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More than just a game: ethical issues in gamification

Tae Wan Kim[1] · Kevin Werbach[2]

Abstract Gamification is the use of elements and techniques from video game design in non-game contexts. Amid the rapid growth of this practice, normative questions have been under-explored. The primary goal of this article is to develop a normatively sophisticated and descriptively rich account for appropriately addressing major ethical considerations associated with gamification. The framework suggests that practitioners and designers should be precautious about, primarily, but not limited to, whether or not their use of gamification practices: (1) takes unfair advantage of workers (e.g., exploitation); (2) infringes any involved workers' or customers' autonomy (e.g., manipulation); (3) intentionally or unintentionally harms workers and other involved parties; or (4) has a negative effect on the moral character of involved parties.

Keywords Gamification · Gamification ethics · Exploitation · Manipulation · Persuasive technology

Introduction

Gamification, also known as gameful design, is the use of elements and techniques from game design in non-game contexts (Deterding et al. 2011; Werbach and Hunter 2012; Werbach 2014). The term has been in widespread use for only a few years, but already a large number of business and non-profit organizations are applying gamification to engage customers, stimulate employee performance, encourage health and wellness activity, motivate students, and achieve public policy objectives, among other applications (e.g., Deloitte 2013; Knowledge@Wharton 2011a; Plummer 2013; PWC 2012). In particular, employing mechanisms such as points, badges, challenges, and puzzles, firms seek to make workplace activities feel more game-like, and therefore drive desired employee behavior. These systems build on the tremendous popularity of video games, and the capacity of connected digital platforms to support interactivity and feedback (e.g., Connolly et al. 2012; Marchand and Hennig-Thurau 2013). Games are as old as civilization, but gamification as a widespread business technique is a phenomenon of the information society (Floridi 2010, 2014). Gamification merges the playful world of games into the serious world of business and, as we shall explore, the clash of the two spheres generates various normative tension points.

Critics have questioned the moral legitimacy of gamification on a variety of grounds (e.g., Bogost 2011a, b, 2015; Kim 2015; Rey 2012; Sicart 2015; Selinger et al. 2015). Although the critics' accounts make important progress, they are partially misplaced. The critics generally paint with too broad a brush, asserting that almost all practices of gamification are context-independently impermissible or vicious. In this article, we propose a more sophisticated and context-relative account. Furthermore, the critics' accounts typically do not consider that the largest application of gamification is as a technique firms choose from a palette to motivate employees or customers. In this article, we focus on gamification as a situated business practice in the workplace and elsewhere.

There has been less serious study of the ethical issues of gamification in business than one might expect, given that gamification is one of the fastest dispersing behavioral

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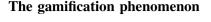[1] The Tepper School of Business, Carnegie Mellon University, Pittsburgh, PA, USA

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tools in business. We are concerned this lack of attention is a portent of what business ethicist Thomas Donaldson (2012) calls "tech-shock"—a phenomenon in which a serious moral and social failure (e.g., the financial crisis) occurs as a result of substantial lag time between the development of new technologies (e.g., securitization of debt) and the development of adequate normative frameworks to assess involved ethical issues. In the novel domain of gamification, the technological context involves the arrival of video games as a full-fledged mass medium, and the rapid adoption of networked digital application platforms. Gamification feeds on an environment where many hundreds of millions of players regularly play games on computers, consoles, phones, and tablets (Brightman 2014). Similarly, work is rapidly being transformed by mobile connectivity, cloud computing, social networking, big data, machine learning, and other technologies (Brynjolfsson and McAfee 2014), which also happen to support gamification.

In this article, we offer a normatively sophisticated and descriptively rich account for appropriately addressing major ethical considerations associated with gamification as a business practice. We hope that such an understanding serves as a precautionary foundation for the development of best practices in the field, as well as legal and public policy assessments. The framework can also help more researchers to bootstrap normative investigations on gamification.

In "The gamification phenomenon" section, we introduce the practice of gamification. In "Framing the ethical issues" section, we explore a framework for gamification ethics, with a focus on exploitation, manipulation, various harms, and character. In "Conclusion: toward a framework" section, we conclude with suggestions toward a framework for gamification ethics.

We want to address a kind of resistance to our survey-type article upfront. One might be tempted to say that this article is not philosophically theoretic enough, in part because it explores several issues. Our primary aim is to engage not only professional ethicists but also colleagues who are information and communication technology scholars and industry practitioners. For this reason, our work is admittedly practice-relevant. Indeed, game design and human–computer interaction scholars and practitioners are debating the ethical status of gamification (e.g., Deterding 2014; Sicart 2015), and ethics is a popular theme in important gamification-related academic conferences. However, these communities tend to lack the tools for normative analysis. The ethics and information technology community can, thus, offer guidance to enhance the norms of the field.[1]

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[1] Still, one might say that this article does not provide substantive philosophical knowledge. It is beyond the capacity of a single article

The gamification phenomenon

Gamification is a growing practice in business, education, the public sector, and other fields (e.g., Greenwald 2014; Burke 2014; Zichermann and Linder 2013). Gameful systems can draw on both design patterns from games and the strategies that game designers employ to create engaging experiences. A typical example is the system rolled out by LiveOps, a virtual call center operator that uses a network of 20,000 independent agents who answer customer service calls from their homes (Werbach and Hunter 2012). LiveOps makes its e-training system video game-like, by, among others, assigning these agents digital points and badges, instead of financial incentives, for completing modules in the online training system, and awards further points for performance on customer calls. LiveOps seeks to promote friendly competition by displaying these points on online leaderboards visible to all agents, and by recognizing top performers with badges. (A badge in gamification is a visual token of a particular achievement, typically displayed on a user's profile page.) The company's software vendor reports that implementation of the program substantially reduced the time to "onboard" a new agent, produced superior agent performance, and increased customer satisfaction (Bunchball 2013).

The case above illustrates how elements from games (such as points, badges, and competition) can be incorporated into a business function (training). Other examples of gamification are incorporated directly into the production activities of firms. Consider Microsoft's Language Quality Game:

> Bugs and other errors are inevitable for such complex software systems [Microsoft Windows and Office]. The testing group is responsible for ferreting them out. … Automated systems aren't sufficient, and the only way to ensure quality is for a vast number of eyeballs to review every feature, every usage case, and every dialog box in every language. It's not just the scale of the problem: Rigorously testing software is, much of the time, mind-numbingly boring. … Smith's group pioneered the concept of software-quality games that turned the testing process into an engaging, enjoyable experience for thousands of Microsoft employees. … All told, 45,000 participants reviewed over half a million Windows 7 dialog boxes

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Footnote 1 continued

to provide a full-fledged analysis of several issues. Our exploration can be understood as the beginning of a larger, collaborative, intellectual examination of ethical issues in gamification. To use Rawls's (1971) concept, this article provides considered moral judgments about gamification, suggests potentially relevant moral concepts and principles, and calls for a larger scale "reflective equilibrium" (see also DePaul 1993; McMahan 2004).

and logged 6700 bug reports, resulting in hundreds of significant fixes. Not only did they do it above and beyond their work responsibilities, but a large number of them described the process as enjoyable and even addicting (Werbach and Hunter 2012: 17–8).

The result of Microsoft's Language Quality Game was a dramatic success. Introducing gameful elements can effectively motivate employees to perform specific behaviors that employers want their workers to perform, while the gameful elements improve workplace morale and excitement (Hamari et al. 2014). That is, "[g]ames can cause people to do amazing things, purely for the sake of fun" (Edery and Mollick 2009: 155).

Gamification as a business technique has deep roots (Mollick and Werbach 2015). Sociologists have long noted the prevalence of casual gameplay at work, at least since the seminal studies by Roy (1959) of spontaneous games among factory workers. The military and private companies use "serious games" to simulate scenarios for training and other purposes (Aldrich 2009). While many experiments over the years applied the techniques that engage game players in other motivational contexts, they were haphazard and unconnected until recently (see Werbach and Hunter 2012 for reviews). Around 2009, commentators began to articulate how the principles driving the growth of the video game industry could be relevant to serious business challenges (Edery and Mollick 2009; Reeves and Read 2009). "Gamification" emerged as the primary term for this phenomenon around 2010. Since that time, organizations in virtually every industry have begun to employ gamified approaches. Gamification is applied in customer-facing scenarios such as marketing and sales; within firms to motivate employees; and for social impact through behavior change and crowdsourcing (Werbach and Hunter 2012). With growing adoption, there has been a rapid rise in both popular and scholarly accounts of this new practice (Deterding et al. 2011a, b; Silverman 2011; Wingfield 2012; Walz and Deterding 2015; Fuchs et al. 2014).

We believe the business practice of gamification raises important ethical issues for two interesting primary reasons that prior literature does not appropriately capture: the overlay of virtual and real-world norms, and the tension between organizational and individual interests. Both will be important later in developing our framework for ethical issues in gamification.

Virtual and real-world norms

First, gamification merges the real world of work into the virtual game world of play. Unlike the employee-generated games studied by Roy (1959), gamification is something that happens "on the clock" as part of the job. At the same

time, gamification maintains the context of the physical environment during the game-like activity. When doctors participate in a surgery simulation game, they know they are not in a real operating room. By contrast, call-center agents accruing gamified rewards never step away from their live jobs. In the case of gamification, actions in the physical spaces of work or consumer relationships are simultaneously actions in the virtual sphere of the game. To use Kücklich's (2005) term, gamification is a good example of "play-bor"—a state where the meanings of labor and gaming merge into a single background social situation.

Relatedly, gameful experiences overlay the norms of two social contexts. As the Dutch phenomenologist Huizinga (1949) observes, games create a "magic circle" whose rules supersede the norms of reality during play. A player of PacMan is not labeled a cannibal for eating the ghosts, nor is a baseball player arrested for stealing second base. Conversely, a player who engages in griefing (maliciously disrupting the gameplay experience of others) may be acting inconsistently with the norms governing the game context yet not believe he is touching on any social norms outside it (Dibbell 1993). Although the concept of independent social spheres or context-relative meanings of social norms is well established (Anderson 1993; Walzer 1983), the boundary of the magic circle is not always clear-cut; the "real" and the "virtual" cannot always be easily separated (Consalvo 2009; Taylor 2006). Notably, gamification obfuscates the boundary between the two spheres. A runner using Nike+ (a gameful system that tracks a runner's speed and distance) is subject to the norms of both the physical world and a gameful virtual contest at the same time. A student earning virtual badges for educational achievements is competing simultaneously in the course and the course game. This complicates any simple ethical analysis. Any adequate normative account of gamification, thus, must evaluate activities understanding how the game frame and the non-game frame interact with each other. What is legitimate in one may be problematic in the other (Dewinter et al. 2014).

For instance, in a gamified labor system, workers create a real change—for instance, enhancing productivity—but for their labor the workers may receive only virtual rewards such as digital points and badges, instead of real rewards like money. In financial terms, the workers receive nothing for their additional labor, while the employer gets all the incremental profits. From the virtual perspective, the workers merely play a game, so they only seek and are entitled to virtual rewards reflecting success in the game. These two perspectives can create a serious normative tension (see "Exploitation" section). In a game, deception may be an essential part of the play. Poker, for example, depends on players' ability to bluff. Players of such games

can legitimately consent to be manipulated for fun. This norm for the virtual world, however, does not seem to be consistently held in the real world. For instance, it is unclear whether or not people can legitimately consent to be manipulated or deceived for fun in the sphere of labor and employment (see "Manipulation" section). In a game, leaderboards—visual rankings of players' performance—are sometimes essential motivational elements, and are not typically interpreted as insulting or offensive to players. However, this technique, when transmitted to the sphere of labor and employment, can go astray. In some kinds of workplaces, attaching numerical scores to workers' productivity and publicly disclosing them can be interpreted as an act that expresses inappropriate attitudes such as humiliation, insult, or offense. The norms of the virtual world, when transmitted to the real world, can also incur physical harm to involved parties, whether intentional or unintentional (see "Harms" section). Players' desire for success in a game and game designers' desire to motivate players in game situations are usually not themselves morally problematic. Games can embody authentic moral values (Flanagan and Nissenbaum 2014). In some cases of gamification, however, there is no bright line between virtual experience and real-world behavior. As we shall discuss later, gamification in some contexts (e.g., wartime) can have a negative impact upon the character of involved parties and motivate a socially unacceptable degree of moral indifference to widely accepted fundamental human values such as the sanctity of life (see "Character" section).

We do not believe that there is a simple, universal, and context-independent principle about how to reconcile the tension points between the norms of the real world and those of the virtual world. It is not true that norms for the virtual world can never be used for the real world or vice versa. Even when a certain norm should not be applied to the real world in a certain context, it does not follow that it should not be transmitted to all other real-world situations. In this article, we develop a more context-relative approach that acknowledges the complicated tension points generated by the distinct sets of norms and values of the two worlds.

Organizational and individual interests

The second reason that gamification raises novel ethical issues is that gamification programs serve the interests of organizations by stimulating the motivations of individuals. We call the company that develops or manages the gamified system the **provider**. This could be the employer in a workplace context, a company seeking to engage its customers, or a technology-based service such as Khan Academy (for online learning) or FitBit (for fitness

tracking). The users of the gamified system we call the **players**. Whether or not the activity appears as a full-blown game, the participants respond based on their affinity for the game-like features.

As Rigby (2015) observes, gamification exemplifies a larger power shift from institutions to networked individuals, who must be enticed rather than commanded to perform. From the player's perspective, gamified systems are appealing because they seem fun, stimulating, or challenging. To the firm, all that matters are the relevant business metrics. In the LiveOps example, for example, the measure of the program's success was the agents' performance in answering customer calls, not the number of points or badges they earned in the gameful training. In some cases, the goals may be closely aligned. A good example is Keas, a gameful wellness program deployed within enterprises. It helps employees get healthier, while it helps employers reduce healthcare expenses. When there is dissonance between the motivations of the providers and the players, however, normative tensions can develop. If Keas were designed to identify employees at risk of serious health conditions in order to fire those likely to push up the employer's healthcare costs, the story would be different. And this is not the only area for concern. Even when the outcome is socially optimal, it may not reflect individual players' actual preferences (Bovens 2009).

All of marketing and management are, to some degree, efforts to harness individuals to serve organizational goals. However, gamification adds a new dimension to the economic relationships and power dynamics that normally hold sway in business. It establishes objectives addressed ostensibly to the hedonic desires of the individual. Players may be drawn in because they find the experience fun, they see it as distinct from "serious" work, or they feel a compulsion when the system pulls on psychological levers such as social comparison or rewards. Games-based activities correspond to established practices for motivation and behavior change (Werbach and Hunter 2012), as well as satisfying innate psychological needs (Ryan et al. 2006). Merely identifying a process as a game, with no other changes, has been shown to enhance participants' interest level and motivation (Lieberoth 2014). The question is how this changes the ethical calculus.

Framing the ethical issues

As gamification becomes a more common business practice, a growing number of practitioners and scholars are highlighting normative concerns. Accounts in the popular press describe worries about the manipulative or exploitative potential of gamification (e.g., Bréville and Rimbert 2014; Fleming 2012; Knowledge@Wharton 2011b).

Surveying gamification experts and stakeholders, Shahri et al. (2014) found diverse areas of ethical concern.

This awareness has not, however, led to the development of a robust code of conduct for gamification designers. The Engagement Alliance, a non-profit association for gamification practitioners, released a "proposed ethics statement" for public comment in December 2012 (Zichermann 2012). The first element is to "help individuals, organizations, and societies achieve their true potential"; the second is to "not obfuscate the use of game mechanics with intent to deceive." As a standard for ethically responsible gamification, this statement is woefully wanting. It is not clear why these commitments were chosen, or how they provide useful guidance to practitioners. "True potential" is exceedingly vague. The third and final provision in the proposed statement, to "share what I've learned about motivating behavior with the community" does not even concern gamification practices themselves. Not surprisingly, no provider appears to have endorsed the statement. The absence of thorough ethical analysis is in striking contrast to the rapid adoption of gamification in the marketplace.

Among gamification researchers, the primary attention to normative questions comes from critics who fundamentally challenge the practice per se. For instance, Bogost (2011a, b, 2015) and Rey (2012) regard the very idea of gamification as inherently exploitative. Sicart (2015) and Selinger et al. (2015) argue that gamification is fundamentally in tension with human flourishing or good character. Such attacks have some merit, as we will examine later. However, these critiques tend to be overbroad. A more nuanced approach is needed, as we explain below, because gamification practices are not always ethically wrong, nor do wrongful applications of gamification always have a single wrong-making feature (e.g., taking unfair advantage of the exploited). An employer using leaderboards to shame poor-performing workers may be in a different ethical and social context than academic researchers using game-like challenges to crowdsource scientific research, or a software provider making available a gameful tool to aid in weight loss.

As noted earlier, gamification ethics is under-theorized, at least in part, because the technological novelty and rapid adoption of the practice have outstripped careful consideration. Both proponents and detractors, therefore, tend to generalize too rapidly from particular examples. What is needed, thus, is a conceptual map of the terrain. Such an endeavor will by necessity be abstracted and incomplete: it cannot address all possible scenarios in detail, nor can it encompass all possible factors of moral salience. However, it should be more than a mere taxonomy. An ethical map of gamification can offer normative guidance to both scholars and practitioners if it identifies deep structures that tie together seemingly disparate phenomena and anchors the topic in established scholarly literature. Our starting point is that we need to take a context-relative stance—that is, gamification may or may not be ethically or socially acceptable in specific cases. The proper question is "What forms of gamification are unacceptable in which contexts, and which moral norms are primarily relevant to which contexts?" We propose that the ethical status of a practice of gamification, primarily, but not exhaustively, is determined by the extent to which the practice (1) takes unfair advantage of workers (e.g., exploitation); (2) infringes any involved workers' or customers' autonomy (e.g., manipulation); (3) intentionally or unintentionally harms workers and involved parties in various ways; or (4) has a socially unacceptable degree of negative effect on the character of involved parties. In the discussions below, we expand on the four categories of ethical difficulties that may arise. Each encapsulates a cluster of related concerns. For example, manipulation also brings to bear questions of autonomy, transparency, consent, and self-reflection, while exploitation highlights issues of voluntariness and fairness.

Exploitation

Game designer and critic Ian Bogost (2011a, 2015) dubs gamification "exploitationware." He writes: "…gamification proposes to replace real incentives with fictional ones … Organizations ask for loyalty, but they reciprocate that loyalty with shames, counterfeit incentives that neither provide value nor require investment. When seen in this light, 'gamification' is a misnomer. A better name for this practice is 'exploitationware'" (2011a). Sociologist Rey (2012) supports Bogost's claim by calling gamification a menacingly exploitative form of "play-bor" (Kücklich 2005). However, neither Bogost nor Rey fully develops the normative argument to support his claims. In this section, we consider whether their charge of exploitation can be further developed or justified.

Wertheimer's (1996) work is probably the most influential normative account of exploitation, according to which Transaction x is exploitative when Person A takes unfair advantage of Person B. Consider a standard example, *The Port Caledonia and the Anna*, in which the master of a ship A in danger asked for help from a nearby ship and the master of the nearby ship B offered £1000 or no rescue. In this case, A voluntarily agreed to pay £1000. Wertheimer explains that the transaction was voluntary, but it was exploitative because B was in a unique position to take advantage of A's vulnerabilities, which made the transaction unfair.[2] Wertheimer argues that the transaction would

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[2] Zwolinski (2007, 2008, 2009, 2012) claims in his libertarian account of exploitation that voluntarily chosen transactions are justified or tolerated. Thus, Zwolinski would not believe that the

not be unfair if a reasonable amount of competing ships were nearby, in which case *A* would not have unique vulnerabilities. That is, if there were some more competing ships, the price would probably be way less than £1000. Hence, Wertheimer proposes that, in general, Transaction *x* is fair if it is an option that would be chosen by Parties *A* and *B* in a hypothetically imagined competitive market.
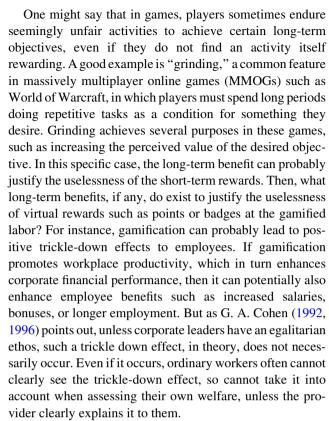
According to Wertheimer's fairness-based account, most consumer-facing gamified products would not be exploitative with customers, because the real market is already a competitive market. For instance, Nike+ is a mobile app that makes running a game-like experience, and competing apps or other products exist in the market. If a user chooses to adopt Nike+, we can assume the arrangement is fair, and, therefore, not exploitative.

One might say that Wertheimer's fairness account does not give us a clear view of gamified workplaces. First, it is not easy to hypothetically construct a competitive market for gamified workplaces. A company that provides gamification is already in a situation in which it hires employees. One might also say that the hired employees are not completely out of the labor market because they can always quit and change workplaces. In addition, because many competing companies already provide different systems of gameful environments, the real labor market is already like a hypothetically competitive market. It follows that most gamified workplaces are, therefore, not exploitative.

But this approach is not always appropriate. First of all, gamified environments are not always clearly included in job advertisings. Furthermore, quitting a job in order to avoid a certain practice of gamification that employees participate in during spare time—as in the case of Microsoft's Language Quality Game (Werbach and Hunter 2012), for instance—seems an unreasonable burden to employees. Third, and most fundamental, it is not clear whether or not workers are well informed about their situations and options regarding gamification. If the player is not reasonably informed about her most-preferred option, and voluntarily chooses virtual rewards in gamification, she may still enter into an unfair transaction.

Footnote 2 continued

transaction in *The Port Caledonia* was a wrongful form of exploitation. Along the same logic, Zwolinski also believes that most practices of sweatshops and price gouging are not exploitative or that even if they are exploitative they are justified forms of exploitation. In this article, we do not discuss the libertarian view. First, for the sake of consistency within the fairness account, we opt to primarily rely on Wertheimer's view (1996). Second, we disagree with Zwolinski, mainly because we do not believe that voluntariness is the most important moral consideration. For a more detailed discussion about this issue, see Michael Kate's (2015) recent criticism of Zwolinski's view.

One might say that in games, players sometimes endure seemingly unfair activities to achieve certain long-term objectives, even if they do not find an activity itself rewarding. A good example is "grinding," a common feature in massively multiplayer online games (MMOGs) such as World of Warcraft, in which players must spend long periods doing repetitive tasks as a condition for something they desire. Grinding achieves several purposes in these games, such as increasing the perceived value of the desired objective. In this specific case, the long-term benefit can probably justify the uselessness of the short-term rewards. Then, what long-term benefits, if any, do exist to justify the uselessness of virtual rewards such as points or badges at the gamified labor? For instance, gamification can probably lead to positive trickle-down effects to employees. If gamification promotes workplace productivity, which in turn enhances corporate financial performance, then it can potentially also enhance employee benefits such as increased salaries, bonuses, or longer employment. But as G. A. Cohen (1992, 1996) points out, unless corporate leaders have an egalitarian ethos, such a trickle down effect, in theory, does not necessarily occur. Even if it occurs, ordinary workers often cannot clearly see the trickle-down effect, so cannot take it into account when assessing their own welfare, unless the provider clearly explains it to them.

So far, we have discussed a micro account of the fairness view that focuses on individuals' discrete transactions (Snyder 2010). By contrast, macro fairness accounts of exploitation (e.g., Sample 2003) hold that transactions that can be viewed as innocuous from micro perspectives can nevertheless be unfair if they are based upon questionably unfair macro structures that have been historically created through global economic orders. The macro fairness account is not itself relevant to our purposes, because most gamification providers are US-or developed country-based companies. Yet, the underlying idea that workers can be structurally exploited can, nonetheless, be relevant and is worth pursuing.

A simple sociological mechanism underneath gamification is that workers in the contemporary world find their jobs more or less boring, monotonous, and sometimes meaningless, whereas gamification can offer fun and excitement. In fact, many popular books or lectures about gamification begin by emphasizing how unsatisfactory, not fun, and stressful most modern workplaces are (e.g., Burke 2014; Herger 2014; Paharia 2013; Zichermann and Linder 2013). If it can be argued that the monotonous and meaningless working condition is a structural issue of modern capitalist society that makes modern workers vulnerable to those who have capabilities or power they can leverage through gamification, then a society in which gamification is marketable and preferred by workers is itself a clue that we need to be concerned about the

fundamental economic paradigm in which workers cannot but choose gamification to find meaning and fun.[3]

Manipulation

Gamification is a technique to change players' behavior. So it is *prima facie* open to the charge of manipulation (Duggan and Shoup 2013; Fleming 2012; Herger 2014). Recently, editors of *Le Monde Diplomatique* (Bréville and Rimbert 2014) criticized gamification as manipulative with a provocative title: "Losing on points: Do you play games, or are they playing you?" The Pew Research Center's special report on gamification is also concerned that "[digital g]ames can be compelling and can easily lead to behavioral manipulation" (Anderson and Rainie 2012). To our knowledge, however, no rigorous normative work has been published to examine whether gamification really is manipulative. As we noted above, we find this lack of attention to be a moral risk or "tech-shock." In what follows, we explore how the charge of manipulation can be further developed.

We begin with Alan Strudler's (2005) account of manipulation, which we find to be intuitively acceptable. It is that "[o]ne person manipulates another when he intentionally causes that person to behave as he wishes through a chain of events that has the desired effect only because the manipulated person is unaware of that chain" (Strudler 2005: 459). According to this account, a company that does not clearly disclose to its workers the contents and goals of a gamification system because it knows they would otherwise not participate is manipulating those workers.

Consider a relevant example. Carnegie Mellon University computer scientist Luis von Ahn's ESP Game encourages players to label digital images (Von Ahn and Dabbish 2008). Does it matter whether participants who do so for fun are, in fact, contributing to an academic research project, a commercial search engine, or a pornography website? Zittrain (2008) identifies this as a significant ethical question for all crowdsourcing applications. It is an important question whether or not providers have a duty of disclosure about why players are being invited into gameful experiences. There may be situations where disclosure of the purpose of gamification could undermine its effectiveness, by sensitizing users or dissipating intrinsic motivations. Effectiveness can be a *pro tanto* consideration, depending upon contexts, but effectiveness does not typically justify a wrong. In the analogous situation of online privacy, fears that users won't opt into data collection do not themselves overcome arguments for such a requirement. Hence, further research about specific cases is required to articulate under what circumstances of gamification silence is permissible for effectiveness. A precautionary principle would be to provide as much disclosure as is feasible without undermining an otherwise legitimate activity, but such a rule leaves practical questions unanswered.

A stronger version of gamification transparency would be to mandate informed consent from participants. Requiring participants to have sufficient information and expressly advert to the contested action is a touchstone in bioethics, for situations such as human subjects research (Faden et al. 1986; O'Neil 1985, 2003). Appropriately, consent or voluntariness is a fundamental element of many definitions of games. Carse (1986) encapsulates this view succinctly with the maxim, "whoever must play, cannot play." The difficulty comes in defining the meaning of consent in this context. Mollick and Rothbard (2014) speculate that offering participants in a gameful sales competition the opportunity to customize visual features of the user interface enhances positive affect because it represents consent. However, is such surface-level autonomy sufficient, or must the worker offer informed consent to all aspects of the gameful experience? And given the potential of gamification techniques to stimulate psychological responses that supersede rational reflection, can we be certain even an affirmative agreement to participate after receiving all relevant information is an indication of consent? What about when a gamification program is mandated for a job? If the only opportunity to exit is to quit, which may involve significant costs for the worker, the formality of informed consent may not overcome ethical objections. Finally, consent has inherent limits. There are some actions that even informed consent (and in a legal framework, valid contractual assent) cannot legitimize. As it is in privacy (Nissenbaum 2004, 2010), consent in gamification can be necessary, but not necessarily sufficient to address normative concerns.

As Strudler (2005) himself recognizes, one can manipulate others without clearly deceiving them, for instance, by using compelling emotional influences. To explore this possibility, several recent discussions about manipulation draw upon Robert Noggle (1996)'s account. Noggle (1996) defines manipulation, roughly, as an attempt to cause others' decision-making to fall short of important moral and
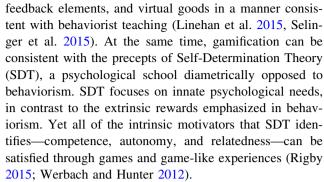
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[3] There are important accounts of exploitation that we do not explore in this section. For example, we do not discuss the Kantian account of exploitation as using workers as a mere means (Arnold 2003, 2010; Arnold and Bowie 2003, 2007), which typically requires, in the context of organizational life, meeting minimum or reasonable safety standards and providing a minimum or living wage. We do not explore Robert Goodin's (1986, 1988) vulnerability-based account or Mikhail Valdman (2009)'s excessive benefit based account. In theory, these other, unexplored accounts of exploitation can potentially address gamification as exploitative. Furthermore, although all existing accounts do not address gamification as exploitative, a new defensible account that addresses gamification as exploitative might be developed in the future. Further research is called for.

social values or to violate norms that reasonably govern their decision-making. This is a deep and complex account (see, Barnhill 2014; Blumenthal-Barby 2014; Mills 2014; Wilkinson 2013), but all that we need to say for our purposes is that varied fundamental values about decision-making can be relevant to manipulation (Gorin 2014) and the most relevant value for our context is autonomy. It follows, then, that a gamification provider manipulates workers or customers if the provider, through the video game experiences, causes the players to make decisions in a way that unjustifiably undermines their autonomy.

Different accounts of autonomy define it differently. Therefore, substantively different arguments can be developed about the manipulativeness of gamification, and whether or not gamification is manipulative depends, in part, upon which account of autonomy is most adequate for the gamification context.[4] Adjudicating different accounts of autonomy is beyond the reach of this survey article. As a model, we draw upon John Christman (1991)'s widely accepted account.[5] For Christman's historical account, what primarily matters for our context is the lack of factors that inhibit self-governance through minimally rational self-reflection. Although it is not an easy task to fully explain what Christman means by self-governance or minimal rationality, some commonsensical parsing will have to suffice for our purposes.

At a general level, gamification draws from behavioral psychology traditions that do not rely on rational self-reflection to explain behavior. One of these is behaviorist operant conditioning, in which people learn to associate rewards with desired behavior through an unconscious process of reinforcement, rather than rational consideration. B.F. Skinner, the giant in the field, even went so far as to reject the concepts of freedom and dignity entirely (Skinner 1972). It is easy to see why this approach has long been subject to moral and social criticisms. Many gamified systems employ rewards such as digital badges, visual

feedback elements, and virtual goods in a manner consistent with behaviorist teaching (Linehan et al. 2015, Selinger et al. 2015). At the same time, gamification can be consistent with the precepts of Self-Determination Theory (SDT), a psychological school diametrically opposed to behaviorism. SDT focuses on innate psychological needs, in contrast to the extrinsic rewards emphasized in behaviorism. Yet all of the intrinsic motivators that SDT identifies—competence, autonomy, and relatedness—can be satisfied through games and game-like experiences (Rigby 2015; Werbach and Hunter 2012).

Whichever psychological approach one adopts, gamification can be viewed as a means of shaping actions without conscious rational consideration. This alone does not clearly make it manipulative. There must be some factor that *inhibits* rational self-reflection, and, thus, unjustifiably undermines autonomy. Otherwise, every teacher who used the extrinsic reward of a good grade to motivate students to study, and every manager who convinced employees of the inherent joy of succeeding in a challenging assignment, would be guilty of wrongful manipulation.

Below we discuss two examples of specific inhibitors of rational self-reflection that can potentially arise in gamification: addiction and distraction.[6]

One of the defining features of addiction is an "impairment of self-control" or "compulsion" (Levy 2013: 1). It is possible that in a game, players are so engaged, addicted, and compulsive that they have difficulty stopping. Concerned about such effects, the Chinese government even passed a law requiring online game operators to install software that discourages players under 18 from playing more than 3 h per day (People's Daily Online 2007). Game developers can argue that addiction is an unintended outcome, but they can be responsible for such unintended outcomes if they should have been aware of them (Sher 2009). In addition, in other cases such as that of the casino slot machine, enticing uncontrolled play is a primary design goal (Schüll 2012). The same mechanics of seduction and variable rewards that are the basis for slot machines can also be found in gamification systems (Carr 2011; Thompson 2015). Virtual reward structures that

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[4] For instance, one might say that the hierarchical account of autonomy (e.g., Dworkin 1988), according to which one's autonomy is not infringed to the extent that his first order desire corresponds to his second-order desires, is not adequate for our purposes. If correspondence between first-order and second-order desires is what makes a person's decision processes autonomous, a person is not manipulated when his manipulated first-order desire corresponds to his manipulated second-order desires. This is a problem for our purposes. For a more discussion about the inadequacy of the hierarchical account for issues of manipulation, see Gorin (2014).

[5] "(1) A person P is autonomous relative to some desire D if it is the case that P did not resist the development of D when attending to this process of development, or P would not have resisted that development had P attended to the process; (2) The lack of resistance to the development of D did not take place (or would not have) under the influence of factors that inhibit self-reflection; And (3) The self-reflection involved in condition (1) is (minimally) rational and involves no self-deception" (Christman 1991: 11).

[6] Sicart (2015), a games scholar and philosopher of technology, argues that gamification inherently diminishes self-reflection, even when employed entirely at the user's choosing. From his neo-Aristotelian viewpoint, gamification interferes with human flourishing by introducing an artificial set of motivators that substitute for personal reflection on the goals and content of the experience. Because we discuss an impermissible and wrongful form of manipulation, to our perspective, the important question is whether the player's autonomy has been unjustifiably compromised. If not, the player is entitled to choose the stimuli through which she achieves her goals, although the choice can be bad in an Aristotelian sense. Nonetheless, we agree with Sicart that workers have a good reason to avoid bad choices.

promote obsessive behavior deserve ethical scrutiny. Players bear significant responsibility for their actions, but so do those who take advantage of psychological vulnerabilities to neutralize players' rational capabilities. Moreover, casino patrons and game players know they are entering a seductive game space, even if they don't appreciate the strength of its pull. As discussed in the manipulation context, those subject to gamification may be unaware of that fact.

We realize that it is in part an empirical matter whether addictive gamification is a concern in practice. Gameful systems lack the complex, immersive environment that may suck some players into massively multiplayer online games (MMOGs) to the exclusion of all else. If only complex games can get people to be addicted, then it is less likely that gamification gets people to be addicted. But one might also say that people are often more vulnerable to simple and repeated game environments such as points and badges. Simple social video games such as Farmville or Candy Crush Saga in fact target intensive players and rely on obsessive "whales" spending heavily for virtual goods (Johnson 2014). Of course, not all people can become easily addicted to simple games, but that does not justify behavior that targets vulnerable customers or workers. If a gamification system deliberately or negligently applies techniques to promote compulsive behavior, or fails to take corrective action when some players display such behavior, it falls short of ethical duties regarding manipulation.

Another gamification factor that can hinder rational self-reflection is the possibility of excessive distraction. Distraction is typically less compulsive than addiction, but it can still prevent a person from attending to a rational assessment of how his decision-making and behaviors affect his interests and welfare. There are opportunity costs to the time and energy players put into gameful activities. To the extent that these are voluntary choices by players, they reflect the natural variation in preference functions: one person's waste of time is another's worthwhile pursuit. At some point, though, the costs of a gameful experience can decisively outweigh the hedonic benefits. In contrast to full-blown games, which can create rich, immersive experiences, gamification tends towards shallower game-like activity. Such "cheap fun" is, as mentioned above, sometimes difficult to justify. Typically, a rational self-reflector would not prefer such an option. However, gamification can often easily distract players to make irrational choices.

Bogost's Cow Clicker, created to illustrate the perils of gamification, is an extreme version of this distraction scenario (Tanz 2012). Cow Clicker was a casual social game that invited players to click repeatedly on virtual cows every 8 h for no purpose other than earning virtual rewards. It attracted over 50,000 players, one of whom clicked a cow over 100,000 times. Cow Clicker is not itself an example of gamification; it is a stand-alone game. However, if the mechanics of Cow Clicker are emblematic of gamification, as Bogost apparently intended to suggest, an ethical challenge arises. The danger is similar to what media scholar Neil Postman described, in connection with television, as "amusing ourselves to death" (Postman 1985).

As with the addictive forms of manipulation, the line between ethical and unethical distraction is partly an empirical question. Thus, a rigorous normative investigation cannot be complete until enough empirical research about the distracting or addictive nature of gamification is conducted. Until then, we suggest the following as a rule of thumb: when a player would, upon rational reflection, conclude the time participating in a gamified activity would have been better spent otherwise, there is good *prima facie* reason to believe the line has been crossed.

Harms

We can safely assume that gamification providers do not intend to cause physical or psychological harm. Their goal, as discussed at the outset, is to achieve some organizational objective using a motivational technique. What if harms do in fact arise in connection with gamified actions? We consider the ethical implications of such scenarios in this section. The risks of physical harm due to gamification primarily involve injury to others outside the gamified system, while the risks of psychological harms generally involve the players themselves.

Physical harms

According to a 2011 article in *Foreign Policy*, Islamic jihadi groups use gamification techniques such as points, levels, and content unlocking on many websites designed to recruit supporters and promote their agenda (Brachman and Levine 2011). It would be a stretch to suggest that someone stumbling upon the sites would commit an act of terrorism just because gamification made the group seem appealing. Yet the gameful systems do enable jihadi recruitment. Terrorist groups need to ascertain which visitors to their sites are most fervently committed to the cause and weed out those who are untrustworthy or undercover law enforcement agents. The gameful elements are designed to walk users through a "player journey" toward mastery based on their performance on the site, granting access to more exclusive sections and more sensitive information only to those with enough points or achievements.[7] A similar example is Camover, a website

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[7] Many business organizations, e.g., Google, use similar game techniques to recruit qualified employees, including math questions and other IT challenges.

that encouraged protestors against the surveillance state to destroy CCTV cameras around Berlin. The site gave points and bonuses for creative techniques, functioning as a "real-life Grand Theft Auto" (Stallwood 2013). Even if political ideals against the surveillance state could be ethically justified to some extent, the encouraged behavior—damaging state property—would be ethically concerning. In both these examples, the gameful systems intentionally attempt to motivate players to harm others and themselves in ways subject to moral and social condemnation. One might say that there is some parallel between the ethical condemnation of the jihadi's use of gamification and the responsibility of game developers for the violence committed by players of violent video games, a significant discussion topic in games scholarship (Sicart 2009). But in video games, the game only simulates violence in the real world; the jihadi websites motivate action in the real world.

Gamification can also unintentionally, recklessly, negligently, or inadvertently encourage players to cause harms to involved parties. For instance, Lazzaro (2012), a noted game designer, observed the San Francisco Bay Bridge, where variable-rate tolls exist and where large screens display the current rate of cars crossing the bridge. This is a kind of gamification: a feedback loop with rewards for meeting the challenge of avoiding rush hour. Some drivers approaching the bridge near the cutoff time for the lower toll swerve off the road to wait before entering the toll plaza or stop in an active lane, creating a serious safety hazard. Sometimes the players themselves may suffer the harms. Several users of Strava, a gamified tool for cyclists, have suffered fatal crashes because, allegedly, they were too focused on the game rather than safety (Hill 2012).

Unlike cases of manipulation, these examples do not involve subverting the players' goals to those of the providers. In the case of the Bay Bridge, the results are even contrary to the provider's interest in offering safe transportation. The primary ethical responsibility may, therefore, remain with the player. Nonetheless, a responsible gamification designer should consider not just the direct harm for players, but potential indirect harm as well. If it is reasonably foreseeable that players may respond to gamification incentives in ways that harm themselves or others, the provider accordingly bears some responsibility.

A lesson from game design that carries over to gamification is that players are apt to "game the system" and sometimes act in ways the designer never anticipated (Werbach and Hunter 2012). Players might seek to absolve themselves from responsibility on the grounds that gamification numbed them to the serious implications of their actions,[8] but this claim will be difficult to sustain when

players are clearly acting outside the expressed frame of the gameful system. Both providers and players, therefore, have duties to avoid situations that contribute significantly to the risk of harm or unethical conduct.

Psychological harms

A video screen leaderboard system for the housekeeping staff at Disneyland hotels in Anaheim, California generated significant anxiety, embarrassment, and shame among workers, who labeled it "the electronic whip" (Lopez 2011). Seeing their performance ranked against that of coworkers on a large screen often caused some workers to skip bathroom breaks[9] and others to become panicked about losing their jobs.

Many gamification systems involve competition and ranking. For example, digital leaderboards showing the relative performances of players are a popular game element to adapt to the workplace. If contextually taken as a stick rather than a carrot, such features can sometimes produce "expressive harms" (Anderson and Pildes 2000). The Disneyland hotels' "electronic whip," mentioned above, is an obvious example. Plausibly, each of us generally has a negative duty not to gratuitously insult, offend, or humiliate others (Feinberg 1985; Kim and Strudler 2012) or a "duty of decency" (Kim 2014), which may be violated in such social contexts. Expressive harm is oftentimes not a trivial matter. As Margalit (1998: 9) argues, "humiliation," including insult, offense, embarrassment, or disrespectfulness, "constitutes a sound reason for a person to consider his or her *self-respect* injured," and self-respect is an important condition for a person to preserve her dignity (Dilon 1997; Hill 1973; Stark 2012). Thus, psychological harms, if incurred through gamification, can sometimes be an experience that strips workers of a certain dignity.[10]

In this context, transparency and voluntariness are not fundamental solutions. First of all, gameful activities can harm not only voluntary players, but also any other indirectly involved parties. Second, and more fundamental, one can wrongfully harm a person even if she consents to and prefers to receive such treatment, e.g., slavery or sweatshop labor (Meyers 2004). Both morality and law recognize that while people are autonomous actors capable of assuming

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[8] It is a controversial issue whether or not addiction or manipulation can absolve responsibility or blameworthiness. In this article, we only

Footnote 8 continued
assume the widely acceptable principle that a person is responsible or blameworthy for a wrongdoing to the extent that she has a relevant capability to avoid it. For more detailed discussions, see Levy (2013), Poland and Graham (2011), and Sher (2009).

[9] Causing employees to skip bathroom breaks can potentially involve issues of freedom. For a philosophical analysis about freedom, dignity, and use of the bathroom, see Waldron (1991).

[10] In this manner, Margalit (1998: 149) says, "if there is no concept of human dignity, then there is no concept of humiliation either.".

certain risks, they cannot consent *ex ante* to all injuries. Murder is an obvious example, and more commonly, harms that the reasonable person cannot be expected to evaluate fully and rationally. In fact, in the context of Disneyland, the more information workers have about their relative performance, the more humiliated they will feel. A gamification provider clearly should not mislead workers into thinking a gamified comparison system will be part of the performance review process when it is not. But if the gamification system is actually intended to identify poor performers, disclosing that fact will not alleviate the potential humiliation. If it is not intended in this way, players will appropriately wonder why the organization is going to the trouble.

In such social contexts, the normative concern centers on the socially interpreted messages to individuals in the real world. The player's actions within the game—in the Disney case, performing existing job functions—are not themselves problematic. Or at least, those actions are no more problematic than they were before the introduction of gamification. The potential for expressive harm arises from the socially interpreted impact on the workers' real-world job status. Yet the essence of the mental pain is not that the employer benefits unfairly, as with exploitation, but that the workers are pushed to feel diminished in relation to their co-workers or other individuals. The moral failing lies in ignoring the possibility that a competitive hierarchy that is innocuous within a game can be expressively pernicious in some social contexts. To avoid such expressive harms, gamification designers should anticipate and pay enough attention to the expressive dimensions of gamification and social norms governing public interpretations of given contexts (Anderson 1993; Hellman 2000; Nissenbaum 2004, 2010).

Character

As Grant (2012) explains, incentives can sometimes have a negative effect upon people's character traits. A standard example is that parents often hesitate to use candy as a reward to change their child's behavior, not just for health-related reasons, but for its negative impact upon important social character traits like autonomy, self-governance, etc. Moral character is a complex concept (see e.g., Adams 2006; Hursthouse 1999) and we do not aim to fully cover how gamification can impact different aspects of character. We discuss how gamification in some limited social contexts can motivate people to cultivate and display a socially inappropriate degree of moral indifference—a building block of bad character or vice (Arpaly 2003; Arpaly and Schroeder 2014)[11]— to fundamental human values such as

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[11] A reverse moral indifference or goodwill is a building block of good moral character. See Arpaly and Schroeder (2014).

the sanctity of life (Dworkin 1993). Let us quickly move on to real cases.

In 2012, the Israel Defense Force (IDF) launched a blog and social media effort to rally support for its military action against the group Hamas. The campaign raised eyebrows when it incorporated gameful badges and levels to reward readers who searched for information on the blog and shared content through social media connections. John Mitchell, a writer for a popular technology blog, was flabbergasted: "This is a WAR. Israel is trying to enlist the people of the world in its campaign with military ranks, badges and points. Innocent people are dying on all sides, and the IDF wants to reward people for tweeting about it." (Emphasis in original.) (Mitchell 2012).

Mitchell's objection has intuitive appeal, but is difficult to justify on deeper investigation. From the IDF's perspective, the gameful war blog was a fully transparent effort to engage and motivate supporters. What, then, was the ethical problem? Unlike full-fledged video games or serious games, gamification involves not just simulating reality but influencing it. The IDF blog was actually part of the war effort. Specifically, it was a propaganda tool. The real concern implicit in Mitchell's moral reservation might be that participants would come to see the Israeli campaign in a positive light. The game-like environment might contribute by de-emphasizing the brutality of combat, but so would a stirring speech about the rightness of the cause. If this is the source of Mitchell's concern, one could certainly conclude that the IDF blog was in poor taste, but to declare it ethically suspect is a contestable conclusion about the IDF's campaign against Hamas, rather than about gamification.

Furthermore, it is unclear whether the problem is that war should never be associated with games. War games, both physical and virtual, are a widespread and essential military planning tool. Nor is there an inherent ethical problem with digital games related to war. Although concerns are sometimes raised about the dangers of violent video games, it is unclear whether there was something uniquely violent displayed in the IDF's social media campaign. It was about a war, but participating in it was not actually like fighting in a war. The IDF blog is more akin to strategy games, such as the well-regarded Civilization series, which show battles as a stylized, bloodless movement of armies. Even critics of violent video games rarely attack such titles.

Nonetheless, a moral remainder could still exist. There is more than one way to address Mitchell's suspicion, but one interpretation of his quote is that the wartime context is inherently serious because it inevitably involves serious injuries, including killing innocent people, but that gamification in this context is used to motivate people to cultivate and display a certain moral indifference to

fundamental human values like the sanctity of life, an indifference that one can find morally and socially unacceptable. Suppose that two men are playing a video game that involves physically saving a drowning child. They compete for the sake of fun, points, and badges, but not for the sake of the sanctity of life. Of course, their act itself—saving children in danger—is a right thing to do. Thus, their act is not itself blameworthy. But their desire to save the child, encouraged by the game, can be interpreted as inappropriate because it expresses moral indifference to a certain fundamental human value that deserves serious consideration. If the players were repeatedly or habitually exposed to such motivating influences, it could have a serious impact upon the players' moral character.

As in the case of the other moral concerns we have discussed, each case must be contextually examined. If some incentives for morally good actions, such as tax deductions for charitable giving, do not have a socially unacceptable degree of negative impact upon tax payers' civic character, such incentives would not be interpreted as cultivating a socially unacceptable form of moral indifference to values like beneficence or generosity. In the case of wartime, however, gamification can more likely, depending upon contexts, encourage people to cultivate and express unjustifiable moral indifference to fundamental human values like the sanctity of innocent life. Wartime businesses and other business activities that involve fundamental human values should be extremely careful of using gamification.

Another example that tests the boundaries of what can be gamified, with respect to fundamental human values, involves a US military base in Griesheim, Germany that was involved in tapping email and other electronic communications in connection with the global effort to fight terrorism. As part of training, operatives were challenged to earn "skilz points" and unlock achievements based on their success at finding promising information (Poitras et al. 2013). Here again, some observers would intuit that something was inappropriate about the use of gamification, but it is difficult to divorce that sense from one's contextual perspective about the underlying activity. Imagine a social context in which gamification had been used by the British team at Bletchley Park that cracked the Nazi Enigma code during World War II. One might believe, then, that any motivational approach that improved those scientists' performance would be viewed favorably. But the moral reality is not that clear. In the saving-the-drowning-child game, the players' act was not itself wrong, but displayed a certain moral indifference—and the gaming encouraged them to do so. It is possible that the gameful system can have a negative impact upon the British team's moral character, by repeatedly or habitually encouraging them to have a certain moral indifference to fundamental human values.

Ethical gamification designers should pay attention to this unintended moral trade-off and should try to minimize players' moral cost, especially given the dominant role of working life in the contemporary world and its strong spillover impact on other aspects of our lives and our character traits.

Of course, because gamification obfuscates the norms of two different spheres, where to draw the line is not always clear. If motivational techniques derived from games should not always be employed in "serious" environments, that would apply to services such as Free Rice, an online quiz game created by the United Nations World Food Programme that educates players about world hunger, or Half the Sky, a social game on Facebook that raises awareness about the mistreatment of women around the world. Rather than providing definite answers here, we propose a basic guideline: carefully examine whether or not gamification repeatedly encourages players to be indifferent to fundamental human values.

Conclusion: toward a framework

Each of the four categories of moral concern about gamification raises distinctive issues. And within every category, the specific circumstances of implementation must be considered to determine whether ethical lines might be crossed. Gamification is not per se exploitative, manipulative, harmful, or detrimental to character, but neither can any of those objections be dismissed out of hand. Further analysis is needed to develop a full framework for normative evaluation of gamification systems. However, we can sketch the outlines of an approach that could assist gamification providers in taking ethical concerns into consideration.

We acknowledge that gamification can be involved with moral issues other than the four in our framework. Our approach has been inductive, building on a systematic evaluation of the ethical issue in major cases. Nonetheless, we believe there are unifying principles reflected in the ethical concerns we have discussed. As described at the outset, gamification always involves two sets of actors (individuals we call players and the organizations we call providers) and two kinds of experiences (in the "magic circle" of the game and outside it). Overlaying these two dimensions produces four quadrants, each of which houses a different normative concern discussed in this article (Table 1).

Exploitation and manipulation both arise from the relationship between the providers and the players. The moral status of the situation cannot be assessed solely by asking if the player is worse off. If the flaw in the player/ provider relationship is an imbalance *in the real world*,

Table 1 Conceptual mapping of gamification ethics

	Real world	Game
Relational	Exploitation	Manipulation
Individual	Harm	Character

such that providers are able to take advantage of players' unique vulnerabilities, the issue is exploitation. If the problem is that providers have created an environment such that, *in the game*, players do not make autonomous decisions, and instead make choices serving the providers, the issue is manipulation.

Harms and character, by contrast, can be evaluated purely with reference to the players as individuals. Whether the providers benefit is immaterial. If the gamification activity produces an injury manifested *in the real world*, whether physically or psychically, the issue is one of harm. If instead there is an ethical lapse *in the game*, such that players act to satisfy the game's objectives and are indifferent to fundamental human values, the issue is character.

Since we did not cover all (possible) cases, it is logically possible to see cases that cannot be appropriately addressed by the four considerations. If there were such cases, they would need to be taken seriously, and additional effort would need to be made in the future to further develop the framework of gamification ethics. We do not deny such a possibility. Nonetheless, we believe that these four categories can address moral issues in a broad range of gamification cases. One reason is that we draw upon three major ethical theories and values to develop the framework. For exploitation and manipulation, we appeal to deontological values such as autonomy, reason-responsiveness, and fairness. For harm and humiliation, we appeal to both deontological and utilitarian values such as dignity, self-esteem, and harm. For character, we appeal to virtue ethics.

As is the case with many new business practices, the adoption of gamification has preceded a serious examination of its benefits and dangers. Most reports about the practice and its effects are anecdotal. Best practices are not well-defined. Success stories are better publicized than failed implementations. In such a context, both empirical and normative scholarship can contribute to better understanding. This is particularly true for ethical considerations. Firms deciding whether to invest in gamification solutions have a direct incentive to demand sufficient evidence of gamification's effectiveness in meeting their business goals. In contrast, firms do not always clearly see a direct financial incentive linked to the moral significance of a practice and so, unfortunately, ignore the ethical dimension. However, adopters of gamification need to understand that the moral legitimacy of business practices is itself often directly related to corporate financial performance

(Margolis and Walsh 2003) and the survival of a firm significantly depends upon gaining, maintaining, and repairing moral legitimacy (Suchman 1995). More fundamentally, gamification providers need to understand that the purpose of business is not to manipulate, exploit, or harm people, but to help them create values for human flourishing (Donaldson and Walsh 2015).

In detailing four major areas of ethical concern for gamification, we are not arguing that gamification providers are all morally terrible, vicious, and wicked people. Most probably strive to be moral individuals, and take ethical issues into consideration in their gamification designs in an implicit and unconscious manner. However, good people can make bad decisions. As behavioral ethicists show (Bazerman and Tenbrunsel 2011), people are often not as ethical as they think. Their failure to recognize or admit this fact leads them to self-justify unethical actions. Such moral naiveté can lead gamification developers to unreflectively believe that their services or products have no ethical problems. Specifically, recent behavioral ethics literature compellingly shows that good and well-intentioned people make unethical decisions mostly when their decisions are made in what Daniel Kahneman (2011) calls System 1 Thinking mode, characterized as unconscious, effortless, and automatic. To avoid such a problem, gamification developers should make a shift from System 1 to System 2 thinking, characterized as deliberate, conscious, and principled (Prentice 2014; Tenbrunsel and Smith-Crowe 2008). What we have explored in this article is one attempt to look at gamification ethics from the perspective of System 2. We hope this view helps gamification developers and researchers better understand the ethics of gamification.

Further work could build additional bridges with ethics and information technology, and with legal regimes that exist to protect similar interests. If gamification continues to develop and become more prominent, serious attention to ethical concerns will help to push the field in a positive direction. Such an effort would help to move the gamification ethics conversation further toward particulars. There have been few rigorous case studies of gamification practices, and even fewer controlled experiments. Even the scope and definition of the field is still subject to debate. With regard to gamification ethics specifically, the extant examples, such as the Disney "electronic whip," Camover, and the other cases described throughout the article, are generally drawn from news articles rather than academic works. Further rigorous work is needed to guide gamification designers at both the design and implementation stages.

A situation analogous to gamification arises in debates about online privacy. Systems that collect, aggregate, distribute, and use personal information raise serious

normative questions, but developing a robust theory that covers the breadth of these situations and takes into account the countervailing values at play has proven difficult. One of the most successful approaches is the concept of contextual integrity (Nissenbaum 2004, 2010). Contextual integrity identifies legitimate objections to novel information transmission practices with violations of context-relative norms. Such a violation is *prima facie* established with changes in actors, attributes, or transmission principles in a prevailing context, and can be overcome with sufficient moral justification for the new practice. Gamification differs from privacy in that it is not based upon information transmission. However, it is similar in that it involves a variety of arguably objectionable practices that can be categorized in terms of players, providers, and contextual norms.

A contextual integrity approach to gamification ethics would identify the individuals subject to gamification, the organizations implementing it, and a set of motivational principles. These could include transparency, consent, autonomous decision making, and adequate rationale. The approach would then evaluate practices relative to the norms in two parallel contexts: the game and the real world. Manipulation and impact on character involve actions within the game frame; exploitation and harm are evaluated relative to real-world behavioral norms. This approach allows consideration of factors such as whether the individuals subject to gamification are unusually vulnerable, and whether the situation involves an activity in an area with distinctive norms, such as health.

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