself merely enabled access to the Battle.net platform, which in turn allowed game creation with friends and strangers online. Since its introduction in 1996, when all the game data was stored locally, Battle.net has been almost completely redesigned to its current form (the so-called "Battle.net 2.0"). It still provides matchmaking for players of games distributed by Blizzard Entertainment, but it has become much more than that.

As of 2013 it is no longer accessed through a game; rather, the opposite is true. An associated Battle.net Desktop App doubles as a unified game launcher/installer/update manager and a game-independent, rudimentary social network system for players of Blizzard-produced titles. It includes lists of friends, recent and nearby players (sharing the same network), open and private chat channels, and a dedicated web browser featuring Blizzard-related news. Except for this last part, all the listed options are also constantly available in-game. Most of these functionalities were not available prior to the introduction of Battle.net 2.0 circa 2009 and its further revisions in 2013. Older Blizzard Entertainment games (other than *World of Warcraft*) remain independent from the desktop app, while every Blizzard release since 2012 has been online-only.

Towards gamified games?

Deterding et al. state that to apply “gamification” to a game “would simply be game design, not “gamification””, since by their definition, “gamification” is “the use of game design elements” (2011, p. 4). This tautology does not hold if we consider the possibility that “gamification” relies on very specific solutions, which may or may not be utilised in the design of any given game.

Beyond the essential, “core” rules of the game there are other, more “meta” systems as well, only remotely connected with the basic gameplay and often added only after a time. They do influence the play experience and may change the way the game is played – or remain entirely ignored. The example of one such system, namely an achievements meta game, was discussed at length by Hamari and Eranti (2011). Both *StarCraft 2* and *Diablo 3* utilise in-game achievements (the latter one much more prominently than the former), sharing an autonomous design feature absent from previous releases in the respective game series.

In addition to the achievements, *StarCraft 2* and *Diablo 3* also utilise other comparably non-core features, particularly competitive ranked play and account experience. Some of these are available solely from within the game, while others can be accessed and reviewed from outside – through the Battle.net Desktop App, the Battle.net website, or even third party sites (compare Huotari and Hamari, 2012, p. 20). We shall now review examples of recognised “game service enhancements” in two categories (ranked play and account experience) found in games from both series.

Ranked play

Seasonal, competitive rankings exist – or existed for a time – in *StarCraft: Brood War*, *Diablo 2* (since Patch 1.10.), *StarCraft 2*, and *Diablo 3: Reaper of Souls* (since Patch 2.1.), but in each case they were implemented differently, the only constant being the requirement of a connection to Battle.net. Other, third party ladders are also available, and in the case of *StarCraft* are the basis of an actual professional gaming scene.

StarCraft: Brood War awarded or took away points for every eligible match played between human players over Battle.net based on the outcome (victory, loss, or disconnect) and the relative standings of the opponents. The starting score on the ladder was set to 1000, while the maximum was 9999. The official rankings for *StarCraft: Brood War* were discontinued after 2005, while external ladders – such as the International Cyber Cup – still thrive (<http://iccup.com/en/>).

Rankings featured in *StarCraft 2* are more sophisticated and are closely related to an automated matchmaking system. Before actually participating in the ladder, each player has to first complete a series of initial league placement matches against other players. Afterwards, each match earns or costs the player some ladder points, influencing his or her position within the league and the overall ladder structure. Additional scoring- and evaluation-related subsystems are also in use. Top players on a server are placed in the “Grandmaster” league (introduced in Patch 1.3. for *StarCraft 2: Wings of Liberty*). Regardless of the official Battle.net classifications, other, third party tournament-based, rankings also exist.

Diablo 2 utilised a more straightforward system, with its “race to the top”-style ladders featuring more challenging, but also more rewarding (compared to other game modes) premium content. From Patch 1.10. onwards, players on closed Battle.net Realms could choose to create a character as a “ladder hero” in order to get a chance at finding some of the ladder-only items and participating in special online events, such as the “Pandemonium Event” (or “Uber Tristram”) from Patch 1.11. The highest-level ladder heroes are placed in the ranking. After a season ended, participating characters were moved back into the “normal” pool together with all their equipment, and in the next season, all players would start afresh. Blizzard continues to support *Diablo 2* ladders even though they are not under any further development.

Diablo 3: Reaper of Souls offers a similar “fresh start” experience, even stronger in that many game features are shared by all characters on a given account (although “normal” and “hardcore” heroes are still separated). This pertains especially to collected gold, items in stash, achievements, and artisans (in-game services that can be upgraded for a price in virtual gold). Players participating in a new season are offered a chance to experience the game anew with newly created characters. Achievements obtained in the course of a season are counted toward the non-seasonal “achievements hunt” as well, and some (particularly the so-called “conquests”) cannot be fulfilled at all outside of the ladder. Unlike in *Diablo 2*, the competition is mostly based on constant attempts to gain a higher rank within a “Greater Rift” – an entirely randomised, timed game environment. Non-seasonal players may also participate in a competition, but in exchange for preserved progress they concede their chance at season-specific rewards.

Even before *Reaper of Souls* and Patch 2.1. introduced Greater Rifts and associated rankings, various third party *Diablo 3* ladders sprang up in the design void left by the lack of officially-supported competitive options. They tried to measure characters’ level progression (in the vein of *Diablo 2* ladders) as well as the item hunt by evaluation of equipped items and comparison with other registered players. Two such ladders are available as DiabloProgress.com and Diablo3Ladder.com.

Account experience

Roleplaying games in the vein of *Dungeons & Dragons* (Gygax and Arneson, TSR 1974) introduced the concepts of “experience points” and “experience levels”, which are now commonplace in various games and game-like loyalty programs. As ARPGs, *Diablo* games feature class and level advancement at their very core. However, *StarCraft* never included any kind of experience system except for the rankings, which seem functionally identical. In spite of that, Patch 2.0. for *StarCraft 2* introduced just that – an experience system entirely distinct and independent from the ladder.

Players participating in *StarCraft*'s ranked play are constantly faced with challenges. To keep their placement (not to mention advance in the rankings), they have to constantly prove their prowess in matches against other players – their supposed equals as well as an occasional lower-ranked challenger or higher-ranked opponent. This constant pressure, together with very real risk of ladder point losses in the case of defeat, results in what is known as “ladder anxiety”. To prevent the thinning out of the player base, *StarCraft 2* developers introduced the option of non-ranked play (with the same matchmaking algorithms in place and even against ranked opponents) and an alternative meta game: account experience.

Playing either one of the three races in any multiplayer mode will earn experience points for the player, regardless of the results of the match. At certain experience levels (separate for each of the three factions) various cosmetic rewards are unlocked, such as alternative unit skins or faction symbols. These points are awarded during the game, for example for destroying enemy structures and producing units, with a noticeable boost in the case of victory. Unlike the ladder points, they cannot be lost and are never zeroed. Moreover, every match – even a lost one – earns players some experience points, thus rewarding the very effort put into playing, and not specifically winning.

Diablo 3 also utilises some sort of account experience (at least it has since Patch 2.0.), but in this case the system is more integrated into the base game. Initially, maximum level characters were no longer participating in the experience grind – they were already at their best. However, Patch 1.0.4. introduced “paragon experience”, to be gained as an end-game objective for maxed out characters. Later, in Patch 2.0., paragon levels were redesigned as essentially infinite account levels. Instead of a specific hero, every character in a given mode (seasonal/non-seasonal and normal/hardcore) would benefit from them, thus affording additional customisation and informal competition.

Regardless of the in-game benefits, at certain thresholds (first after every 10, then after every 100 paragon levels), a player advancing through the paragon levels would be rewarded with an increasingly ornate “paragon portrait”. The paragon level is also one of the data displayed on the public “career” Battle.net page and the similar in-game profile of every registered

player, alongside campaign progression, time played by class, and accounts' "lifetime kills". It cannot be lost even in the case of a hardcore "paragon" character's death. Paragon experience is therefore partially character-independent as well as permanent, and designed with "effort promotion" (and not necessarily competition) in mind.

As we can see, despite noticeable differences, the account experience systems in *StarCraft 2* and *Diablo 3* share certain similarities in their design and fulfilled functions, as they promote continuous effort put into play while avoiding penalisation of the player's failures and shortcomings. They are also separate from and complementary to the competition-oriented ranked play discussed earlier, and only loosely tied to the core game. This last point pertains mostly to the *StarCraft 2* experience system, since in *Diablo 3*, the entire system is more integrated with the basic premise of the game, thus making it harder to indisputably isolate as an actual meta game feature.

Conclusion

In the introductory part of this chapter, we asked two questions: whether "gamification of games" is even possible, and if it is, how we can we distinguish it from the "game proper" to merit such diagnosis. Two academic definitions of gamification were discussed in detail: one formulated by Deterding et al. (2011) and another proposed by Huotari and Hamari (2012). Since the former explicitly proscribes "gamification of games", whereas the latter affirms the possibility, finding the answer to our initial questions would also serve to decide which of the opposing definitions is closer to the truth. Having done that, we engaged in a short discussion on "meta games" exemplified by achievements systems, as described by Huotari and Hamari (2012) as well as Hamari and Eranti (2011).

To answer the initial questions, we briefly described the "core game features", or "core services" in Huotari and Hamari's terms, as well as the post-release development of the *StarCraft* and *Diablo* games series. It enabled us to recognise the general trends that informed the evolution of both series (sport-like competition and spectatorship in the case of *StarCraft* and a series of shifts towards more social and casual cooperative experience in *Diablo*), and to isolate in their ongoing design various non-core innovations, or "service enhancements". These included game match replays (*StarCraft*), ranked ladders/seasons (both series), achievement systems (both series, mostly *Diablo*), social networking tools (both series), and account experience systems (both series, mostly *StarCraft*). Of these, ranked play and account experience systems were discussed in more detail.

Having done that, we arrive at the following conclusions:

1. The practice of gamified game design is not only possible, but very much real and not limited to platform-based achievement meta games.
2. It is entirely feasible to distinguish the “service enhancements” layer, or “gamified design”, by means of post-release game development analysis. Except for borderline cases of strongly integrated mechanisms embedded within the larger system of a given game, as with account experience/paragon levels in *Diablo 3*, such a distinction does not present any obvious difficulties.
3. The definition of gamification provided by Deterding et al. (2011) should be discarded in favour of the more accurate proposition formulated by Huotari and Hamari (2012).

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AFTERWORD: GAME OF THE TERMINALLY PROSTHETIC SUBJECT

Szymon Wróbel

Game paradigm

Is the world but a game? Is the cosmos a playground? If so, so be it – but what would the aim of such cosmic gameplay be? What would the rules of such a game be? Would they be similar to the laws of nature as currently understood? Or perhaps it is only *la comédie* designed as a theatre play? Further, could the turn of contemporary society towards gamification, so to speak, be explained by the sheer fact that gameplay is perhaps the most “inhuman” and “abstract” of all the arts – not only because the whole world plays comedy, but primarily because in the world there is nothing to be won, except the game itself? Is “the ability to be programmed” but one inherent feature of the cosmos? In other words, can the cosmos be described in terms of the real-time execution of a finite set of instructions (Eigen, Winkler, 1983)? Perhaps we have become a society disciplined by outplaying – do not mistake this for “playing out” – games in all available disciplines? Perhaps this society of ours is the first case of a society bearing witness to full gamification – a society using and applying mechanics and rules of computer strategy games to non-game contexts in order to maintain, modify and model the behaviour of individuals and groups of people?

These are the questions posed in the collection of essays this book presents. These are the issues addressed by members of a generation “hypnotised” by images displayed on the screens of their tablets, PCs, laptops and notebooks, the subjects “reduced” to the functionality offered by consoles and computer keyboards, slaves to smartphones, linked in and wired.

It was Alexei Ivanovich, the main character of *The Gambler* by Fyodor Dostoyevsky (2014), a novella written under deadline to pay off the author’s gambling debts, who perhaps anticipated this new social constellation: subjects subjugated to full gamification, addicted to gambling on a global scale.

The gamification hypothesis would claim that the members of modern societies are constantly involved in positioning themselves against multiple others: in rankings, by screening each other’s parameters, by presenting their past and present achievements to the world, by posting them in Halls of Fame and craving yet a better score, and by carefully scanning the leaderboards for their own status and for ways to get ahead – in this or another way indulging in endless comparisons with other players. Here, of course, my concern goes beyond gambling. I am not, in fact, concerned with playing roulette or playing the stock markets. I am not even referring to how life is conceived in parallel with virtual reality games. What I am getting at, though, is that we play not only against one another for this or that game stake, that we compete not only against one another for finite resources – but above all, that we play ourselves and pep-talk ourselves into competing with ourselves. On our smartphones alone we now track our “biological resources” – blood pressure or heartrate. Not only do we track our healthy or unhealthy activities every day and carefully schedule daily needs such as intake of calories, not only do we – or more precisely our phone apps – collect and process our motion data, sync and set alerts for upcoming calendar arrangements or events organised via social media, not only do we record our daily expenses in our personal finance apps and compare these records with those of our neighbours online; on top of this, we actually record our beloved pets and photograph our loved ones to later perform all sorts of image manipulation for yet more fun, then share it with our followers on social media. It is here at our fingertips and on our laps where the novel gameplay has truly gained a foothold. It is here where at any one time we present ourselves in the game of life and observe the totality of our chances of survival. It is here where we outplay ourselves and outwit one another. And yet, we had better be sure that at any given time, in dungeons across the globe, regiments of programmers and developers are designing and developing new apps to subject us to even more ghastly disciplines within life. Today it is programmers who are the guardians and the messengers of the truth, as far as salvation in today’s life is concerned.

Having said that, we should, prior to asking ontological questions, investigate one question of an epistemological nature regarding the social world: what model of game is being promoted in it? Do we have at our disposal any paradigmatic approach to analysing games? Do we have a formal model? Here, I see several possibilities.

First, the game is both the subject and the object of psychoanalytic considerations, whereby a game is conceived as “some-thing” that is subject to the “pleasure principle” (Freud, 1968). Thus, the stake is pleasure and the promise of pleasure is the only promise a game can fulfil. Sigmund Freud’s famous analysis of child’s play – *Fort/Da* – allowing a child separated from his or her mother to regain a sense of control over the world allows us in turn to guess that play is at the service of organisation of pleasure and control (Freud, 1920). From the psychoanalytic point of view such play would above all be a game of control, i.e. where things are made to appear and disappear. Jacques Lacan argues that the very first game of control is when the child abolishes (“abolit”) the game itself by making the object disappear. This primitive repetition illustrates that the object’s identity – a concept – is beyond time: “it is maintained both in the presence as it is maintained in its absence” (Lacan, 1987). Above all, the game gives psychoanalysts assurance that in order to understand the symbolic order one may not start with the analysis of language. It is neither words nor speech nor speaking which constitute the Symbolic but it is rather the object or the thing – e.g. a tombstone or a monument – which is the most lasting manifestation of the loss and the symbol of man’s disappearance. First and foremost, a game is a promise to provide pleasure through the object’s disappearance.

Secondly, a game is a transaction, or more precisely an entire sequence of transactions. Transactional Analysis with its list of hidden, cross, angular, and parallel transactions allows us to go as deep as the script of a game, far beyond the analysis of the “stake” of a game and its “power” (Berne, 1964). Indeed, games are played out in imagined realities, that is virtually – and as such they may be set against “real life” – and yet they are not only socially programmed – that is, resulting from the fear of boredom and the lack of a better idea of how to structure time individually – but above all stem from the fact that the social scene alone has today taken the form of a “playground”.

Ludwig Wittgenstein was fully aware of this when he wrote that what we take in language to be “play” is in fact a pure concept that may only serve as a preliminary study into the future of rationing and regulation of language, an idealisation and “first approximation”, which does not take into account the complexity of reality – the fact that the world is a labyrinth. Games serve rather as “comparative objects”, akin to members of an extended family, who/which, taking into account their similarity or dissimilarity, may shed some light on the power relations conditioning our language. Wittgenstein, therefore, calls us to “awaken” from what we actually see. Philosophical problems arise only when the language “celebrates”, i.e. when we realise that the “naming game” is not and has never been a sort of miraculous act in itself –

“baptism of the object” – but that it is merely about a peculiar use of a word, i.e. resulting not so much from the fact that the significant is “fluid”, but rather from the fact that the meaning is “liquefied” (Wittgenstein, 1953). Thirdly, as a result, a game is but a game grammar, making of it the very “form of life”.

Fourthly and finally, play is central to the operation of civilisation. Roger Caillois in *Man, Play and Games* (Caillois, 1961) makes the famous remark that games entail “exchange of property” among players, yet generate no new properties. Thus perceived play is “pure waste”, the escalation of “pure exchange” and a way to force “pure law”, a voluntary, separate, fictitious set of rules. The game is thus nothing but a pure perversion. The subject in the process of gamification becomes the subject of pure law and of pure transaction.

Caillois in a synthetic vision places forms of play on a continuum from *ludus* to *paidia*, the former being structured activities with explicit rules (games), where man reveals his need to establish rules and enforce compliance with them, while the latter is exemplified by unstructured and spontaneous activities (playfulness), which involve the tendency of the human body to move and make noise, “capturing”, “touching”, and “understanding things by seizing them” (Caillois, 1961).

Agon is a type of “regulated game”, the essence of which is fight, which in turn is prerequisite for competition. *Agon* houses a component of fight in conditions of an artificially created “fiction of equal opportunity”, allowing for an ideal situation for each of the players whereby each one of these players believes he or she may win the game. *Alea*, or chance, being originally a “dice game”, is the type of game where the adversary is unknown or unpredictable – “fortune” being the symbol of both “inequality” and “injustice”. In *alea* there appears a component where the player, being himself unable to predict the future, throws himself upon somebody’s mercy – as if it was taking place in a “completely deregulated” world. The player in this type of a game is seemingly passive, waiting full of hope for what good fortune will bring on him/her, or for a stroke of luck that will allow him to win, for his window of opportunity to open. In fact, the players’ activity is exhausted upon making the decision to play, the moment they enter the game.

Ilinx is the kind of play that attempts “to momentarily destroy the stability of perception and inflict a kind of voluptuous panic upon an otherwise lucid mind. In all cases, it is a question of surrendering to a kind of spasm, seizure, or shock which destroys reality” (Caillois, 1961, p. 23) by means of suspending it altogether, together with its laws. The action of the player is characterised by entering a trance, being stunned, fascinated, and accompanied by anxiety characteristic of a “feat”, trick or “excess”. Mimicry, or role-playing, is a typical example of playful activity, the prerequisite of which is assuming a temporary “suspension of the rules of reality”. Play may consist in acting or submitting to one’s fate in an imaginary milieu, role-playing an illusory character and behaving accordingly. The essence of the play is to tempor-

arily shed one's actual personality in order to feign another. *In lusio* means "beginning a game". Mimicry is "following everything that moves away" from us and "escaping from everything that is approaching to us". It is a constant threat posed by the imaginary and it conveys passing on the "infection" to others.

Granted that play is central to the operation of culture, civilisations do not simply choose a form of it and, having translated it into a game, operate according to its rules. Our civilisation is versatile enough to employ all kinds of play and promote all types of games through available media. Being terminally gamified, our civilisation is one within which various "kinds of play" actually encompass the whole "content of life". For the gamified subject there is no other stake but the game itself. Apps provide us with (much sought for) "artificial rules". Bear in mind, though, that those rules apply to the environment, which incorporates risk on a daily basis, and that it is a world of non-stop bewilderment. A gamified subject is constantly on the run, chasing the plethora of petty little things that all day lure it closer, and at the same time elude it. Then why should we marvel at the fact that the game paradigm has become so central in social sciences in explaining the very source of the social?

In his monumental *Playing Fair* (1994) and *Just Playing* (1998), Ken Binmore explains the theory of the social contract and the emergence of social structures with reference to game as a category. In the "pure game model" players strive to achieve the best possible result – given the rules of the game – and in the pursuit they adopt certain action plans called strategies. The game is in a state of equilibrium when each player's strategy is the best response to the strategy of any other player. Only such a game may bring a result known to the players. Only in such a case will players not have a reason to change the adopted game strategy. The optimal strategy, that is, one that leads to the formation of equilibrium, thus appears a rational choice for the players. The equilibrium is important for yet another, more important reason. If we decide that payoffs for the players correspond to how well they are adapted, then the process of evolution, which rewards those better adapted at the expense of less adapted players, comes to a halt when the game reaches the state of equilibrium.

I ask, therefore, whether our completely gamified societies are in a state of equilibrium. Beginning from Thomas Hobbes, through John Rawls, up until Ken Binmore, theoreticians of the state and of the social have used the "game metaphor", hoping that the game will eventually stop. The reason for this is – and this is now our fifth observation – that the game is conceived as a synonym for "justice". In our times, the game becomes, for its subject, a "game total", "game absolute", e.g. a game where the stake is not to enforce one's own rules, but the coming of "ultimate justice", i.e. the transformation of the player into a perfect player, the player constantly able to take on new challenges and adopt new strategies in all existing and all up-

coming areas of life, such as education, health, labour, reproduction, and last and perhaps least of all – something that we still call play. When the totality of life is completely gamified, society will reach a state of equilibrium and thus will arrive at ultimate justice.

For Johan Huizinga fun is a “free activity” remaining “outside ordinary life” that can intensely and utterly absorb the player (Huizinga, 1962). Gamification, in turn, is the willingness to “absorb” play conceived in such a manner through the application of art [*tekhnē*]; this willingness reveals to what extent such “prosthetics” are in some way inherent to humanity. Despite the evolutionary continuity linking the “invention of a wheel” with the “invention of a nuclear power plant” (Latour, 1999), it is only the “nuclear age” which allows the subject to complete the process of gamification, i.e. to achieve a state of total control and a state of equilibrium, i.e. a society that can finally embody the pure game model. The process of evolution, which rewards those better suited, is “stopped” or “suspended” in such a society. What does it entail? It entails that such a subject is completely connected to/with the rest of the world. A game always entails team spirit and ought to be a collective enterprise. A collective, in turn, is – as Bruno Latour rightly observed – the third political animal following the Leviathan – the vision of creating an immortal body politic and society – the creation of 19th- and 20th-century sociologists. Technologies are as a matter of fact a “preserved society” (Latour, 2005).

Time of technics/technics of time

Gamification reduces the subject to augmented reality. In fact, there has never been another reality except “augmented reality”, and there has never been another form of humanity than one immersed in technology – “prosthetic humanity”. Thinking about “pre-technological reality”, “the primary stage of naked humanity” or “man liberated from *tekhnē*”, is the result of an erroneous approach to “technics” and the “descent of man”. This is why the completely gamified subject feels at home in a world where technology has become a preserved society. The completely gamified subject is at home with technical culture because his home is technics.

It often seems that technical approaches – and, likewise, the technologies themselves – develop according to some internal schema, i.e. according to some unavoidable anthropocentric logic. According to this view of history, technics is a gradual projection of deliberate human action. Technics is an imitation and expansion of our innate intelligence. We think that in the inexorable sequence of things the machines will imitate all of the human activities that make up the cyclical process of instrumental action. First, they will imitate the functions of executive organs – the so-called effectors (such as hands or feet), later the receptors (sense organs such as the eye or ear), and finally the functioning of the organ of control (brain). Such a line

of reasoning must have been especially dear to Jürgen Habermas, when he observed that ability to envisage the fulfilment of history is embedded in the technological itself, and that man is otherwise devoid of it (Habermas, 1974). The logic of history is thus revealed as expansion of political control through the development of technical management.

According to Frankfurt philosophers from Theodor W. Adorno and Herbert Marcuse to Habermas and Axel Honneth, one cannot eliminate the power and violence of “rational calculation” without at the same time destroying technics. In this vision technics is always “a man-like doppelgänger”. Cyborgs and androids in this narrative are human-like and man-like creatures. In this vision, the birth of “the augmented reality” or, as it is sometimes referred to, “multiple reality”, follows three consecutive stages. First, the tools are invented. Then, at stage two, machines replace tools. Then, at stage three, automatic machines replace machines. Tools such as rough-hewn stones back in the past or the bicycle more recently enhance natural functions of human bodily organs. What makes machines special is that they are capable of replacing human activities. Machines do so by converting power: mills do so, and likewise propellants, clocks, and steam engines.

It is only “digital machines”, though, that succeeded in replacing human intelligence itself instead of merely facilitating motor or sensory functions of the human body. The thermostat of the past is now incorporated into machinery that independently develops new strategies for adapting the temperature inside a closed space to changing environmental conditions outside. Upon creation of this sort of intelligent adaptable system the last stage in the development of technology has been achieved. *Homo faber* can for the first time in history be fully objectified and inspect him- or herself from the outside, with regard to activities that are instrumental, autonomous and objective at the same time.

However, a very different vision of technology is present in the works of Martin Heidegger. In his etymological study Heidegger reflects at length on Aristotle’s *Physics*, that foundational book of Western philosophy. Therein, Aristotle takes “nature” to be a kind of “technics” capable of producing itself, technics capable of self-creation, and states that to this end technics, being the essence of nature itself, not only provides a metaphysical basis for conquering and mastering nature, but, furthermore, that it necessitates such a sequence of things (Heidegger, 1967). For Aristotle every art [*tekhne*] consists of bringing something into being, and looks for technical and theoretical means of producing a thing which exists in potentiality; the cause of its actualisation thus lies with the producer, not in the thing produced.

This observation makes the critique of technocratic culture utterly shallow. Here we see that technics is not only the essence of civilisation, but – more intriguingly – is “nature”. Such is the vision embedded in “natural physics”. Manufacturing and creating is one type of production, growing and “the emerging of self” is the other. Both, as we may clearly see, involve production – namely, technology. *Tekhne qua poiesis*: manipulation is not the essence of *tekhne*,

“unconcealment” is – “the emerging of self”. Its conception as instrumental reveals nothing of the essence of *technics*. As production (*poiesis*), *technics* is a “way of revealing”. Like *poiesis*, it brings into being what is not. According to Heidegger, being is historical, and the history of being is nothing but its inscription in technicity.

André Leroi-Gourhan takes this autopoietic interpretation of *tekhne* one step further. Starting from the assumption that the peoples called “illiterate” in fact only lack a certain type of writing and prefer not to refer to nature using terms that dwell on the opposition between man and other living beings, such as instinct and intelligence, being able or unable to speak, etc., Leroi-Gourhan traces the gradual development of physical abilities (or physical function) whereby the auditory system adapts to and takes on the new function of speaking, and similarly the eye and hand are involved in and adapted to the novel task of writing. With the help of the term “technical tendency”, which allows him to loosen the relationship between *tekhne* and *ethne*, the author describes the coupling of “organized organic matter” and “self-organizing inorganic matter”; from here, Leroi-Gourhan manages to trace back augmented reality to the very beginning. Aware of the fact that by assuming “the idea of the wheel” one can derive infinite technical consequences – the chariot, the potter’s wheel, reel machines, lathes, etc. – he addresses anthropogenesis and techno-genesis as mutually conditioning and reinforcing one another (Leroi-Gourhan, 1993). As a result, it is Leroi-Gourhan who initiates the discourse on *humachines* – being not so much humanoid creatures, but first and foremost creatures capable of exploring all possible connections in a body-environment-matter complex.

At this point Bernard Stiegler takes over the discourse. In his trilogy entitled *Technics and Time* we read that “technics” creates a horizon of human existence and temporality (Stiegler, 1998). According to Stiegler the technicality of man, that is, man’s innate prosthetics – the simultaneity of man and technology – was suppressed in the history of philosophy. Philosophy has never ceased to play with and to feast on the difference between *episteme* (knowledge) and *tekhne* (craft).

And yet the origin of “technics” and the origin of what we call “human” are closely linked with time, the origin of time and being in time, or rather “not-on-time” (i.e. late). Time, however, is also linked with forgetting, the process of *epimetheia*, which consists in the displacement of what was once known by the accumulation of randomly acquired new knowledge. This makes of Epimetheus – his name meaning “hindsight”, or literally “afterthinker” – a founding figure of the discourse (Stiegler, 1998). Epimetheus, our fateful “afterthinker”, a being in whom thought follows production, is the “unfortunate husband” of Pandora, who opens Pandora’s Box and thus brings misery to mankind. According to Hesiod, who twice mentions this character, Epimetheus was the one who accepted the “gift of unhappiness” (Pandora’s gift from the gods). However, in Plato’s use of this old myth as recorded in *Protagoras*, the twin Titans Epimetheus and Prometheus were entrusted with distributing traits

among the newly created animals. Epimetheus was made responsible for giving a positive trait to every living animal, but when it was time to give man a positive trait, lacking foresight, he found that there was nothing left. All the “virtues” and “powers” had already been distributed. In effect man is “ill-endowed”, “defective”, and “lacking”.

It is because of the forgetfulness (stupidity) of Epimetheus that Prometheus decides that the attribute of mankind shall be *tekhne* – the crafts and the art of fire. Seeing the weakness of man, Prometheus steals fire from the gods in a piece of wood seemingly wet on the outside. Thus fire enters the life of man not by force but through deception. Prometheus teaches people to smelt metals, cook food, cultivate land, forge armour, build houses, read, write and subjugate the forces of nature. *Prometheia* becomes synonymous with prudence and far-sightedness. *Epimetheia*, to the contrary, is synonymous with short-sightedness and negligence. Epimetheus is the one who forgets metaphysics, “forgets thought” and finally forgets forgetting; thinking a thought is made obsolete. As such, Epimetheus is not only the figure of forgetfulness – “he is himself forgotten”.

Epimetheus may thus serve as the symbol of man’s “hind-thinking” or “hind-sight”. It is only “in time” that *Animal sapiens* converts to *Homo sapiens*, i.e. the species of prematurely born beings that come into their environment with a surplus of immaturity, neoteny. Man is a being “premature” in the sense that he is born “naked” and “unarmed” and that his thinking is always done too late. Human thinking always comes “later” than the actions of his organs and his body’s movements. Prometheus formed man out of clay mixed with tears. Only man’s “soul” was “cast” in the divine fire and that was stolen from Helios, one spark from his heavenly chariot. The man created by Prometheus was weaker and lower than the Titans, his body could barely keep on his feet, and brittle bones cracked under the slightest weight. Only man’s form, which was so different from that of the other animals, was in the image of the gods. That man is a god with feet of clay, equipped only with crafts.

The act of forgetting, of course, is not exhausted by Epimetheus bearing the guilt and Prometheus deceiving the gods. Philosophy forgets the coupling of “technics” and “anthropogenesis”. From the onset, philosophy by default represses the technical dimension of humanity by taking it for granted that the qualities of man are of more sublime origins than “theft” or “mindless condemnation”. Technics is therefore on the one hand repressed from thinking, while on the other a characteristic supplementing the “constitutive lack” and “absent source”.

This denial of technics will be accompanied by man’s quest for a more fundamental time, away from engineered time; away from time marked by an hourglass, away from time measured by a mechanical or electronic clock. While sundial, analog and electronic clocks are exemplifications of the very same concept, the time they measure is not quite the same time (see Le Goff, 1980). This more fundamental time is what phenomenology has been searching

for ever since the publication in 1928 of Edmund Husserl's famous book *Vorlesungen zur Phänomenologie des inneren Zeitbewusstseins*. This would be time as "a man without a clock" lives time, a time of pure consciousness of time (Husserl, 1990). On the other hand, technics will take the blame for introducing nihilism into human life and all the evils which deprive people of their humanity, providing them with "fabricated senses" (corneal implants), artificial bodies (titanium limbs), forged bodies (transplanted heart), artificially manipulated genes (stem cells), substitute daylight (the monitors), and false social and political devices (politicians as corrupt directors of the human zoo managing our lives).

However, prostheses are not simply our tools or mere measures employed to fulfil our goals. Prostheses function as tangible and meaningful traces of the past and serve as forms of collective memory. Technics is the main carrier of memory. Referencing and deferment, and perhaps even differentiation itself, are made possible only by and through technology. The distinctive human feature is thus the ability to preserve the past in tangible and technical prostheses. Memory is always accompanied by not only the "politics of memory", but above all the "technics of memory".

Likewise, for Heidegger, the time of thinking, technics and forgetting are closely linked. Forgetting is inscribed in the existential constitution of *Dasein* as instrumentality or equipmentality, and as *calculation*. In the Western history of being, from the Presocratics, through Plato, to Descartes and Leibniz, according to the principle of reason that defines *mathesis universalis* as *calculation*, the subject has ultimately become the master and possessor of nature, and the essence of reason has become understood as *calculation*. This metaphysical turn constitutes the entrance to the technical age of philosophy. Technics – in its modern guise – brings subjectivity to fulfilment as objectivity. The modern age is essentially that of modern technics.

Generation of machines/machines of generations

We may distinguish several generations of machines based on their power source and corresponding to consecutive stages of technological revolution, and evolution of capital alike. Following Ernest Mandel's *Late Capitalism* (1975) there are three quantum leaps in the evolution of machinery under capital (see Jameson, 1991). In particular, leaps in propulsion machinery seem to be decisive for the technological revolution as a whole, respectively: (1) machine production of steam-driven motors since 1848, (2) machine production of electric and combustion motors since the 1890s, and (3) machine production of electronic and nuclear-powered apparatuses since the 1940s. It is capital that produces capitalism and henceforth the logic of capital is the logic of capitalism. This, however, is linked to the development of tools for producing capital (means of production), or machines. In a famous sentence from *The*

Poverty of Philosophy Marx asserts that “the windmill gives you society with the feudal lord; the steam mill, society with the industrial capitalist” (Marx, [1847]1963). There is continuity and parallelism between the evolution of technology – weaving workshops, thermal engines, nuclear power plants, missile guidance systems – and the evolution of capital – financial, material, intangible, and forming working capital – tangible and intangible, paid and unpaid.

Noteworthy, the “new media” have no intrinsic ability to represent. Today, the prototype machinery is neither a turbine nor a Sheeler’s crane nor factory chimneys. The meaning of this world is no longer condensed in the whole system of pipes, refined conveyors, curved shapes of trains, space shuttles and all the streamlined high-speed vehicles. All in all, a TV screen is an emblem of the present era, more so than a computer, because it is a device capable of articulating nothing whatsoever, solely projecting an image on a flat surface. “Machines” like TV serve mechanical reproduction. This generation of machines makes no demands on our ability to create symbolic representation – unlike the mimetic idolatry demonstrated by the futuristic machinery of the past, the earlier “sculptures of speed and energy”. The previous phase of mechanical evolution under capitalism took for granted our excitement over the machine itself – so clearly visible in futurism: Marinetti would praise a machine gun or a car in his poems (Marinetti, 2002). These machines were visible and spectacular symbols, sculptural nodes packed with energy, tangible and capable of embodying the early phase of modernisation.

Today, we are no longer dealing with such symbols. Thanks to mechanical reproduction our society has morphed into a society of a massive spectacle. Commodity has morphed into an image of commodity and this image alone has become the ultimate form of reification. As a result, perhaps, the reproductive machine turned out to be an incarnation of perpetual motion. It produces nothing and feeds on intangible capital. We, in turn, live in a “false daylight” of irrepressible television and our computer screens, and flow in the endless stream of information to and from across the entire globe. “False daylight” provides for a new synthesis of time and space, media and body. Subjects abandon their bodies to invest in the visionary industry of sculpting their future bodies and becoming tele-present – that is, of creating a narcissistically augmented reality. Pure pleasure, pure transaction, pure form of life, pure civilisation and pure theory of the game (the public) finally become one. Players do not have a rational reason to change adopted game strategies. So have we reached equilibrium yet?

Truth/death

A moving Jewish parable, full of passionate insight, beautifully illustrates the relationship of man with machine. Jewish families – says Reb Stein (Buber, 1988) – would build a clay statue and etch on its forehead the word *Emet*, meaning “truth”. The golem would be a servant to Jewish families and work all its life on the farm until it became defective, disobedient or overgrown. It would be then that its master would simply reach up to its face and wipe off the first letter “E” of *Emet*, thus leaving the word *Met*, meaning “death”. Then the golem would die.

Once, however, a lazy farmer allowed one golem to grow so big that he could no longer reach its forehead. Knowing, however, that golems are obedient, he ordered it to stop and pick up some rubbish. When the golem was obediently doing as commanded, the master wiped off the “E” of *Emet*, but miscalculated the monster’s size and drowned, covered by the mud that tumbled upon him. Thus “truth” bore “death”. From this it is said that “death” is embedded in “truth”. The lazy farmer is the new face of Epimetheus. Perhaps, considering Heidegger’s assertion that technics was never truly the same as the essence of technics, the reduction of technics to “pure instrument” is yet another testimony to the principle of anthropomorphisation.

Likewise, Heidegger’s assessment that technics is the field of discovery corresponding to truthfulness, which today has taken the form of the “dam on the Rhine” (that is, undividable from nature, be it a “composition”, “set”, “arrangement”, or “assembly” – *Gestell*), has never meant anything other than the proximity of “unconcealment” and “concealment”, of “foresight” and “hindsight”, or the proximity of truth and death. “[W]hen destining reigns in the mode of Enframing, it [the machines – S.W.] is the supreme danger. This danger attests itself to us in two ways. As soon as what is unconcealed no longer concerns man even as object, but does so, rather, exclusively as standing-reserve, and man in the midst of objectlessness is nothing but the orderer of the standing-reserve, then he comes to the very brink of a precipitous fall; that is, he comes to the point where he himself will have to be taken as standing-reserve. Meanwhile man, precisely as the one so threatened, exalts himself to the posture of lord of the earth. In this way the impression comes to prevail that everything man encounters exists only insofar as it is his construct. This illusion gives rise in turn to one final delusion: It seems as though man everywhere and always encounters only himself” (Heidegger, 1966, p. 78).

What can save man from this threat is no *game*, but only *play*, conceived as “free activity”, standing quite consciously “outside ordinary life”, “not serious” – but at the same time *play* that can absorb the player intensely and utterly.

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