

Ethics & Gamification design

a moral framework for taking responsibility

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ABSTRACT

Gamification is recognized as a persuasive technology that can influence user behaviour. Because of this moral dimension, gamification designers need to consider incorporating ethics into their design process. A normative ethical framework consisting of utilitarian, deontological and virtue-ethical theories is proposed to serve as a basis of moral gamification design. Several ethical methodologies are examined and considered to formulate a moral gamification design methodology that allows designers to systematically uncover and address potential ethical issues in gamification design.

KEYWORDS

Gamification - Motivation - Persuasive technology – Technological Mediation- Ethics



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Introduction

The momentum of games and their associated media and technology is huge. As of 2012, the global videogame market is worth 67 billion dollar, estimated to grow to 82 billion dollar by 2017 (Gaudiosi 2012). The worth and place of games in our society is not just measured by their economical value. The technological, aesthetical, social and cultural importance of the medium reaches far outside the virtual worlds presented in videogames. Movies like *Lord of the Rings* employ artificial intelligence systems inspired by videogames to digitally recreate massive armies ‘with a brain’ (Koeppel 2002, 40). Videogame characters like *Mario* have spread through pop culture and became symbols for gaming. Games are leaving their traditional (digital) platforms behind, spilling over to our pockets via digital smartphones, but also into physical space.

In various spots in the Netherlands, one can throw trash away from a moving car or bike by aiming it at basketball-like nets called ‘Blikvangers’, that are placed next to the road. In the trainstation of Utrecht Overvecht, a slide was installed as an alternative to taking the stairs. Even political debate seems to take cues from games. In one of the electoral debates of 2012, the candidates debated in game-show like format, using lights to signal their ‘position’ on the issues the ‘quizmaster’ posed (Kroon 2012). Certainly, our culture seems to be becoming more playful. Game researcher and theorist Joost Raessens referred to this stronger presence of play as the ‘ludification of culture’ (2006, 53).

As games are already everywhere in contemporary society, it seems only logical that the interaction design patterns from videogames perpetuate throughout other digital information systems. This trend is called ‘gamification’. It is an umbrella term for a wide variety of ideas, concepts, technologies and design methods. Ultimately though, it refers to using elements from games outside their traditional contexts. Therefore, gamification can be seen as a neologism for a cultural phenomenon that has existed for a long time. This is because the idea of making games out of non-game situations and activities is far from new. The examples of the ‘Blikvanger’ and trainstation-slide demonstrate this. Furthermore, it could be argued that children have always been expert gamifiers, turning mundane activities like walking into something game-like by introducing game elements. Who hasn’t played ‘don’t touch the street because it’s lava’ while walking?



The appeal of gamification is largely due to the place games and especially videogames already hold in culture and society. By incorporating ‘game’ in the term, gamification inherits the power of videogames, in both its financial and intrinsic values. There is money to be made in games and it could be argued that the same goes for gamification, because it borrows game design elements. More importantly, videogames are designed to be entertaining and motivating. Businesses see gamification as a way to use these videogame traits to both cater to the everlasting demand for entertainment and at the same time, motivate customers into consuming (Zichermann 2011, 13). At the other end of the scale, there are people like game developer Jane McGonigal, who see gamification and games as ways to encourage people to do better and solve real world problems (2011, 48). Obviously, there is some debate about the goals and usage of gamification, but there is a single underlying premise present: gamification can use the ‘fun-factor’ of game design elements to change user-behaviour.

It is very probable that users of commercial and professional software will have to deal with gamification in the near future. In 2012, it was estimated that the global gamification market will be worth 2,8 billion in 2016. (Peterson 2012). A year later, renowned technology research and advisory firm Gartner predicted that more than seventy percent of the Global 2000 organisations will have launched at least one gamified application by 2014 (Gartner 2011).

The prospect that gamification will take a prominent place in interaction design and indeed, our daily lives raises questions. Do we want technology to influence and persuade us to do stuff because of tacked-on ‘fun’? Game developer Jesse Schell asked the same question and sketched a true dystopia of gamified surveillance in his presentation for the DICE 2010 Summit. “Brushing your teeth? Well done, 10 points from your health insurance company! On time for work? 10 points from your boss! You’ve been on time the whole week? BONUS POINTS!” (2010). Gamification has an ethical dimension, as its premise is to influence people in both overt and covert ways. This is relevant to users who need to appropriate gamification, but also for gamification designers who need to consider the ways they are influencing their users and why they would want to.

In order to bring attention to the properties of gamification, this thesis will examine the phenomenon and the way it goes about influencing users. In doing so, it will become clear gamification can be considered as a *persuasive technology*. Persuasive technology is a term coined by psychologist B.J. Fogg, and refers to computing systems



designed to change people's attitudes and behaviour. It is the logical evaluation of thinking about technological artefacts that possess persuasive qualities. A famous low-tech example comes from Bruno Latour, who considered the speed bump as an object that takes over a previously exclusive human role: as the persuader that influences drivers to take the moral decision of slowing down. This marks a shift in design thinking, as technological artefacts cannot only be evaluated on their functional aspects, but also on the way they shape human behaviour. Philosopher Peter-Paul Verbeek argues that technology has a mediating role in the relation between users and their surroundings. Therefore, technologies are not just tools, but active mediators with a moral dimension that needs to be considered by those who design and use it. In this regard, there is an opportunity and a need for developers to expand upon their field by incorporating ethics in their design processes. The central question to this thesis is how gamification designers can use moral frameworks and methodologies to do this.

In order to answer this question I will start off by exploring the debate about gamification's use of 'game' and its goals by providing arguments and definitions from a marketing and game studies perspective. The first chapter will close on the gamification hypothesis that is the premise of all definitions: that gamification can influence behaviour.

Chapter two will start off by grounding the phenomenon in motivational psychology and reviewing available empirical evidence on gamification's effectiveness. This is done to validate the gamification hypothesis. Without this validation, the central question to this thesis becomes irrelevant. The ethical concerns of gamification design are only important when its premise is true. Next, I will classify gamification as a persuasive technology by reviewing Fogg's persuasive technology tools and comparing them to gamification's traits. This is done in order to make clear how persuasion in interactive systems comes about, as well as the ethical concerns that come with those methods. Finally, I will consider gamification as a potentially manipulative construct in both rhetoric and execution by evaluating designer's discourse surrounding gamification as well as the methods that gamification uses to influence.

The third chapter is concerned with the relation between ethics and technology, the moral dimension of technological artefacts, and the moral responsibility of the designer and the user. The current state of the ethical debate about gamification is also addressed by examining two ethical codes formulated by gamification evangelists Andrzej Marczewski and Gabe Zichermann. As they seem to be lacking, I will present



my own set of moral guidelines. By drawing upon utilitarian, deontological and virtue-ethical theory, I construct a normative ethical framework designers can use to evaluate the consequences, methods and motivations-for-designing their persuasive gamified system.

The last chapter, the case is made that moral principles and ethical codes are insufficient to incorporate ethics in the design process. Two ethical methodologies from the field of persuasive technology are examined. They are Daniel Berdichevsky and Erik Neuenschwander's moral persuasive design methodology and B.J. Fogg's stakeholder analysis methodology. These frameworks present important principles, but are evaluative, rather than proactive. To incorporate ethics into the design process, a practical methodology is necessary. For this, I turn to two methodologies that are both sensitive to moral values and that involve stakeholders in the design process. They are value-sensitive design and participatory design. With the help of two case studies, I argue that these methodologies show promise for use in gamification design. Finally, I present my own conceptual methodology for moral gamification design based on the normative framework from chapter three and the most relevant principles and methods of the four methodologies I discuss in chapter four. I argue that this framework can aid designers as means to systematically uncover and address ethical issues in their design, *during* the design process. Aside from the moral reasons for doing so, this also gains designers a pragmatic advantage: persuasive gamification systems that address user values and concerns are much more likely to be accepted and lauded by users from the start. Therefore, users will be more susceptible to the intended persuasion and are more likely to accept the intended behaviour.

My purpose in writing this thesis is twofold: first, I want to provide a reflection upon gamification as a persuasive technology that has a moral dimension that needs to be considered by both designers and users. However, the responsibility to design gamification systems ethically lies with the designer alone. Therefore, the second goal of this thesis is to provide a framework designers can use to incorporate ethics in their design process, resulting in moral persuasive gamification design.



1. Gamification

1.1. Defining gamification

The term gamification has not been around for long. Its first known use was in 2008, though it would be two years later that the term saw widespread adoption (Deterding et al. 2011, 9). Loyalty marketing, the practice of gaining and retaining customers through incentives, has been associated with gamification from the start. Self-proclaimed loyalty marketing expert Barry Kirk proposed in 2009 that gamification “could be the big ticket to solving pervasive challenges in the loyalty marketing arena, such as commoditized programs, the public’s growing attention scarcity and social media’s message that everything needs to be interactive and immersive” (Kirk 2009, 64). True enough, gamification seems to have a lot in common with existing concepts in loyalty marketing: collecting points and receiving rewards for them.

Gamification has also attracted the attention videogame developers and academics in the field of game studies. In the popular discourse about gamification, a debate is recognizable between gamification marketers on the one hand, and videogame developers and game researchers on the other. This debate is concerned with two topics. The first is the use of ‘game’ in gamification and the second topic is the goals of using gamification. In the next sections I will examine the arguments in this debate from both sides.

1.1.1. A marketer’s perspective

The most vocal proponents of gamification generally are the CEO’s of companies that sell tools for the implementation of gamification. The most notable of these gamification ‘leaders’, are Rajat Paharia from *Bunchball* and Gabe Zichermann from the *Gamification Corporation*. Zichermann is the most well known, having written one of the first books on the subject as well as organising ‘Gsummit’, the first big conference on the topic in 2011. Zichermann defines gamification as “using some elements of game systems in the cause of a business objective.” (Zichermann 2011). This definition shows that Zichermann believes in the persuasive power of gamification, advertising it as the ultimate loyalty marketing solution: “Gamification makes it possible for big brands and start-ups alike to engage us in meaningful and interesting ways, with



an eye on aligning our personal motivations with their business objectives.”
(Zichermann 2011).

In order to analyse Zichermann's definition, it is important to know what elements he refers to exactly. In his book *Gamification by Design* (2011), Zichermann recognizes three crucial game elements useable for gamification. They are points, badges and leaderboards, also known as the ‘PBL triad’ (Werbach 2012, 56). In essence, these three elements offer a sense of progression as well as reward. Such systems can be found in a lot of modern videogames. Points offer immediate reward for actions, badges offer milestone rewards for a combination of actions and leaderboards reward players with status compared to other players. It is important to note that he does not refer to these elements as ‘typical’ game elements, or elements that characterize games. Also, ‘fun’ does not enter into the equation at all. By recognizing these three elements as the *most* crucial elements for gamification, Zichermann severely limits the possible application of other game design patterns. Lastly, it raises the question if the ‘fun-factor’ of games is due solely to these elements.

The second objection to Zichermann's definition is his use of the phrase ‘business objective’. It is obvious Zichermann sees gamification as a means to make money, aligning customers' motivations with business objectives. Restricting gamification's uses and goals this way, he ignores non-profit applications. *Foldit* is a famous example that shows why gamification should not be exclusively concerned with profit. Created by the University of Washington's game science centre and biochemistry department, this online protein-folding puzzle game found a solution to the structure of one of the AIDS-causing viruses that had eluded scientists for years (Khatib et al. 2011, 1175). The fact that a gamified application like *Foldit* can bring a cure for AIDS just a little bit closer seems like the best argument for non-profit gamification one can make.

Zichermann's definition is simple and powerful, if used in a marketing speech. As Zichermann is in the business of selling gamified advertising, it is not strange that he defines gamification the way he does: with little regard for game ontology, possible non-profit uses and with a bias towards its effectiveness. In order to properly define gamification, it is necessary to turn to the academic side of the debate. This side provides a rather different view on ‘game elements’ as well as on the possible goals and uses of gamification.



1.1.2. The academic definition

There are two dominant academic definitions of gamification to be found, originating in two different fields: service marketing theory and game studies. Computer scientists Kai Huotari of the University of California and Juho Hamari of the Helsinki Institute for Information Technology see games and gamification as service systems that offer value through experiences. Media researcher, theorist and developer Sebastian Deterding of Hamburg University collaborated with several other technology, game and business researchers in formulating a nominal definition that makes no claims on the possible effects, consequences or goals of gamification.

1. A process of providing affordances for gameful experiences which support the customers' overall value creation (Huotari & Hamari 2012).
2. The use of game elements in non-game contexts (Deterding et al. 2011).

Huotari and Hamari's definition is based in 'service dominant logic, which shifts from the focus on tangible resources, embedded value and transactions to intangible resources, the co-creation of value and relationships. According to professors of business and marketing Stephen Vargo and Robert Lusch, this means customers create value themselves. Companies can only provide affordances for the customer to achieve certain experiences (Vargo & Lusch, 2004, 5). In contrast to Huotari and Hamari, the definition Deterding provides is a nominal one; it simply describes what the term gamification means, refraining from statements on possible effects, consequences or goals of gamification.

Huotari and Hamari's definition implies that the customer determines whether the afforded experience has actually increased the perceived value of the service. It is also emphasized that there is a need for engaging the customer in gameful *experiences*, rather than just the use of game elements. This definition is very useful in the context of loyalty marketing strategies, because it describes the target behaviour, experience and implied business result. Note that it is different from Zichermann's conceptualisation. Where Zichermann is concerned with influencing customers' behaviour, Huotari and Hamari see gamification as a way to enhance the value of service to the customer instead of the company. This is a good description of the objective of gamification from a marketing perspective. However, because their definition is grounded in service



dominant logic, they only focus on company-customer relations and services. Like Zichermann, they ignore the possibility of other use-cases, like company-employee, or teacher-student services and applications. Therefore, in the general discussion of gamification, Deterding’s nominal definition remains the most popular.

The definition of Deterding et al. is grounded in game studies. Therefore, ‘game’ is understood as rule-based play, in contrast to freeform play. Players are restricted in their activities because they operate within the rule set prepared by the designer. As Deterding et al. approach gamification from a game design perspective, their understanding of ‘elements’ in the context of their definition is markedly different from Zichermann’s. Deterding et al. refer to elements: “[...]as things that are *characteristic* to games - that are found in most games, are associated with games and found to play a significant role in gameplay” (Deterding 2011, 12). This opens up a far wider range of game elements that can be used for gamification. The authors do note that what exactly is characteristic to games is open for debate, as a variety of characteristics can be provide, most of which are not specific to games. Even so, Deterding et al. recognize five levels of game design elements that can be used for gamification (figure 1). These levels range from the interface design patterns such as the PBL triad Zichermann uses, to methods of game design and evaluation thereof. It can be regarded as a framework for the analysis of gamedesign in order of their level of abstraction, ranging from concrete manifestations of gamedesign patterns such as badges to game design methods like playtesting.

Deterding et al. define ‘non-game contexts’, simply as ‘not games’. In this context, ‘not-games’ means the use of game elements for purposes other than their ‘normal’ expected use as part of an entertainment game. This underlines the difference between gamification and advergames or serious games added to services or applications. An example of this is Fanta’s *Play Fanta* campaign, which allows visitors of Fanta’s website to play games that promote their drinks (Moye 2013). The games are accessible from the website, but are

Level	Description	Example
<i>Game interface design patterns</i>	Common, successful interaction design components and design solutions for a known problem in a context, including prototypical implementations	Badge, leaderboard, level
<i>Game design patterns and mechanics</i>	Commonly reoccurring parts of the design of a game that concern gameplay	Time constraint, limited resources, turns
<i>Game design principles and heuristics</i>	Evaluative guidelines to approach a design problem or analyze a given design solution	Enduring play, clear goals, variety of game styles
<i>Game models</i>	Conceptual models of the components of games or game experience	MDA; challenge, fantasy, curiosity; game design atoms; CEGE
<i>Game design methods</i>	Game design-specific practices and processes	Playtesting, playcentric design, value conscious game design

Figure 1: Levels of Game Design Elements as identified by Deterding et al. (2011)



separated from the user-experience of visitors – there are no game elements integrated in the design of the website.

Deterding et al. emphasises that no specific usage intentions, contexts, or medium of implementation should be defined because there is no advantage in limiting the definition this way. This perspective on gamification is much more useful for my research because it accurately defines what constitutes gamification design, void of judgement towards its possible effectiveness or intended usage. It therefore encompasses a wider range of practices and design thinking that would otherwise remain undefined, falling outside the limited practices described by Zichermann, Huotari and Hamari.

The key difference between the definitions provided by Zichermann, Huotari, Hamari and Deterding et al. is the intended usage. The former two elaborate contain clear statements on usage, while the latter one does not. In my view, some elaboration on intended usage is important because it is important for designers to know why using game elements in non-game context is good, desirable or useful. Deterding et al. do touch upon the intended use of gamification: “[...]the idea of using gamedesign elements in non-game contexts to motivate and increase user activity and retention has rapidly gained traction in interaction design and digital marketing.” (Deterding et al. 2011, 1). This is in accordance with Zichermann, Huotari and Hamari’s views in that gamification can be used to influence behaviour. Building on this observation, I propose to slightly expand upon Deterding et al.’s definition, explicitly taking the goal of gamification into account: *Gamification is the use of gamedesign elements in non-game context in order to influence user behaviour.*

I choose to compress the notion that gamedesign elements motivate and increase user activity and retention to ‘influence user behaviour’ because it emphasises behaviour can be guided or stimulated, but never determined. Users always retain a certain degree of reflection and should not be regarded as merely input-driven ‘sheep’. However, this definition arguably takes gamification into the domain of persuasion. Persuasion, or influencing others seems to be an ethical minefield. When on the receiving end of persuasive communication, by salespeople, political activists or charity solicitor for example, we may not be convinced that person has our best interests in mind. We may feel the persuader is not telling the whole truth, or that our emotions are appealed to unfairly, or even feel (unwanted) social pressure to take action. When the target of persuasion is emotionally or even cognitively vulnerable, these concerns only increase. Persuasion is not inherently unethical, but it clearly presents moral questions. Therefore,



a moral framework for gamification is necessary.

1.2. The gamification hypothesis

Gamification can be defined in several ways but every definition, including my own proposition, contains a hypothesis. From a marketing perspective, this is the idea that the engaging and motivating qualities of videogames can be harnessed in pursuit of business objectives. Academic definitions grounded in marketing theory and game studies from Huotari, Hamari and Deterding are more hesitant, with the former claiming gamification can provide affordances for certain experiences and the latter that gamification can possibly enhance fun and engagement. Based on these notions, the hypothesis contained in my own definition is that gamification can be used to influence user behaviour. In order to validate this claim, it is necessary to examine gamification as a persuasive construct, through the lens of motivational psychology. In the next chapter, I will first examine the motivational psychology behind gamification. I will then show that gamification can be regarded as a persuasive technology. Finally, I will address how persuasion can easily become manipulation and why that is relevant to moral gamification design.

2. Influencing behaviour

2.1. Motivation

Gamification's promise to bring the motivational and fun characteristics of games to other contexts is very appealing to businesses. Bringing an element of fun to otherwise boring or uninteresting jobs and tasks certainly seems ideal. It is important to examine what it is that makes games and by extension gamification, motivating and engaging. 'Fun', seems to be the simplest answer to this question. I will be exploring the psychology of fun and motivation in the context of gamification.

Historian Johan Huizinga observed that playing a game allows people to be free from reality within an easily understood rule-based system (Huizinga 1952, 8). Playing a game can provide a certain freedom, making the *experience* of this freedom the fundamental motivation to play. This also means the experience, and with it the fun, is necessarily subjective and shaped by the player. Huizinga does not mean that



experiencing a game is an *entirely* subjective phenomenon. The experience is shaped within the structured action facilitated by the rules in place. This way, designers of games can influence the experience of the player by selecting those affordances they deem necessary for the intended experience. This means that designers have to take into account the different ways pleasure and fun are experienced by players. Numerous subcategories of fun can be listed. Renowned user experience researcher and designer Nicole Lazzaro recognizes four basic kinds: hard, easy, serious and people fun (Lazzaro 2004). They relate to the feeling of conquest or accomplishment, exploring, emotional impact and the pleasure of cooperative and competitive play respectively. On the extreme end there is videogame developer John Radoff, who recognizes 43 kinds of fun, from the recognition of patterns in puzzles to spiritual enlightenment in making moral choices (Radoff 2011, 108-124). These examples show that fun is not something that is easily grasped or defined. It is important to realise that users differ greatly in the way they experience fun in games or other activities. Therefore, the job of a designer is to focus on the affordances that allow for fun and freedom within the rule-based system. In order to define these affordances, it is necessary to examine motivational psychology.

Before exploring the specific kind of motivation that drives people to play games, it is necessary to distinguish two kinds of motivation. They are intrinsic and extrinsic motivation. An extrinsically motivated action is one that is carried out to achieve a certain goal or reward, mostly in some form of monetary reward, status or good marks in school (Ryan & Deci 2000, 55). In contrast, intrinsically motivated actions are rewarding and fun by themselves. To complicate things, it has to be noted that there can be a certain amount of overlap: an activity can be intrinsically, as well as extrinsically motivated.

The most important theory for human motivation is the Self-Determination Theory (SDT), formulated by psychologists Richard Ryan and Edward Deci (2000). This theory states, based on empirical research, that intrinsic motivation is much more effective and powerful than extrinsic motivation. This goes for every activity but especially for sports and games, according to Ryan (Frederick & Ryan, 1995, 1997). Ryan is not alone in this; according to a meta-study on the subject, most psychologists agree that games are played because they are intrinsically satisfying (Malone & Lepper 1987, 232).

Ryan & Deci claim that the playing of games satisfies three basic psychological needs of people, making the motivation to play an intrinsically strong one. According to



Ryan, this theory can provide an explanation both for the choice to play and the choices that are made during play, because they are based on the same needs (Ryan et al. 2006, 346). The psychological needs they are referring to are: *autonomy*, *competence* and *relatedness*. Autonomy regulates freedom of choice, competence the need to be challenged and the satisfaction of progress. Relatedness is our desire to be connected to others, in cooperation or competition. According to Ryan & Deci, a task, job, action or activity providing affordances for these three psychological needs will be experienced as fun and engaging.

The goal in providing for these psychological needs is to allow users or players to enter an optimal state of mind. Psychologist Mihaly Csikszentmihalyi described this state as 'flow', also referred to as 'engagement' (Pink 2009). Flow theory came about when Csikszentmihalyi started to research the experiences artists have when they become so immersed in their work they will ignore the need to eat, drink or rest (Csikszentmihalyi 1990). In 'flow' state, one can become so absorbed in the activity that the medium one engages with becomes irrelevant and only the experience matters. To experience flow, certain conditions have to be met. They are:

- Involvement in a task with a clear set of goals and progress.
- The task must have clear and immediate feedback.
- There must be a balance between the perceived challenge and the perceived skills of the partaker.
- Concentration on the task at hand.
- A sense of control over actions.
- Loss of self-awareness
- Sense of the duration of time is altered. (Csikszentmihalyi 1990, 3).

According to Csikszentmihalyi, people experience a deep sense of enjoyment and reward when these conditions are met. Flow Theory is very much linked to Self-Determination Theory. The conditions for experiencing flow are similar to the psychological needs as described by Ryan & Deci. Most videogame developers and researchers consider flow to be one of the main reasons people play games (Garris et al. 2002, 452) (Murphy 2001, 5) (Chen 2010, 7). Players are constantly stimulated and motivated to keep playing through the balance of skill and challenge, providing them enjoyment.



The principles of Self-Determination and flow theory show that games can be fun because they can fulfil certain needs and conditions for people to experience fun, and motivate them to continue with the activity that provides it. Game designers can employ these theories to perfect their design. In this sense, they confirm at least part of the gamification hypothesis; games can be motivating by design. *World of Warcraft* by Blizzard Entertainment is a proper example of this. It is a role-playing game that demonstrates how powerful the motivation to play on can be when a design sticks to the principles of Self-Determination: it grants players immense freedom of choice compared to other games, provides progressive challenge by increasingly difficult quests and ample feedback and progression mechanics such as its levelling system and rewards of in-game currency and items. Furthermore, it provides all four kinds of fun described by Nicole Lazzaro: accomplishment by completing quests, exploration of the vast virtual world, emotional impact through storytelling and the social pleasure of playing with and against others. The results? *World of Warcraft* reached a peak player count of twelve million in 2010, (Curtis 2011) and the collective amount of time spent playing *World of Warcraft* amounts to nearly six million years (Hotz 2012).

The argument in favour of gamification's motivational affordances just because videogames can be motivating is unsatisfactory, as gamification and games are constructs that differ in various significant ways. Gamification focuses on feedback, progression and reward systems, where full-fledged videogames are far more complex. The use of extrinsic reward systems can even undermine intrinsic fun of activities, or even lead to addiction (Pink 2010, 45, 47). This poses a difficult problem, as it is not clear if simple extrinsic rewards can be effective motivators in the long run. There is simply not enough empirical evidence on gamification to support this claim.

Empirical evidence is hard to come by when it comes to gamification. The phenomenon is still relatively young and few effectivity studies have carried out. Of those studies, even fewer are trustworthy or even accessible to the public. Gamification solution vendors like *Bunchball* and *Badgeville* do not publish their research, only the 'amazing' results they get, usually expressed in the form of an increased percentage of user 'activity' or even more ambiguous, user 'engagement' (Bunchball 2013, 6) (Badgeville 2013). Fortunately, I have been able to find four publications that apply valid academic methodologies and quantifiable results.

The studies in question all examine a gamified system that uses the points, badges and leaderboards triad in some form or another. As the PBL triad is the most



common of gamification applications, it is a good benchmark to test with. The first is a study about the impact of the *removal* of gamification from an enterprise social network. It showed that the removal had a negative impact on user activity and contribution (Thom 2012, 1069). This implies that the use of gamification in this case had a positive effect. Another study examined the effectiveness of a gamified educational tool. This study showed that the implementation of game elements had a significant impact on the quantity of student contributions, without decreasing the quality of these contributions. The period of time in which students engaged with the tool increased significantly as well (Denny 2013, 768). Furthermore, the popular question and answer website for programmers called *stackoverflow* employs a gamified reward system that shows to influence user behaviour, if ever so slightly (Grant & Betts 2013, 68). Last but not least, Juho Hamari conducted the first study of the long-term effectiveness of gamification on a social information system. Hamari examined *sharetribe*, an international peer-to-peer trading service that focuses on smaller, local communities like town districts instead of the global audience Ebay commands. The gamified system rewards players with badges for desired behaviour like requesting and proposing trades or completing trades successfully. In the case of *Sharetribe*, Hamari shows gamification not to be as effective as the gamification hypothesis indicates. The study shows that there was a positive effect on users who regularly viewed their achieved badges, leading to an increase in usage frequency. However, Hamari concludes that the implementation of gamified elements did not lead to significant overall increases of activity, quality or social interaction within the trading service (Hamari 2013, 23).

Clearly, a larger body of empirical study to the effectiveness of gamification is needed to properly argue in favour of the gamification hypothesis. However, the empirical research that is available favours the gamification hypothesis even if the results are not as impressive as marketing oriented gamification evangelists like Zichermann purport. Based on the results of these studies though, I will accept that gamification *can* influence user behaviour by using fun as a motivator for users to keep engaging with the service or product.

2.2. Persuasion and technology

Persuasion can be defined as *an attempt to influence beliefs, attitudes, intentions, motivations or behaviours* (Gass & Seiter 2010, 33). Gamification can be used to



influence all of the above, but is focussed on influencing motivations in order to change behaviour. When a technology is used for persuasion, it can be regarded as a ‘persuasive technology’, a term coined by experimental psychologist B.J. Fogg. He defines persuasive technology as “[...] any interactive computing system designed to change people’s attitudes or behaviours” (Fogg 2003, 1). This definition is very similar to what the gamification hypothesis claims, placing gamification squarely in the realm of persuasive technology. Note that Fogg focuses specifically on persuasion rather than coercion or deception, which are two topics in their own right. Persuasive technology only attempts to influence and make about a voluntary change, never a forced one.

It is important to recognize gamification as persuasive technology for two reasons. The first is that gamification’s traits are comparable to the parameters persuasive technology. As persuasive technology is an older concept, it has been researched in more detail. When gamification is classified as a persuasive technology, developers and researchers can draw upon the insights and frameworks from this larger body of research. The second reason is that the focus can shift from usage and implementation research to normative ethical considerations. This is important, because persuasion can be used for benign purposes, like getting someone to stop unhealthy habits such as smoking, but also with more malicious intent, like in the extreme example of Nazi propaganda. When gamification is regarded as a persuasive technology, it opens the way for ethical reflection on the motivations, methods and consequences of the designer’s persuasive intent.

Fogg regards computers as tools that can be used in several ways to persuade users. The persuasive technology tools he recognizes are reduction, tunnelling, tailoring, suggestion, self-monitoring, surveillance and conditioning (Fogg 2003, 32). To properly classify gamification as a persuasive technology, I will survey the persuasive technology tools Fogg recognizes and compare them with the concepts in gamification.

Reduction is persuasion through simplification: making complex tasks simpler. Simplifying tasks increases users belief in their abilities, helping them to develop a more positive attitude towards the intended behaviour. A good example is Amazon.com’s ‘one-click’ shopping. If a customer applied for this service, one click of a mouse makes sure the items you purchase are billed to your credit card, packed up and shipped off to your address. This strategy is used in gamification as well, especially in social network applications. For example, *DNN Social* provides an integrated social network platform for business to customer communication (Narayanaswamy 2013). They reduce complex



behaviour like the sharing of knowledge and requesting help by providing social elements on the website such as discussion forums, comments and a knowledge base with frequently asked questions, updated by customer questions and answers on the forum. Game elements such as points, leaderboards and up-votes provide a way to rank comments, answers and individual expertise of users and product developers alike, making the best answers and posts easy to find. The company benefits by receiving feedback on their products and reducing customer service costs, as users can help each other out. Customers benefit because they can swiftly look up the answers to their problems, as well as connect with both other users and the developers of the product in question.

Tunnelling is a way of leading users through a sequence of events, like a tutorial, or filling out a form. This is appealing to designers because they control the user experience. To users, tunnelled content can be comforting, as the steps ahead are clear to them. This way of offering structured, predetermined lumps of content features prominently in gamification through the use of levels and other feedback and progression systems. A simple example is *LinkedIn*'s completion mechanic, that offers users separated tasks for completing their profile, visualised as a 'to-do' list (figure 2). Lumping the entire task together could make it appear more challenging. This way, users can do portions of the task whenever they want, as well as get a clear insight in their progress.

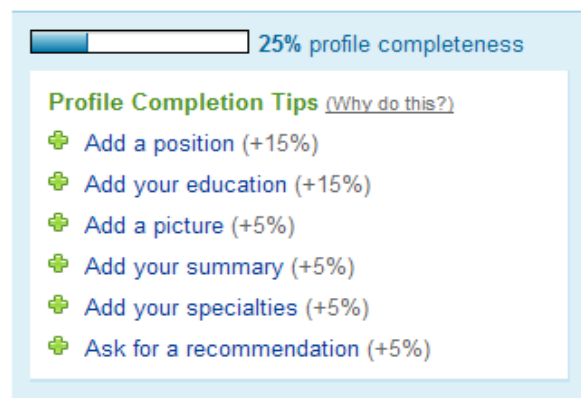


Figure 2: LinkedIn profile progression and suggested tasks (Scheer 2013).

Tailoring indicates a product that provides information relevant to individuals to change their attitudes, behaviours or both. Many e-commerce websites provide tailored information to their customers, suggestion other items they might be interested in based on information gathered in previous visits. In some gamification applications, personal rewards are used to incentivize individual users. For example, *Bunchball*'s gamification platform provides personalized messages and rewards based on the interests that users give up in their profile (Takahashi 2012).

Suggestion is a persuasive tool that builds on existing motivations and serves as a cue to relevant behaviour. Gamification employs cues to remind users to return to the



platform or perform an activity. Suggestion is usually found in applications that make explicit the kind of behaviour they intend to influence. These are usually apps that help users get in shape or live healthier. An example is *Fitocracy*, a mobile application that suggests or reminds you that it is time to work out by (Empson 2011).

Self-monitoring is a tool to give users control over the data they generate, usually tied to their physical or mental state. Heart monitors are a good example. This tool is also used in gamification. The feedback and progression systems in gamification use statistics that show users their own activities. An example is *Nike Plus*, a fitness application that can be used to set personal goals and training schemes. *Nike Plus* tracks your activities and performance while challenging users to do better (Wu 2011).

Surveillance is key to gamification. In order to identify faults and reward users, most gamification systems survey user behaviour through data analysis. Such monitoring is useful for self-surveillance, but it can also be used as hierarchical surveillance. Surveillance can have a powerful effect on people. According to social psychology observation makes people more likely to make his or her actions meet the observer's expectations (Turner 1991, 126). In a workplace environment, gamification applications can turn into hierarchical surveillance systems, as everything you do can be seen and scrutinized by your superiors. The popular customer relationship management platform *Salesforce* already offers several gamification packages that focus on performance management by giving points for user behaviour (first call resolution rate, turnover rate, average handle time and upselling) that earn virtual and material rewards (Hara 2013).

Conditioning uses the principles of operant conditioning to change behaviours. This is a psychological theory also known as behaviourism, formulated by B. F. Skinner. It is a method of positive reinforcement, providing rewards for desired behaviour, virtual or material. This is exactly what most gamification applications do, usually in order to achieve some business objective as per Zichermann's definition. There are ample examples, as every gamification application uses some form of reward system but a good one is *My Starbucks Rewards*, which grants users both virtual and material rewards. Users claim points when they pay or check in with the Starbucks-app, allowing Starbucks to track customer behaviour and reward them with virtual gold stars and badges, as well as free coffee refills and drinks when enough points are gathered (Giovannoni 2012). According to Fogg, the immediacy of the reward is crucial, something that is also a key value in gamification.



In surveying Fogg's persuasive technology tools, it becomes clear that gamification can be classified as a persuasive technology itself. Furthermore, it shows that several of the persuasive technology tools are fraught with ethical implications. Conditioning, surveillance and suggestion seem to take away autonomy from users, pressuring them to perform desired behaviour. Fogg himself notes that persuasive technology is concerned with making about a voluntary behaviour change, but these tools could be used to force behaviour as well. When the desired behaviour is morally unacceptable, the issue gets even more complicated. Additionally, the differences between a persuasive technology, traditional persuasive media and human persuaders are an issue. Persuasive technologies are more persistent than human persuaders or traditional broadcast media, they cannot be argued, debated or negotiated with and according to Fogg, do not share in moral responsibility for harmful outcomes (Fogg 2003, 213-220).

It seems persuasive technology has two sides; one can be regarded as harmless means to induce voluntary (and positive) behaviour change. The other side of persuasion is more questionable, both in methods and intent. Methods such as suggestion, surveillance and conditioning are persuasive tools that can force behaviour change, rather than induce change voluntarily. According to Fogg, issues only arise when these persuasive tools are used unethically. This seems contradictory to his focus on the intended attitude and behaviour changes of the technology. I argue that not just the methods of persuasive technology need ethical reflection, but the persuasive intent of the designers as well. It is not hard to think of unethical scenarios; using a questionable persuasive tool like conditioning in a gamification application to market and sell cigarettes to teenagers would be an example of attempting forced behaviour change to further one's own goals. In such a scenario, it can and has been argued that gamification crosses over from persuasion to manipulation. In a survey of tech stakeholders and analysts on gamification, noted media researcher danah boyd stated: "it's a modern-day form of manipulation. And like all cognitive manipulation, it can help people and it can hurt people. And we will see both" (boyd, cited in Anderson & Raine 2012). In order to establish a moral framework for persuasive gamification design it is necessary to address gamification as a potential manipulative construct in depth.



2.3. Manipulation

Manipulation is a type of social influence that leverages pressure to change perceptions or behaviour by means of covert, deceptive or even abusive tactics in pursuit of personal gain (Braiker 2004, 5-6). Therefore, manipulation is inherently different from persuasion, as manipulation implies malicious intent, influencing someone to act against his or her will. The key difference with persuasion is that persuasion involves *voluntary* behaviour change, without the use of coercion or deception. Gamification's principles and manipulation's tenets sound eerily alike. Like manipulation, gamification is concerned with changing behaviour to achieve certain goals of the designer. To determine if gamification applications can be manipulative, it is necessary to examine gamification on two key criteria. The first is the use of covert, deceptive or abusive tactics and the second is the impact on autonomy of the user by pressuring, or forcing behaviour change.

It is hard to argue that gamification is abusive, but it certainly can be covert. One of the goals of gamification designers is to offer 'flow' experiences. In this state, a user is distracted from everything but the activity that offers the experience. It is possible to think that this user could get in a state here he or she is no longer available to recognize the influence of the game elements on the decision making process. This is reminiscent of Albert Borgmann's *device paradigm*: technology that is pervasive, consistent and tends to "distract and clutter" (Borgmann 1984, 204). For Borgmann, it does not matter whether the technology in question is designed to be distracting or not. He simply sees all technology as distracting from *focal practices*; that what gives depth and integrity to our lives. Borgmann questions the affordances of technology because they remove our ability to contemplate life and specifically, that what is good for us. In the case of gamification, the pleasurable distraction it can offer can be seen as a covert tactic to the true persuasive intent of the designer, making it manipulative.

It has been argued that contemporary information systems, specifically Internet related ones are inherently manipulative. Nir Eyal, a businessman and professor of management at Stanford states about the consumer web industry: "we secretly wish every one of them would become fiendishly addicted" (Eyal 2012). This rhetoric is also covert, as the true intentions of the designer are not disclosed. Such scepticism about designers' attitude towards their users is shared amongst many in the videogame and



web design industry. Some software developers have argued that gamification is the latest step in reductionist methodology, as it supposedly treats users as children. Developer Brent Simmons states: “As software gets simpler, it gets dumbed-down — even toddlers can use iPads. Users are now on the mental level of children, and we should design accordingly. What do children like? Games.” (Simmons 2011). Simmons argues that the rhetoric of gamification disrespects users, as they are regarded as children who can be manipulated and tricked. Simmons’ argument, while cynical and possibly invalid, does present a critical observation; gamification can be regarded as a manipulative rhetorical construct, if and when its designer’s view on its users is such that they are easily targeted objects to be manipulated.

Gamification can be considered manipulative in tactics and rhetoric. But can it impact user autonomy and force behaviour change? The manipulative rhetoric of Eyal and Simmons seems to assert it can. Yet this assertion forgoes the possibility that users’ ‘literacy’ in recognizing persuasive or manipulative technology is adequate. Whilst various media researchers have argued that a greater awareness of technologically mediated persuasion and manipulation needs to be raised, (Dodig-Crnkovic & Larsson 2005, 23) (Verbeek 2006, 12) it can also be argued that a portion of users are already apt at recognizing such constructs.

Videogame developer and researcher Ian Bogost argues that users always retain a degree of autonomy and reflection. He describes a user’s interaction and negotiation with persuasive games as *procedural rhetoric*. Bogost claims designers can use processes in games persuasively “through rule-based representations and interactions rather than the spoken word, writing, images, or moving pictures” (Bogost 2007, ix). As videogames can enact processes instead of describing them, they can be more effective in using those processes for persuasion, invoking an interpretation of those processes. According to Bogost, this allows videogames to make claims about “how things work” (Bogost 2007, 29). Players in their turn are free to understand and interpret these claims. As such, the procedural rhetoric of videogames is based on silent argument, also known as Aristotle’s ‘enthymeme’ (Bogost 2007, 45). This is a form of argumentation where the listener, or in this case the player, is expected to ‘fill in the blanks’ of the argument him- or herself. Thus, while procedural rhetoric sets the stage for persuasive expression, it does not guarantee it. Bogost calls this the ‘simulation gap’: the difference between the designed structure and the subjective reality of the player.



Through Bogost's lens of procedural rhetoric, it could be argued that within persuasive gamified systems, the user can still retain a certain degree of autonomy. Designer's can provide structured procedures that attempt to guide users' thoughts and actions, but users are still free to interpret and evaluate the claims those procedures make. Ultimately, Bogost's argument is about contextual behaviour. Within the system, possible user behaviour is dictated by designed procedures, but this does not directly influence behaviour outside the use of the system.

Bogost's argument for user autonomy has some problems. Whilst maintaining a degree of autonomy outside of the persuasive system, users are still bound to the predefined rule-system of the system. From the moment the user chooses, or is obliged to use a gamified system, this rule-system structures their behaviour. As the designer has power over the choices the user can make, they can be aligned with the intentions of the designer. As such, the choices the user is presented with determines the level of autonomy the user has within the system. Furthermore, procedural rhetoric does not address the problem of covert or deceptive tactics. In procedural rhetoric, the intentions of the designer do not have to be made plain, as behaviour inside the system can be structured through procedure, and influence outside the system exerted via enthymeme. When the intentions of the designer are not disclosed, it testifies of a manipulative rhetoric, as the intention is to influence the user covertly, whilst assuming the user can indeed be influenced directly through those procedures.

The difference between attempted and achieved manipulation needs to be addressed as well. When the users literacy in perceiving non-argumentative influence is insufficient, this can result in achieved manipulation. Per contra, when users can recognize and dismiss the procedures attempting manipulation, true manipulation is not achieved but it is attempted. Lastly, when the designer does not have the intention to manipulate or deceive and only employs reason and argument, there is no question of manipulation. Gamification then, can be a manipulative construct, both in rhetoric and in execution, depending on the intentions and methods of the designer, as well as the appropriation of the user.

Establishing gamification as a potential manipulative construct makes the question of ethical design even more poignant. How can designers ensure they are sensitive to potential ethical issues? How can they ensure their gamification design is moral? In order to start answering these questions I will examine the relationship



between ethics and technology and attempt to provide a normative framework that can be used for moral design principles in the next chapter.

3. Ethics and persuasive technology

3.1. The historical relation between ethics and technology

The field of ethics, also known as moral philosophy, is a branch of philosophy that involves systematizing, defending and recommending concepts of right and wrong conducts (Fieser 2009). Concepts of right and wrong will differ between individuals. What I personally find moral or immoral may very well differ from what someone else finds moral or immoral. There are a myriad of belief- and rule-systems in the world with no clear consensus on a single one that determines what is good and what is wrong. Therefore, it is impossible to provide conclusive answers to questions like ‘is gamification morally right or wrong?’ or similar insoluble queries. The only thing ethical philosophy can do is ask questions and compare answers from different perspectives. I aim to do just this in assessing the moral qualities of gamification as a persuasive and potentially manipulative technology.

Ethics has three major areas of study: meta-, normative and applied ethics. Meta-ethics is primarily concerned with theoretical meaning and truth values of moral propositions. The focus of this field is on the nature of normative ethics, and how we understand what is right and wrong. I will not take the perspective of meta-ethics, as the purpose of this paper is to apply ethical theory practically. Therefore, only normative and applied ethics are relevant, as they deal in moral standards regulating conduct, and applying ethical theory to real-life situations respectively. Before going into normative and applied frameworks however, it is necessary to explore the relation between ethics, morality and technology.

Today, it is a common approach in technology development to develop ethical guidelines when faced with ethical dilemmas. This was not always the case, as ethics and technology have an interesting and difficult historical relation. For a long time the humanities have not acknowledged the relation between technology and ethics. Technology was regarded as a tool, incapable of possessing either moral or ethical values. From a deterministic perspective, the rapid technologizing of society was argued



to be threat to human authenticity, autonomy and existential meaning by some philosophers. (Heidegger 1954, 8) (Ellul 1980, 310).

In the 80's and 90's, The relation between man and (media)technology has been examined more thoroughly. Actor-network theory (ANT) to this day features as a prominent lens through which scholars analyse relations between social actors and technology, acknowledging objects can be part of social networks (Latour 1994). Postphenomenology, as coined by Don Ihde, unifies an understanding of experience with ANT's notion of technological mediation, arguing that man and technology should not be understood apart from each other but in their relations (Ihde 1990). This notion also found in Raymond Williams' argument against Marshall McLuhan's technological determinism; that technology does not drive development, social structures or cultural values by itself, but that it is the result of social processes (Williams 1990, 130). As technology becomes more and more pervasive, society has to move away from the instrumentalist perspective. This is not easy, as technologies are designed for specific functions. It is hard not to analyse them by examining the way they fulfil their function. According to philosopher Peter-Paul Verbeek, "the impact of technologies on our experiences and practices, moral actions and decisions, and quality of life remains mostly undiscussed" (Verbeek 2006b, 268). In the book *Moralizing Technology*, Verbeek argues that using technology has a moral dimension, as it plays a role in shaping our practices and the interpretations we form in order to make decisions (2011, 12). Therefore, it is important not to regard morality and technology as separate phenomenon.

3.2. The morality of technology

Recognizing the moral dimension of technological artefacts is an important, albeit difficult step in ethical thinking. In doing so, ethical responsibility and morality is shifted from being exclusively human. As technologies shape our practices and experiences, they take part in our ethical practice. Therefore, we can start to describe them in terms of morality, distinguishing between 'good' and 'bad' technologies and their effects. Doing so is counterintuitive, as it goes against basic assumptions in moral ethical theory. After all, it would be foolish to blame technology for immorality. The National Rifle Association of the United States popularized this line of thinking through their infamous 'Guns don't kill people; people kill people' slogan. This is why Fogg



places moral responsibility solely with human actors. It simply does not make sense to condemn the behaviour of the gun when someone is shot. The one pulling the trigger is to blame. However, it could be argued that the gun is a so-called ‘proximate’ cause, meaning it enabled the shooter in his behaviour and becoming part of the causal chain that led up to the event. The mere existence of guns and the way they are designed enabled the shooter to easily injure or kill his or her victim. Does that mean the gun gets part of the blame and responsibility? Does the designer of the gun? The same questions can be asked for persuasive technologies that influence user behaviour. Are they responsible for their user behaviour or not? In order to answer these questions, technology needs to be examined as a moral actor.

Moral responsibility for an action demands an actor with the intent to act and the freedom and autonomy to realise the intention (Verbeek 2006, 271). At first glance, technological artefacts do not seem to possess these qualities, as the ability to form intent in others and experience freedom need a consciousness. Obviously, it is a given fact that technology does not have a consciousness in the way we understand human consciousness. However, is it possible to find a degree of intentionality and autonomy in technology?

3.2.1. Intentionality & Autonomy

Intentionality is not exactly the same as intent. Rather, it refers to the ability to form intentions in others. Verbeek proposes technology has a degree of intentionality because of *technological mediation*. This concept takes Latour’s descriptive analysis of technology through ‘scripts’ and aims to employ it in a normative setting. Verbeek’s proposition is to shift from analysing technology descriptively after it has been finished to a more proactive stance, incorporating reflection on ‘how it should be’ in the design process.

Latour’s scripts are products of ‘inscriptions’ by designers. According to Latour, they are the result of designer’s anticipation of user interaction, built into the technology as prescriptions for its use (Latour 1992, 230). Latour calls this ‘delegation’, or the process of transferring responsibilities to technological artefacts. For example, the responsibility transferred to Latour’s famous speed bump example is to ensure people drive at safe speeds. As Latour sees it, actions are not the result of intentions and social structures but of people’s direct material environment. Thus, technologies are not simply



instruments for realizing a goal but a mediator between humans and reality, establishing relations between users and their environments. Verbeek argues that the concept of technological mediation is always present. Technology *always* mediates our relation to reality. Therefore, technological mediation not only pertains to material technology as Latour suggests, but also virtual persuasive technologies (2006, 4).

The problem with Latour's perspective is that technological mediation establishes relation, but it implies this relation is fixed through the inscriptions of the designers. This is quite an extreme statement, as explicitly moralized technologies such as the speed bump would not just influence, but dictate human behaviour, limiting humans' perceived freedom and free will. However, as per Bogost's procedural rhetoric, we know users do not lose all autonomy when interacting with technology.

Technological mediation is not explicitly fixed. The moral inscription of the designer can be negotiated with by the user through interpretation and appropriation. Don Ihde coined this characteristic of human-technology interaction as *multistability* (1990, 144-150). It means that the use of the artefact is not determined solely by the properties of the artefact but through in the way users deal with them. It is of vital importance to realise this, as otherwise the concept of technological mediation would be nothing more than technological determinism, ascribing the power to determine behaviour to artefacts by themselves instead of within a sociotechnical network. Technology has a certain degree of intentionality as it can form intentions in its users, but it cannot enforce or determine them.

The second condition for moral responsibility is autonomy. The case for morally autonomous technology is harder to make than that of intentionality. Rather, it is quite impossible to do so. Technology has no consciousness or free will, so it cannot be morally autonomous. However, a reverse argument can be made. Do humans have complete autonomy in moral decision-making? It does not seem this way. There have always been laws and social rule systems in place that prevent certain decisions and behaviours. Humans never had complete autonomy in decision-making as a moral actor, so technology does not need to claim it has complete autonomy for it to be a moral actor. Furthermore, once a technology is finished, it can act on its own. A speed bump does not need a human controlling it and neither does an automated gamification application. Ultimately, these arguments fail because of the undeniable fact technology does not possess reason or rationality.



Regarding intentionality and autonomy, can it be claimed that technology is a true moral actor? It cannot. While there is a degree of intentionality to be found, we cannot say technology has autonomy. Technology has a moral dimension that must not be disregarded as it can exert influence over moral decision-making. However, it is not morally responsible in the way a human moral actor is. So where does this leave the moral responsibility for the use and consequences of technological artefacts?

The designer can inscribe technology with prescriptions for its use, shaping its mediating role, and the user is free to interpret and appropriate the technology. Therefore, the moral responsibility is balanced between designer and user. I would argue that the balance of moral responsibility tips slightly towards the side of the designers, as they are the ones that aim to persuade through the system they are creating. Furthermore, the designer is the one who has the first opportunity to ethically reflect upon the design-in-progress. This calls for a shift in design methodology, as desired functionality becomes only one of two focal points in the process. The second would be an informed prediction of the technologies mediating role, combined with a moral assessment of that role. One of the ways to do this is to formulate a set of moral principles or a ‘code of ethics’.

3.3. Ethics in the gamification community

The ethical debate within the gamification community is not very mature, which is hardly surprising considering the phenomenon is relatively young. However, there has been some progress in the form of proposed codes of ethics. Two slightly different ones are available, provided by gamification evangelists Gabe Zichermann and Andrzej Marczewski (2012, 2013, see appendix 1,2). I will provide a short evaluation of both to show these codes are insufficient for ethical gamification design.

Marczewski’s code of ethics centres around three values: honesty, transparency and quality. His code of ethics focuses primarily on the quality of service provided and a ‘no harm’ principle. In the context of his code of ethics, Marczewski’s ‘no harm’ concern is possible infringement on users’ privacy. Marczewski’s code of ethics is targeted primarily towards clients of gamification systems. They are the ones that designers need to be honest to, they need to be warned about the limitations of the concept and they should be presented with the best quality of service. This code of ethics



is insufficient for gamification design, as possible consequences of the influence the system exerts are not taken into consideration. A gamification code of ethics should at the very least have a statement about the intended behaviour, making sure users are not persuaded to act immorally.

Zichermann's code of ethics is also based on three guiding principles. They are: beneficence, transparency and the sharing of knowledge. Zichermann proposes designers should "design systems that help individuals, organizations and societies achieve their true potential, acting consistently with their values and enlightened interest" (Zichermann 2012). This is a good use of the beneficence principle, but there is a catch. The problem is that not every value of individuals, organizations or societies can be accepted as a guideline. For example, not every organization has its own code of ethics. In that case, what values should designers act upon? If it is a commercial organization, should they only act so as to maximize profit? It is not hard to think of ways how acting according to that maxim could lead to unethical design. The transparency principle in Zichermann's code of ethics is about deception. He states that designers should not deceive users about the purposes and objectives of the system. This is a valid guideline, as it prevents covert manipulation by having designers disclose their intentions. Lastly, Zichermann argues that designers should share their findings and knowledge where possible. This is not something anyone could object to, but it is not really relevant to the ethical issues of persuasive gamification design. Much like Marczewski's code, Zichermann's code does not contain a statement or guideline about possible consequences of the persuasive system, which is a significant shortcoming.

The existing ethical debate about gamification leaves much room for improvement, as both proposals fail to consider the possible consequences of the persuasive system. Using normative ethical theory, I will try to provide a more comprehensive set of moral principles for ethical gamification design than Marczewski and Zichermann have.

3.4. Normative ethics and persuasive gamification

I base my set of moral principles on three factors relevant to persuasion. I argue that the moral quality of a persuasive act is dependant on the consequences of the act, methods used and the motivations of the actor. This approach considers the moral



character and goals of the persuader, the way he goes about achieving those goals and the consequences of his or her actions. Therefore, it is an approach that is sensitive to contextual circumstances. This is important, because it can be argued that even manipulative methods can be ethically, depending on the circumstances. An exaggerated example: using manipulative tactics like lying or omission of truth to stop someone from killing him or herself seems to be a morally right thing to do. It is a situation where ‘the end justifies the means’.

In order to address the three factors of moral quality, I will use three classical normative ethical theories. They are: consequentialism, deontology and virtue ethics. The reason for choosing these theories is that they both contrast and complement each other. Consequentialism, deontology and virtue-ethics offer three distinct perspectives on moral acts: the direct consequences of an act, the method of act and the impact on moral character of an act respectively. Therefore, they provide a way to analyse gamification as a concept through normative ethics in as complete a way as possible within the constraints of this paper. I will expand upon these theories and use them to evaluate gamification as a persuasive and potentially manipulative technology

3.4.1. Utilitarian perspective

Consequentialism is a class of normative ethical theories that hold the consequences of one’s actions as the basis of moral judgement about the rightness of those actions. There are several theories grouped under consequentialisms denominator, but I will focus on the most well known one: utilitarianism. It is a more hedonistic approach to consequentialism and therefore seems most appropriate when dealing with a construct like gamification which premise is to provide ‘fun’ to its users. Central to classic utilitarianism is ‘the greatest happiness principle’, as formulated by John Stuart Mill:

“[...] actions are right in proportion as they tend to promote happiness, wrong as they tend to produce the reverse of happiness. By happiness is intended pleasure, and the absence of pain; by unhappiness, pain, and the privation of pleasure.” (Mill 1863, 9-10).

The ‘greatest happiness principle’ judges actions to be morally right or wrong on the measure of happiness they bring to the people involved and humanity as a whole. Three types of actions can be distinguished that are detrimental to happiness and can therefore



be considered morally wrong. They are dangerous, harmful and risk-increasing acts (McCormick 2001, 278-279). Dangerous acts directly increases the risk of harm of the actor or someone else endangered by the actor. Harmful acts directly inflict damage on the actor or someone else. These acts can stand by themselves or arise from dangerous acts. For example, the ‘game’ of Russian roulette is a dangerous act, but becomes a harmful act when the gun fires. Risk-increasing acts make a person more likely to commit a dangerous or harmful act. Getting mildly drunk can be considered a risk-increasing act; it is not especially dangerous or harmful, but it can lead to dangerous or harmful behaviour.

Having made this distinction, it is possible to analyse gamification from the utilitarian perspective. At first glance, gamification seems like something a utilitarian would deem morally good, as it is supposed to provide its users with ‘fun’ experiences, an objective in line with the greatest happiness principle. Certainly, it is very hard to argue that interacting with a gamified system is a dangerous or harmful act. This only becomes the case when the intent of the designer is to persuade or manipulate users into performing such acts. Examples of such design are far and few but they do exist.

Early 2013, a group of German anarchists decided they where fed up with the CCTV cameras found all around Berlin. They started an online gamified platform called *Camover*, which actively motivates and encourages participants to ‘play the game’ of destroying or stealing CCTV cameras (Henkle 2013) (Camover 2013). Participants can get points for uploading videos of the deed and extra points for creativity. *Camover* can easily be regarded as a morally wrong use of gamification and persuasive technology from a utilitarian perspective. Its users commit dangerous acts that can have severe consequences, possibly leading to harmful acts. The design of *Camover* can be considered a risk-increasing act, as they persuade participants to engage in dangerous acts. First, the participants are at risk of getting arrested and thrown in jail, which would be detrimental to their happiness. Second, these CCTV cameras are not there for nothing. They survey the area for crime, at the very least aiding in capturing criminals or possibly even preventing crime. Removing those cameras could very well enable harmful, criminal acts.

In the example of *Camover*, the split responsibility between designer and user is once again made visible. The designers commit a risk-increasing act in motivating users to perform dangerous acts, but it is the responsibility of the user to make the moral decision of giving into the persuasion of the designer. From a utilitarian perspective,



even the attempt to motivate dangerous acts can be considered morally wrong, even more so when that act is carried out. Sure enough, those acts possibly give pleasure and happiness to the designers and participants of *Camover*, but this does not outweigh the possible negative consequences to others.

Camover is a lone example that does not have many equals. Most gamification applications are targeted at other, more benign behaviours such as learning, project managing, content uploading or consuming. This does not mean motivating those behaviours cannot be harmful. Designers will always have to be careful of creating an application that motivates risk-increasing or even dangerous acts. Motivating users to buy products does not seem dangerous or harmful at all, but when a system is developed with strong persuasive or manipulative qualities, compulsive behaviour might be induced. The frequency of engaging with the system becomes an important factor in that case. Obsessive or compulsive behaviour, no matter the context, can be considered a risk-increasing act as people can damage their health, financial situation or social relations. In spite of this, proportionality is key in utilitarianism. When only a small portion of users experiences negative consequences of engaging the system but the majority only experiences happiness or fun, the system could still be considered morally good.

From a utilitarian perspective, consequences are the only thing that matter. As long as a gamified system does not influence its users to perform dangerous, harmful or risk-increasing acts, it is a moral system. Even when it does, it is only considered immoral when the majority of users experience consequences detrimental to their happiness. The utilitarian framework thus proves especially useful to evaluate the outcomes of the technological mediation of persuasive technologies like gamification. The next step is to evaluate the methods, of the persuasive act. For this, deontology should prove useful.

3.4.2. Deontological perspective

Deontology takes a distinct point of view from consequentialist theories like utilitarianism. Rather than examining the consequences of actions, its moral verdict is on the qualities of the action itself. There are various formulations of deontological ethics. Two major ones determine the moral quality of an act in a slightly different way. There is moral absolutism, or the notion that some acts are *always* right or wrong, regardless of



intentions or consequences. The more popular perspective comes from Immanuel Kant, who formulated the categorical imperative to express the highest moral duty of individuals:

“Act so that you treat humanity, whether in your own person or in that of another, always as an end and never as a means only” (Kant 1987, 429).

The categorical imperative can be regarded as a variation on the age-old ‘golden rule’, that states “One should treat others as one would like others to treat oneself” (Flew 1984, 134). Therefore, empathy is a central component of deontology; there is a reciprocal, or ‘two-way’ relationship between moral actors, involving both sides equally. This means moral actors should consider their actions through empathizing with the stakeholders of those actions. How will they be affected by the act in question? Would I mind if others affected me in this way? As technology and gamification are not true moral actors they cannot ask these questions. Yet, as I have previously discussed they do possess a moral dimension. Through the theory of technological mediation, it is possible to recognize technologies such as gamification as moral mediators, inscribed with properties by their designers that allow for this mediation. Therefore, we can still use Kantian deontology as a valid ethical theory for moral reflection on gamification.

For Kant, method and motivation are intertwined. According to him, moral methods follow naturally from ‘a *good will*’, which is the only thing in the world that is good without qualification. Other seemingly ‘good’ moral acts like the pursuit of happiness, are in need of qualification. Sadists could find great happiness in inflicting or watching suffering, but that does not make it moral. This means that the motivations of gamification designers should be carefully considered. Designers would have to reflect on their motivation for creating the gamified system in question. Do they really want to provide fun or benefits to their users? Or do they want to use fun as a motivator for users to buy more products? This is a difficult question and potential moral pitfall for designers, as Nir Eyal and Brent Simmons’ manipulative rhetoric demonstrate designers certainly can think this way: “we secretly wish every one of them would become fiendishly addicted” and “Users are now on the mental level of children, and we should design accordingly”. In utilising this kind of rhetoric during design, the user is regarded as means to an end (profit), rather than an end. In doing so, a deontologist would say the



designers forsake their moral duty to humanity. This is morally unacceptable, making the product of this type of rhetoric immoral as well.

Gamification can be condemned as immoral through deontology when it is born of a manipulative rhetoric. Naturally, gamification designers do not all regard their user-base as mindless sheep, waiting to be exploited as a means to profit. Still, morally good intentions do not put designers ‘in the clear’ altogether. Kant’s other definition of the categorical imperative is as follows: “act only according to that maxim by which you can at the same time will that it should become a universal law” (Kant 1987, 422). Whilst Kant here still talks about ‘maxim’, or motivation, there is the implication that there are certain values and actions that are always right or wrong, regardless of motivation. Because of this, Kantian deontology is often supplemented by a degree of moral absolutism. A well-known example of this comes from medical ethics, which employs a number of guiding principles all practitioners should adhere to (Gillon 1994, 184). I will examine this framework and apply these principles to gamification design.

The ‘four-principle’ approach was postulated by philosophers Tom Beauchamp and James Childress (2001, 57-272). They are:

Respect for autonomy. In the medical profession, this means consultations and informed consent are in order before starting treatment of the patient. For gamification, this would mean transparency and disclosure. Are users being made aware that they are being persuaded? Do designers make their intentions clear? If not, users cannot make an informed decision to engage with the persuasive system. In that case, the persuasion can be deemed covert and therefore manipulative.

Beneficence & non-maleficence. These principles can be considered together as the former is the exact opposite of the latter. In medical ethics, beneficence is the principle of providing benefit to patients. Doctors would have to self-evaluate if they are capable enough to offer the benefits they profess, and whether the proposed treatment is truly beneficial to the patient. Respect for autonomy is in play here as well. What might benefit one patient might harm the other, both medically and psychologically. Therefore, patients should be well informed to make their own decisions. For persuasive technologies such as gamification, this means designers should evaluate if the intended behaviour of the persuasion is truly beneficial to the user, as well as considering if they can truly provide such benefit to the user.

Non-maleficence is a simple ‘no harm’ principle; meaning one should cause no harm. However, a balance between beneficence and non-maleficence should be



considered because the net benefit is what counts, much like utilitarianism's proportionality principle. A medical example of this is radiation- and chemotherapy used to treat cancer. These therapies have a significant impact on overall health, yet ultimately are moral because the benefits outweigh the disadvantages. Applying this to persuasive technologies like gamification, designers of such technologies should consider if the intended persuasion may harm the users and/or those affected by its use in any way. Additionally, any harm that may come from the intended persuasion should be considered and balanced with the benefits the same intended persuasion provides users. In the context of gamification, 'harm' would not be physical harm, but harm to 'natural rights' such as privacy, possession, safety and more.

Justice. The fourth and last principle in this framework of medical ethics can be considered to be a synonym for 'fairness', or the moral obligation to treat people equally. In medical care, this would refer to the just and equal allocation of resources and equal treatment. Moral reflection on this principle in the context of gamification would consider if the persuasive system is fair, in the sense that it treats users in identical circumstances equally.

Using deontological ethics, the moral quality of the persuasive act through gamification can be determined. First and foremost, the persuasive act should be considered in light of the categorical imperative, determining if the persuasion is employed to help people (as an end), or as a way to use them as a means to and. Second, moral absolutism can be employed by using certain moral principles that could be considered 'Kantian universal laws'. To this end, the moral principles from the four-principle framework can be used to evaluate the moral quality of the persuasive methods used.

The last remaining step is to evaluate the designers' intended persuasion and motivations. To do this, both the moral dimension of the technological construct, as well as the motivation and moral character of both its designers and its users needs to be examined. For this, I turn to virtue-ethics.

3.4.3. Virtue-ethical perspective

One of the oldest set of theories in normative ethics is virtue-ethics, used to designate the ethical theories of the Greek philosophers of old like Aristotle and Socrates. It is distinct from other normative ethics as it pertains to the motivations and



moral character of the actor, instead of the outside rules or consequences. In a sense, it is more concerned with ‘being’, instead of ‘doing’. According to moral philosopher Rosalind Hursthouse:

“ ‘Virtue ethics’ is a term of art, initially introduced to distinguish an approach in normative ethics which emphasizes the virtues, or moral character in contrast to an approach which emphasizes duties or rules (deontology) or one which emphasizes the consequence of actions (utilitarianism)” (Hursthouse 1999, 1).

A central concept in virtue-ethics is Aristotle’s *eudaimonia*, which is a state of wellbeing. It can be achieved through the *pursuit of happiness, status and knowledge of our surroundings* (Aristotle 1941, 928-935). The first and last criteria are self-explanatory, but note that *status* in Aristotle’s eudaimonist framework refers to acknowledgement for excellence. It means one has to further one’s skills, striving for excellence. Furthermore, balancing primal desires like lust and aggression with intellectual reason results in ‘virtues’ that lead to eudaimonia. Repeatedly engaging in immoral actions erodes one’s virtue and enforces vice, distancing the actor from the goal of eudaimonia. According to Aristotle’s, ethics is a practice guided by wisdom and judgement, oriented towards achieving virtue and being a ‘good human being’. From the virtue-ethical perspective, the moral quality of a gamification system would be determined by both the nature of the behaviours the system reinforces and the impact on moral character of the actor.

There are plenty of gamification examples that focus primarily on the three most important values for eudaimonia. First of all, most gamification systems are intended to make human-computer interaction more appealing and fun, which is in line with the pursuit of happiness. Take the *EpicWin* application for example, a to-do list for chores. Rather than just providing a way to make a boring list of tedious jobs, the application transforms housework into ‘epic quests’, complete with fancy graphics and a progressive storytelling mechanic (Lopez 2011). The ability to create your own avatar and own tasks turns your chores into a fun game. If the motivation of the designers is to aid in the pursuit of happiness with their product, there is no real moral question for virtue-ethics.

Second, most social gamified systems usually incorporate a reputation or status system that allows users to attain status compared to their peers. This seems to be in accordance with Aristotle’s eudaimonia, but there is one condition. The status system



has to be meaningful and linked to real progress and skills. Otherwise, it would not really reflect your progression towards excellence. Getting points for Facebook likes, like in the gamified loyalty program *Samsung Nation* (2013), does not really reflect any progress of any skill at all.

Last but not least, gamified educational applications are exclusively focussed on helping users gain more knowledge about our surroundings. A popular non-profit example is *Duolingo*, a gamified online education application that offers courses in Spanish, French, German, Portugese, Italian and English. In comparison to other online language courses, the user retention of *Duolingo* is much higher, so it seems to help students push on (Reinhardt 2013).

Virtue-ethics is not primarily concerned with ‘doing the right thing’. One’s own moral character is of the utmost importance, and moral agents should always aim to improve their virtuous characteristics. In making moral decisions, like designing a gamification system, one should therefore aim to be as informed as possible to make them. According to Aristotle: “the agent must be in a certain condition when he does them; in the first place he must have knowledge, secondly he must choose the acts, and choose them for their own sakes, and thirdly his action must proceed from a firm and unchangeable character.” (Aristotle 1941, 1134). In this line of thought, the virtue-ethicist would argue that the designer has an obligation to research the way their design can affect users. They would need to make the ‘right’ choices in their design based on this research, making sure they are in line with the virtuous pursuit of wellbeing of both themselves and their users. In doing so, designers can make sure the moral dimension of their creation and persuasion is not immoral and thus, neither the designers’ nor the users’ virtues are eroded. Put simply, when gamification is applied to knowingly aid users in one or more of the three eudaimonic values, it can be viewed as a morally good construct, because the motivation of the designers is to help users to attain wellbeing.

Even when gamification systems are designed with the pursuit of eudaimonia in mind, there is one trait that presents possible issues. Gamification looks to reinforce repeat-behaviour. When this is done by means of force it becomes a virtue-ethical problem no matter the moral quality of the desired behaviour. Persuasive technology tools such as surveillance and conditioning are especially problematic, because they both diminish autonomy and personal agency.

Surveillance hinders the pursuit of eudaimonia because the user conforms to the will of the surveyor. In doing so, the autonomy and personal agency to pursue



eudaimonia are diminished. Conditioning is problematic because this persuasive technology tool can lead to addiction. According to psychiatrists, addictive behaviour occurs when an activity or substance is immediately rewarding (Hyman et al. 2006, 567). This is exactly how gamification uses conditioning – by providing immediate rewards for desired behaviours with the help of videogame elements. Studies on gamification addiction are non-existent, but videogames have been shown to possess addictive qualities. Videogame addicts show the same kind of dependency and cognitive patterns as drug addicts (Griffiths & Meredith 2009, 250). Videogame addicts crave the rewards and status they get every time they play. Psychologist Richard Wood likens the feedback loop of gameplay-reward-motivation (to play on) with gambling, but without the negative consequences gambling can have. They are “gamblers who always win” (Wood 2008, 171). Now, it is impossible to argue that gamification systems have the same qualities per definition. However, as I have discussed in chapter 1, gamification applications do use fast feedback and reward loops to motivate continued engagement with the system in players. These loops are of same type of design as the addictive ones Wood refers to, though it has to be noted that empirical evidence shows gamification is significantly less ‘engaging’ than traditional videogames (see chapter 2.1.).

The moment a user becomes addicted to a feedback system like a videogame or gamification application, the path to eudaimonia becomes blocked. The reason for this is twofold. First, addictive behaviour erodes virtue, as it continually reinforces the addiction itself, diminishing the personal agency of the user to passive behaviour and unwillingness to break the addiction. The constant need for satisfaction the reward-systems in gamification can induce, means the balance between desire and reason is lost. In addition to this, compulsive behaviour itself can cause a myriad of problems in the personal sphere such as discomfort, unhappiness and emotional distress.

From a virtue-ethical perspective, gamification can be viewed as a morally wrong construct when it becomes addictive, eroding one's virtues and personal agency, thereby blocking the path to happiness and wellbeing. There are two nuances to this conclusion. First, while videogame addiction exists, it only occurs in a small portion of players. Second, the notion that addiction to gamification systems could happen is conjecture, as there are no known cases or studies of gamification addiction. The second nuance is the disregard of users in this scenario. The third and most important nuance is that the user as an ethical being cannot be disregarded.

Users share responsibility with designers in dealing with moral objects.



Videogame scholar Miguel Sicart argues in his book *The Ethics of Computer Games*, that the experience of a computer game is the experience of a moral object by an ethical subject (2009, 5). In essence, this is the same argument Ian Bogost makes with his procedural rhetoric. The player subjects him or herself to an ethical framework defined by the rule-system of the game, but retains the ability to reflect on that framework, as they themselves are moral agents in a culture outside that of the videogame world. Applying this perspective to gamification, it can be argued that engaging with a gamified system can actually train users' ethical capacity and heighten moral consciousness. Doing so would enhance, rather than erode, one's virtues by gaining a deeper understanding of the world.

If we consider one's moral consciousness and ethical reasoning as an attribute in development, this means that not every videogame or gamification system is fit for everyone. An illustration to this point is *Condom08: The Sex Profile*, a gamified application advocating the proper use of condoms to stop aids (Monterosa 2008). More than 50.000 condoms were handed out containing a QR code that gave access to the application. The application offered the possibility to measure your 'performance' by having your smartphone measure rhythm, sound level and duration of the sex act. The results could then be posted online for everyone to see. Leaving aside the problem of underage sex, it takes a mature moral consciousness to evaluate the proposition of sharing your something as intimate as your sexual 'performance' online for the world to see. The responsibility of the designer would be to make sure the system in question is targeted towards users that have a moral consciousness that is sufficiently developed to engage with that system.

Virtue-ethics learns that the highest moral good lies in the pursuit of eudaimonia, cultivating virtue and avoiding immorality and vice. When gamification applications are designed to aid users in this pursuit of eudaimonia in some way, they would be morally good according to virtue-ethics. This means designers would have to consider how their system aims to stimulate virtue and prevents vice or immorality, much like the principle of beneficence of deontology. To virtue-ethics, the greatest potential pitfall of gamification lies in its premise of reinforcing repeat-behaviour. Depending on the successfulness of this reinforcement, users could become addicted to the system. Addiction erodes ones virtue, as personal agency is lost, resulting in an imbalance between desire and reason. Therefore, designers have the responsibility to consider the use of persuasive methods such as conditioning very carefully. Neglecting this



responsibility and implementing addictive design would not only impede the pursuit of eudaimonia in users, but in the designers themselves as well.

3.5. The normative framework

Ethical reflection on gamification from consequentialist, deontological and virtue-ethical perspective learns that designers have quite a lot to consider when designing a persuasive technology like gamification. The morality of the persuasive system can be evaluated by examining the possible consequences, the methods employed, motivations of designers and impact on moral character of the stakeholders. According to the normative framework, designers would have to consider the following:

- The intended persuasion should not be risk-increasing, in the sense that it influences users to perform dangerous, harmful or risk-increasing acts.
- The gamified system should aim to provide happiness to the majority of the user-base in accordance with Kant's categorical imperative (others should be treated as an end, never as a means).
- Absolute moral principles, or 'Kantian universal laws', can be employed to evaluate the moral quality of the persuasive act. Beauchamp and Childress' 'four-principle' framework can be used to this end.
- Designers have a responsibility to consider how their gamified system is aiding users in the pursuit of eudaimonia, by cultivating virtue and avoiding immorality and vice.

This summarized set of guidelines can be useful to reflect upon gamification and other forms of persuasive design, but is it enough? I would argue it is not. Moral principles will have to be the basis of any moral design methodology, but methods to systematically uncover and address ethical issues during the design process are needed as well. In the next chapter, I will examine existing ethical methodologies. Using them, I will attempt to formulate my own conceptual moral gamification design methodology.



4. Ethical gamification design

4.1. Existing methodologies and their problems

In the previous chapters, I have addressed the necessity to ethically reflect upon gamification, primarily because of the gamification hypothesis. Persuasion and manipulation are fraught with potential moral issues, even more so when mediated by technology. Responsibility for the moral qualities of technology lie both with users and designers, yet as designers have the first opportunity to ethically reflect upon the technology they are creating, I have argued the balance is tipped slightly in their favour. This is why a moral design methodology is necessary. I will examine two relevant methodologies from the field of persuasive technology. The first is a moral design framework proposed by computer-scientists Daniel Berdichevsky and Erik Neuenschwander, and the second is a methodology for analysing the ethics of persuasive technologies by B.J. Fogg himself.

In 1999, Berdichevsky and Neuenschwander presented a moral design framework for “analysing acts of persuasion according to their motivations, methods and outcomes” (Berdichevsky & Neuenschwander 1999, 54). This is very similar to the way I have employed utilitarianism, deontology and virtue-ethics to evaluate the consequences, method and impact on moral character of an act respectively. Berdichevsky and Neuenschwander outline several moral principles designers can employ to ethically design their persuasive constructs (see appendix 3). The first and most important three principles simply state that the intended outcome and motivation for creating the technology should not be ‘unethical’, as well as that designers bear full responsibility for all reasonably predictable outcomes. Furthermore, creators of persuasive technologies should always carefully consider possible privacy issues, refrain from deception. Lastly, Berdichevsky and Neuenschwander propose a ‘golden rule’: “[designers should] never seek to persuade anyone of something they themselves would not consent to be persuaded of.” (Berdichevsky & Neuenschwander 1999, 58).

There are several problems with the framework Berdichevsky and Neuenschwander propose. First, the authors present double and overlapping statements on privacy, deception and responsibility, making the framework bloated. Secondly, Berdichevsky and Neuenschwander do not specify what ‘unethical’ intended outcomes and motivations are. In the previous chapter, I pointed out that ethical values might



differ from person to person. To state that the consequences of a persuasive technology, or the motivations for creating that technology merely should not be considered ‘unethical’ is too ambiguous to be a useful guideline. Furthermore, I disagree with Berdichevsky and Neuenschwander that designers should take *full* responsibility. As I have argued before, the user is a morally aware ethical being, and shares responsibility by appropriating the persuasive technology they deal with. The biggest problem of Berdichevsky and Neuenschwander’s framework is that it only consists of moral principles, when they profess their framework is one of moral *design*. I would argue it is a moral framework of *guidelines* only. Such guidelines or moral principles are useful and a necessary underpinning of ethical design, but as I stated at the start of this chapter, a more concrete practical methodology is both necessary and beneficial.

What can we take away from Berdichevsky and Neuenschwander’s framework? First, their notion of the designers’ responsibility to examine and evaluate reasonably predictable outcomes of the persuasive technology they are designing. Doing so would signal ethical issues early. Berdichevsky and Neuenschwander do not present a method to do this, but such a method will be needed in the methodological framework. Second, their ‘golden rule’ is of use: “[designers should] never seek to persuade anyone of something they themselves would not consent to be persuaded of.” (Berdichevsky & Neuenschwander 1999, 58). This is in accordance with the Kantian universal law principle and provides a guideline for designers when reflecting upon possible infringement of moral values such as privacy and respect for autonomy.

The second methodology for ethical evaluation of persuasive technology comes from B.J. Fogg himself. In his book *Persuasive Technology*, Fogg proposes a ‘stakeholder analysis’ methodology for analysing the ethics of persuasive technology design. Designers should list relevant stakeholders (e.g. users, designers, clients), as well as what the stakeholders have to gain or lose, such as time, money, reputation, power, control and more. Fogg leaves the ‘gain-and-loss’ values under consideration up to the designers, as he argues they can vary and are personally determined. Gains and losses should then be contrasted to each other to determine if there are inequities amongst stakeholders. While this description of Fogg’s method seems like overly summarized, that really is all there is to it. Because of this, I have some objections to Fogg’s stakeholder analysis approach.

The first is the oversimplification. Measuring the moral quality of a persuasive system by contrasting gains and losses of stakeholders hardly seems sufficient determine



whether a system can be considered morally good. Moreover, Fogg has not defined *any* parameters for moral values under consideration. This means these values do not have to be accordance with widely accepted principles from normative ethics, but can be values from an individual, organization or society. As I stated before in my analysis of Zichermann's code of ethics in chapter 3, this is potentially problematic as values of that kind cannot be considered universal. My final objection to Fogg's framework is that it is an *evaluative* methodology (Fogg 2003, 233). For Fogg, ethics seemingly come into play until after a persuasive technology product is deployed, where I argue that ethical reflection should be integrated into the design process.

Fogg proposes an interesting methodology, but is lacking in his approach. His concern for inequity is important, but it should not be the only concern. A more extensive framework of moral values is necessary. An expanded stakeholder analysis methodology can be very useful to signal and address ethical issues and moral values impacted. However, it is necessary to do this during the design process, rather than after.

The frameworks provided by Berdichevsky, Neuenschwander and Fogg are useful for providing moral guidance and evaluation respectively. However, they remain unsuited for an ethical design methodology as they are. I maintain that a methodology is needed that takes ethical concerns into account systematically during the design process. This does not mean these frameworks do not have their uses. The moral principles Berdichevsky and Neuenschwander propose can serve as a basic guide for designers when combined with a normative framework. Furthermore, their notion of designer's responsibility to examine predictable outcomes can be of use when it is supplied with a method. Fogg's stakeholder analysis approach can be of use to systematically assess ethical issues and values impacted, but it is necessary to do this during design, rather than after. Additionally, it needs a more extensive framework of moral values.

4.2. Involving stakeholders

Several of the principles in the normative ethical framework pose questions that are hard to answer, such as 'how does the system benefit users?' or 'how can I predict possible outcomes of the system?'. Designers need a methodology that addresses such questions. Involving stakeholders can be a beneficial tool for ethical reflection upon persuasive systems. Listing stakeholders and values relevant to them will aid in making



an informed prediction of the outcomes of a persuasive system. Therefore, I will examine two methodological design frameworks from the field of computer-science that pay close attention to ethical concerns with a focus on involving stakeholders. These methodologies are not normally associated with persuasive technology design or gamification. They are: *value-sensitive design* (Friedman et al. 2006) and *participatory design* (Muller 2003). The former is concerned with stakeholder analysis and human values such as privacy and autonomy, while the latter aims to engage stakeholders as equal participants throughout the design process.

4.2.1. Value sensitive design

Value-sensitive design (VSD) is “is a theoretically grounded approach to the design of technology that accounts for human values in a principled and comprehensive manner throughout the design process” (Friedman et al. 2006). In this definition, ‘human values’ refer to values of moral import, such as fairness, autonomy, privacy and human welfare. VSD employs a so-called ‘tripartite’ methodology, consisting of conceptual, empirical, and technical investigations. These investigations are part of the design process itself. Thus, VSD is an iterative methodology, as results of the investigations can lead to new iterations of the product.

VSD also has an interactional perspective, as it acknowledges that people and social systems affect technological development as well as that technology can shape behaviour. This is useful for the development of persuasive technologies, as it does not just consider users (stakeholders), but everyone that is possibly affected by the technology (indirect stakeholders). According to Friedman et al., VSD’s tripartite methodology means that due consideration is given to the theoretical underpinnings of stakeholder values, technological or functional analysis of the way the system supports or undermines those values, as well as empirical investigation that explores how stakeholders react to the system and understand the moral values and their implications. (Friedman et al. 2006, 352-353). This comprehensive approach is beneficial to moral persuasive gamification design because it shifts attention from the question of potential harm done to moral values to the question why a design might be considered harmful or beneficial. As the tripartite methodology is employed *during* design, rather than afterwards, it makes sure value conflicts and ethical problems are exposed before the system is deployed.



VSD's conceptual investigation starts by identifying possible direct and indirect stakeholders, as well as moral values relevant to them and the system-in-design. In contrast to Fogg's methodology, indirect stakeholders are as important as direct stakeholders for VSD. Rather than focussing on the stakeholders that have the most to gain or lose, Friedman et al. propose to give priority to both direct stakeholders, as well as indirect stakeholders that are the most strongly affected. This method of stakeholder analysis gives greater attention to possible consequences of intended behaviour, which is why it should be favoured over Fogg's approach.

Friedman et al. provide a list of key moral values often implicated in technological design, but emphasise this should only be the start of the conceptual investigation (2003, 364-365). According to them, designers should take it upon themselves to investigate key values in philosophical, psychological, legal and other literature. For each specific case, relevant values can be different, but in the context of gamification design, the moral principles I provided in the previous section should function as a decent kick-off to the investigation. With stakeholders and relevant moral values and principles listed, a 'value scenario' can be formulated (Nathan et al. 2008, 5). A value scenario is a story about stakeholders' interactions with the technology in-design. They can be used to envision both negative and positive use cases. Nathan et al. propose to not only focus on immediate concerns, but also make an attempt to envision long-term effects through these scenarios.

According to Friedman et al., when both the stakeholders and relevant moral values are clear and value-scenarios are conceptualised and considered, it is often of use to turn to empirical investigation as well. Such investigations are useful to contextualise the technology and evaluate its success. Potentially, the whole range of quantitative and qualitative methods employed in social science is applicable here, such as surveys, observations and interviews. By involving stakeholders in this way, both intended and possible unintended outcomes can be recognized and evaluated. Depending on the results, the technology in question might be iterated upon to solve possible issues.

The last method of investigation Friedman et al. propose is the technical investigation. This method relies upon the relevant moral values considered in the conceptual investigation. Technological investigation also relies on empirical methodology, but is only concerned with the way technological properties and their underlying mechanisms support or hinder relevant moral values, instead of how people



experience the technology. The focus in such investigations is to assess the activities and values made possible, as well as hindered by the constraints of the design guided by the results of the conceptual investigation.

I was able to find a case study of VSD methodology used for the design of a persuasive system in which Friedman himself participated. A groupware (collaborative software) system called CodeCOOP was developed with the intention to promote knowledge-sharing behaviour in a workplace (Gavin et al. 2007, 281). Using the tripartite methodology of VSD, they signalled ethical issues early. The conceptual investigation taught the team that privacy is by far the largest concern for stakeholders of groupware systems used in a work environment. Therefore, they queried their stakeholders about privacy in the empirical investigation. Indeed, a large part of the stakeholders involved was concerned with privacy. For example, they would feel that their privacy was compromised if the system logged their search queries (Gavin et al. 2007, 285). Based on the result of their conceptual and empirical investigation, the team could make an informed decision about the technical features they should implement. After a 40-week period, Friedman and colleagues evaluated by means of a series of interviews and a survey asking how well privacy issues were handled. Zero percent of the participants gave the answer “not very well” (Gavin et al. 2007, 288). Friedman and colleagues state in their conclusion that the integration of VSD into the design process went seamlessly. They were afraid that VSD methodology would be too slow and cumbersome for an industry context, but this was not the case. This case study demonstrates that VSD is a viable and promising methodology for addressing ethical issues during the design process of persuasive systems.

The comprehensive methodology proposed by Friedman et al. provides two major benefits over Berdichevsky, Neuenschwander and Fogg’s frameworks. First, it employs thorough investigation in both motivation, methods and impact on moral character through the tripartite methodology, involving stakeholders early in order to iteratively improve upon the design. Second, VSD’s conceptual investigation provides a way for designers to reasonably predict the outcomes of persuasive technologies, which is something Berdichevsky, Neuenschwander and Fogg fail to do. Third and last, the case study demonstrates that VSD can be integrated in the design process of persuasive systems seamlessly and with encouraging results. VSD uses stakeholders to provide valuable feedback on the system-in-design and iterates accordingly. In the next section, I



will examine if stakeholders can actually be made part of the process by having them contribute to the design themselves.

4.2.2. Participatory design

Participatory design is a set of theories, practices and studies related to end-users as full participants in soft- and hardware design processes, rather than a true single methodology (Muller 2003, 168). As such, it draws upon diverse fields such as user-centric design and software engineering, but also on psychology, anthropology and sociology. The main objective of participatory design is to democratize the development of technologies, negating the traditional power relationship between designer and user. Future users are involved as participants in the design process by means of sightings, workshops, role-play and testing of prototypes (Muller 2003, 168, 171, 175, 181). According to Muller et al., the major advantages of participatory design methods are a sense of ownership amongst users, as well as benefits from participants' creativity and knowledge. I would argue that for ethical design, there is one more major advantage to the principles of participatory design. Potentially affected stakeholders help shape the technology in participatory design. As such, the persuasive intent will be at least partly shaped by the community that will use the technology. Stakeholders can have their say early, removing possible moral issues before deployment of persuasive technologies.

Unfortunately, participatory design methodology has not been used in the context in persuasive design much: as was the case with VSD, I only found a single case study. In the case study, participatory design was used to design a persuasive system with the intent of encouraging environmentally- sustainable behaviour on the campus of a liberal arts college (Miller et al. 2009, 4166). The designers gave several workshops in which the first prototypes were co-created with students. Consequently, the best design was chosen democratically and a working prototype was eventually presented in order to receive further feedback. Ultimately, this case study resulted in an excellent example of (non-traditional) gamification design: an interactive LED system was chosen to attract people to use the stairs rather than the nearby elevator. With the help of motion-sensors, students can also play 'race the elevator', resulting in an animation that celebrates their win if successful. This form of participatory design seemed to work very well as student and faculty response was positive. Furthermore, a survey showed that the large majority of stakeholders (86%) found the installation attractive, and well over a half stated they



were more likely to take the stairs because of it. Miller et al.'s conclusion was that participatory design is a valid methodology for developing persuasive technologies, but note that there is room for additional methods. They specifically suggest that scenario writing and role-playing could be of use to help stakeholders explore the ethical implications of persuasive technology (Miller et al. 2009, 4169-4170).

Further experimentation with participatory design methodology for persuasive design would be beneficial, but the methodology shows promise for persuasive technology and gamification in particular. Miller et al. themselves suggest that role-playing and scenario writing would be a very interesting addition to participatory design. Participatory design and value-sensitive design both overlap and complement each other. In the last part of this chapter, I will attempt to combine them with the moral principles from the normative framework to create a new methodology for moral gamification design

4.4. Moral gamification design framework

I have discussed several frameworks and methodologies for ethical reflection upon persuasive technology. For each one I singled out the most relevant and useful parts to gamification design. In this final section, I propose a simplified framework for moral persuasive gamification design that merges the normative framework with the most relevant parts of the discussed methodologies. The purpose of this framework is to indicate what designers can do to systematically signal and address potential ethical issues in their design.

1. Moral principles and values: In order to form the basis of the moral gamification design methodology, it is necessary to revisit moral principles. Using the insights from Berdichevsky and Neuenschwander, I will expand upon my own normative framework with their most useful principles. This results in a set of moral principles that can serve as a basis of moral gamification design methodology:

- Designers should not seek to persuade anyone of behaviour they themselves would not consent to be persuaded of.
- The intended behaviour of persuasive technology should not be dangerous,



harmful or risk-increasing to users or their surroundings.

- Persuasive technology should aim to benefit the majority of users, both in behaviour and in moral character. (i.e., it should stimulate virtue, not vice.)
- The persuasive technology should not discriminate; it should treat users in identical circumstances equally.
- Designers should disclose their motivations and intended outcomes, thereby avoiding deception to achieve their persuasive goals.
- Designers should take the responsibility to examine and evaluate reasonably predictable outcomes of the technology they design.

To claim this is the definitive list of moral principles designers should employ is hubris; where ethics are concerned, the debate is never over. However, these principles may serve as a solid basis for moral design methodology to pre-emptively signal possible ethical issues and assess possible consequences, methods and motivations of the gamification system. In addition to these principles, research should be conducted to identify specific values that are potentially affected by the design, like privacy, anonymity or security.

2. Conceptual investigation: List both direct and indirect stakeholders potentially affected by the gamified system-in-design. Using the identified stakeholders, moral principles and values, scenarios can be written to envision positive and negative outcomes of the intended persuasion of the gamified system. The main purpose of the conceptual investigation is to reasonably predict outcomes of the gamified system, as well as determine how are moral principles and values are harmed or supported by the system.

3. Involve stakeholders: The results of the conceptual investigation can be corroborated and supplemented by empirical investigation of stakeholders' opinions and feedback through surveys, interviews and all other manner of quantitative and qualitative methodologies. Furthermore, stakeholders can be invited to collaborate in the design process. Through workshops, sightings, testing of prototypes and role-play scenarios based on the scenarios from the conceptual investigation, stakeholders can both be informed and questioned on the persuasive gamified system in question. The feedback



stakeholders provide cannot only aid functionality, but can be of special use in recognizing and addressing ethical issues with the persuasive system early.

4. Evaluate and iterate: Based on the results of the ethical inquiry, specific technical features can be selected accordingly. As this framework borrows from VSD, it is also of an iterative nature. This means that while the system is being designed, new input will come along. Thus, step four may take place several times during the design process, leading to new iterations of the system.

The proposed framework for moral gamification design combines a normative framework of moral principles with ethical design methods, enabling designers to systematically uncover and address ethical issues with their design. Gamification is a persuasive technology that needs such measures, as even with ‘good’ intentions, it can still be fraught with potential ethical missteps. In using this framework, designers can fulfil their moral responsibility to the user by incorporating ethics into their design. In doing so, they make sure moral values impacted and users are not harmed. Designers benefit equally by gaining a huge advantage for successful design: systems that address stakeholder values and concerns are much more likely to be accepted and lauded by users from the start. Therefore, they will be more susceptible to the intended persuasion and more likely to accept the intended behaviour.

In this chapter, I have argued for the use of practical design methodologies for moral gamification design. Existing methodologies in the field of persuasive technology are insufficient for this purpose, because they do not define any parameters for moral values and are only evaluative in nature. VSD and participatory design are methodologies that are careful not to harm moral values and involve stakeholders during the design process. Combined with the normative framework I formulated in chapter three, they form a comprehensive moral design framework.



Conclusion

Playing games can be a very rewarding and motivation experience. Gamification tries to take some of this ‘magic’ and apply it to contexts other than games. This is done to influence user behaviour through persuasion. Through proven psychological methods and persuasive technology tools, the user is influenced and motivated to accept the target behaviour of the gamified system. This persuasive role of gamification poses ethical questions for designers. The persuasive technology tools gamification employs can be used manipulatively and impact user values like privacy and autonomy. As users are subject to the moral framework of designers, it is important to recognize and address the moral dimension of persuasive technologies like gamification.

The field of ethics used to be exclusively concerned with human interaction. Now that technologies are directly influencing our behaviour, they cannot be regarded as functional tools anymore. They are active mediators of the relation between people and their surroundings. Therefore, a shift in design thinking is necessary. Not just the functional aspects of a technology’s design need to be considered, but its moral dimension as well. Because designers are in the position to be the first to consider ethical issues, they have a responsibility towards their users to design morally. Users on the other hand have the responsibility to realise that some technologies may affect their behaviour, so they have to interpret and appropriate the technology accordingly.

In technological development, it is a common to formulate a set of guidelines when confronted with ethical issues. In the gamification community, this is been done by two proposals for ethical codes. These codes are lacking, because they are limited in the moral values they consider. More importantly, they fail to address possible negative consequences of the gamification system-in-design. I have shown that utilitarian, deontological and virtue-ethical theories can provide a more comprehensive framework that designers can use to ethically reflect upon possible consequences, methods-used and motivations-for-creating the gamification system. Moral guidelines are a good start, but they do not provide a way to systematically uncover and address ethical issues in gamification design.

Ethical methodologies in the field of persuasive technology can be of use, but are shown to be evaluative in nature. In my view, it is better to tackle ethical issues during the design process, rather than after. Not only does this alert involved designers to their



responsibility, but it will also help in creating a more successful design. Involving stakeholders is a way to ensure users can provide feedback and input before the design is deployed. Therefore, I have considered two methodologies that pay close attention to stakeholders. Value-sensitive design and participatory design offer various ways to involve stakeholders through empirical research and involvement in the design process. Case studies for both methodologies show they are promising for persuasive technology and gamification design.

In order to formulate a workable methodology for moral gamification design, I have used the normative ethical framework presented in chapter three as a basis. Using this framework, designers can pre-emptively signal and avoid potential ethical issues with their design by adhering to its moral principles. With the help of the normative framework, designers can start investigating how their design affects users through conceptual investigation, involving stakeholders by means of empirical research and participatory design methods such as workshops, prototype-testing or role-play of the previously written use-case scenarios. Designers can iterate their design after each step in the methodology. Moral gamification design shows how designers can systematically uncover and address potential ethical issues of their gamified system, while they are designing it. Using this framework and methodology, designers fulfil their moral responsibility to the user and benefit from user input, making it more likely users will accept the intended behaviour of the system. Everybody ‘wins’.



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Appendix

1. Gabe Zichermann's code of ethics

As an accredited Gamification Designer, I pledge my best effort to act in accordance with the following principles when creating systems of engagement:

1. I will strive to design systems that help individuals, organizations and societies achieve their true potential, acting consistently with their values and enlightened interest.
2. I will not obfuscate the use of game mechanics with intent to deceive users about the purpose or objectives of the system.
3. Where practical by law and contract, I will make an effort to share what I've learned about motivating behavior with the community so that others may leverage this understanding to advance society and the state of the art

2. Andrej Marczewski's code of ethics

1. Honesty
 - a. Be honest with both clients and users.
 - b. Make clients aware that Gamification is not a magic bullet. In most cases it is a long term investment.
 - c. Do not use gamification as a way to dishonestly gather information that a user would not freely give up under other circumstances.
2. Transparency
 - a. Be open about the system; what data it collects, what it's aims are etc.
3. Quality
 - a. Provide the best service possible for every client.

3. Daniel Berdichevsky & Erik Neuenschwander's moral principles for ethical gamification design

1. The intended outcome of any persuasive technology should never be one that



would be deemed unethical if the persuasion were undertaken without the technology or if the outcome occurred independent of persuasion.

2. The motivations behind the creation of a persuasive technology should never be such that they would be deemed unethical if they led to more traditional persuasion.
3. The creators of a persuasive technology must consider, contend with, and assume responsibility for all reasonably predictable outcomes of its use.
4. The creators of a persuasive technology must ensure it regards the privacy of users with at least as much respect as they regard their own privacy.
5. Persuasive technologies that relay personal information about a user to a third party must be closely scrutinized for privacy concerns.
6. The creators of a persuasive technology should disclose their motivations, methods, and intended outcomes, except when such disclosure would significantly undermine an otherwise ethical goal.
7. The creators of persuasive technologies, and especially simulations, must hold themselves responsible for all reasonably predictable outcomes of their persuasive methods. Such reasonable prediction requires significant user testing and holistic forward thinking on the part of designers.
8. These technologies must not misinform in order to achieve their persuasive ends.
9. The creators of a persuasive technology should never seek to persuade anyone of something they themselves would not consent to be persuaded of.