Grow-A-Game: A Tool for Values Conscious Design and Analysis of Digital Games

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ABSTRACT
This paper discusses a tool developed by the Values at Play (VAP) project to facilitate values-conscious design and analysis of digital games. Our tool, called the Grow-A-Game cards, has been implemented and assessed in numerous advanced and beginner game design courses. Here, we report five case studies of Grow-A-Game exercises, each demonstrating how the cards can be used to produce innovative and interesting values-focused designs and/or guide meaningful exploration of the relationship between values and games.

Keywords
values, ethics, digital games, video games

INTRODUCTION
Values at Play (VAP) is a project that brings together game designers, gamers and scholars from a variety of disciplines to explore the relationship between values and digital games. More specifically, we are interested in the processes through which designers imbue their games with moral, social, and political values, whether

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intentionally or inadvertently, and the corollary processes through which these values are interpreted by players.

Unfortunately, in the public discourse on games, the word "values" has become associated with a particularly strident (and often disingenuous) strain of "family values" oriented criticism. From the "family values" perspective, games are a pernicious medium, encouraging young people's violent and prurient impulses. While it is beyond the scope of our paper to address the inaccuracies of this view[1], since 2005 VAP has aimed to foster a more constructive discourse on values and games.

Our recent initiatives and outreach include:

1. The development and implementation of a curriculum to introduce graduate and undergraduate game design students to "values conscious design" (The curriculum is freely available to download at www.valuesatplay.org; for a detailed overview, see Belman, Flanagan & Nissenbaum, 2009). To clarify what we mean by "values conscious design," we describe games as "values conscious" when their designers have systematically considered the moral, social, and political resonances of design features. In our experience, a values conscious approach effectively inspires innovation in design. This is because values conscious designers explore themes and work with constraints that are typically outside of mainstream, entertainment-focused designers' concern; therefore, they tend to produce games that are markedly different than their mainstream counterparts. The curriculum has been used in several leading American game design programs, including at Georgia Tech, The University of Southern California, University of California San Diego, the Rochester Institute of Technology, Dartmouth College, Hunter College, and others.

2. VAP has run workshops that invite leading scholars in a variety of media and technology-related fields to participate in values-focused exploration of many emerging and rapidly evolving technical design fields (e.g. virtual communities, mobile computing environments). The output of these workshops contributes to our overall understanding of the complex relationship between values, media and technology.

3. As a further proof of concept, we are in the process of a multi-method, multidisciplinary inquiry into designing games that affirm the value of empathy and foster feelings of empathy in players. Games are well-suited to facilitating empathetic experiences because they allow players to inhabit the roles of other people in a uniquely immersive way. This work has many practical and pro-social applications, including the design of games to combat prejudice, and the design of games to sensitize people towards important social issues (for an overview of this research, see Belman & Flanagan, 2010a).

This paper will focus on a tool developed by VAP researchers in the course of our larger research project, namely, the Grow-A-Game cards, whose purpose is to facilitate values-conscious design and analysis of digital games. In it, we report five case studies of Grow-

A-Game exercises, each demonstrating how the cards can be used to guide meaningful exploration of the relationship between values and games. The case studies are prefaced by three preliminary sections. The first discusses the intellectual foundations of the VAP project, the second describes how the Grow-A-Game cards are used, and the third relates our process for deciding which values to include in the Grow-A-Game deck.

INTELLECTUAL FOUNDATIONS

The fundamental principle of our project is that games do carry values, both in their mechanics and in their narrative/ representational elements. Through the design process, values are embedded in games whether designers intend them to be or not. This idea is rooted in at least three distinct scholarly perspectives.

First, there is considerable evidence from the social sciences that other entertainment media do have a practically significant influence on audience perceptions of social realities. For example, studies have found that television can impact viewers' attitudes towards sexuality, society, race, gender roles, and other deeply value-laden topics (for an excellent review of research on television-specific media effects, see Morgan, Shanahan & Signorielli, 2008). It would be surprising if games were somehow impotent in this respect, neither perpetuating nor challenging moral, social, and political values.

This does not mean games are capable of brainwashing people. When pundits blame catastrophes like the Columbine high school massacre on the influence of games, they vastly overestimate the power of media effects. At the very least, however, it is reasonable to argue that as games become a more prominent part of the media landscape they take on greater significance in the broader cultural discourse.

Second, there is a vigorous strain in the game studies literature describing how ideological content is conveyed in games. Notable examples include Hoglund's (2008) discussion of hegemonic militarism and Americentrism in some shooters, Sicart's (2003) analysis of The Sims (Maxis, 2000) as a simulation of post-capitalist society, Salen and Zimmerman's (2003) description of games as a form of cultural rhetoric, and Jenkins's (1998) work on the deeply gendered leitmotifs in digital games. Members of this community, including ourselves (Flanagan, Howe & Nissenbaum, 2008), have also explored the pragmatic corollary to these ideas, i.e. the notion that designers can build ideological and/or ethical and/or persuasive content into their own work (e.g. Bogost, 2007; Fullerton, Morie & Pearce, 2007; Barab, Thomas, Dodge, Carteaux & Tuzun, 2005).

Finally, in the philosophy of technology, there is a long history of debate and an accompanying rich literature supporting the argument that values are embodied in technical artifacts (e.g. MacKenzie & Wajcman, 1985; Akrich, 1992; Latour, 1992; Friedman & Nissenbaum, 1996; Brey, 1997; Weber, 1997; Flanagan, Howe & Nissenbaum, 2008). For example, this is the position taken by Langdon Winner (1988) with reference to structures designed by Robert Moses, an influential urban planner who shaped much of New York City's physical infrastructure in the mid-20th century. Moses masterminded the development of bridges over many New York City parkways. The bridges are built far too low for buses to pass underneath, and since some of New York's beaches could only be reached via the parkways which flowed under the bridges, people who depended on public buses for transportation (i.e. those who could not afford cars) were effectively denied access to the shoreline. Winner's argument is that the Robert Moses bridges, by the function of a specific design feature (i.e. their height), facilitated

classist outcomes by keeping poor people off certain beaches. In this analysis, classist values were built into the physical infrastructure of the city.

Values are built into games in analogous ways. Consider Mary Flanagan's interactive sculpture *Giant Joystick* (2006), which affirms the value of collaboration by modding the user interface of classic Atari 2600 games. Using a standard controller, these games are in some ways an isolating pursuit; they shift players' attention towards the action onscreen but also away from friends in the physical environment. Change a specific element of the design (in this case, the scale of the user interface) and the experience is transformed. Visitors cannot play with *Giant Joystick* by themselves; one person (or sometimes more than one person) moves the stick, while another person presses the fire button by jumping on it. With the new interface, the games become a joyous celebration of collaborative fun (though, of course, the original incarnations of these games are deeply engaging in their own ways).

Figure 1: Giant Joystick

The user interface, however, is not the only design element of games that carries values. In VAP research conducted on student design work, the team identified eleven game elements in which values are typically implicated, i.e. premise, characters, story, actions in game, tools/ resources available, player agency/ options, rules for interaction with other characters or players, rules for interaction with environment, reward structure, strategies, and scoring. The list is not meant to be exhaustive; values can certainly be present in game elements not mentioned. But the results of our research do suggest that any of several "moving parts" in a game can color the overall values content.

THE GROW-A-GAME CARDS

In a paper for the 2007 DiGRA conference, we described an early prototype of a tool to facilitate values-focused critical analysis of games (Flanagan, Nissenbaum, Diamond & Belman, 2007). Since then, the tool has evolved through numerous iterations, and through implementation and assessment in many advanced and beginner game design courses, to become the Grow-A-Game cards. While the early prototype was purely a tool for analysis, the current version, described in this paper, are useful for both design and analysis.

A deck of Grow-A-Game cards contains four categories or subsets of cards:

- Values Cards: Each card lists a value term, e.g. trust, privacy, liberty, sustainability.
- Verb Cards: Each card lists a game-related verb, or mechanic, e.g. leading, building, matching, avoiding, nurturing.
- Games Cards: Each card names a familiar game to build upon, or mod, e.g. Hopscotch, Pac-Man (Namco, 1980), Civilization (Meier, 1991), World of Goo (2D Boy, 2008).
- Issues Cards: Each card names a problematic social issue, e.g. displacement, global warming, racism, urban sprawl.

Figure 2: The Grow-A-Game Cards

In brainstorming exercises, two or more card categories are often used to set the parameters of a design challenge. For example, how would you design a game that (a) mods the game of Civilization (Meier, 1991), to (b) address social issues related to food politics, while (c) affirming the value of equality?

Some combinations seem to present an impossible challenge, e.g. modding Space Invaders (Taito, 1978) to use the verb/ mechanic of collecting and address issues relating to civil rights. But in our experience using the Grow-A-Game cards with students, designers, and scholars, there seem to be few if any insurmountable challenges once initial reactions or resistance are put aside. Unusual constraints, in fact, do not appear to stymie the design process. Rather, they encourage more creative and unconventional ways around a problem, perspectives on a story, and fundamentally interesting and novel designs.

In this paper, however, we focus on two types of exercises that use only the "values cards." One activity involves values-focused analysis of games, while the other facilitates the act of values-conscious design. In the analysis activity, participants draw or choose a values card from the deck, and discuss the value on the card with reference to existing games. This can be an enlightening process as players do not always consciously process the values that are embodied in games they play. By taking an analytical perspective

towards their prior play experiences, participants often discover that games they assumed were value-neutral are charged with social, moral, and political meanings.

In the design-focused activity, participants begin by drawing or choosing a values card from the deck. The value on the card becomes the focal point for the exercise, which can be 15 minutes of brainstorming for rough game ideas, a finished semester project, or anything in between. Participants commit to consistently affirming (or otherwise exploring) the value on the card through both the mechanics and narrative/ representational elements of their design. For example, if a designer commits to the value of peace, it would be problematic to create a 1st person shooter where the hero lays waste to a belligerent force that threatens world peace. In this kind of design, the narrative might carry values related to peace but the combat-oriented game mechanics would undermine those values. There would be a conflict between values embodied in the narrative and those embodied in mechanics. In this case, the challenge would be to devise a clever, peace-affirming mechanic that engages players as much as more conventional shooting, stabbing or punching mechanics. Our research suggests that when these kinds of conflicts are successfully addressed, it often leads to the creation of innovative new mechanics (Belman & Flanagan, 2010b).

Figure 3: A Grow-A-Game Exercise

WHOSE VALUES?

In deciding which values to select for the Grow-A-Game cards, we focused on those that are prominently highlighted in ethics and philosophy literatures, as well as those that are commonly cited in the foundational documents of liberal, egalitarian democracies (e.g. the United States Constitution and the Canadian Charter of Rights and Freedoms). In addition, other values, such as environmentalism, were included because we have encountered a great deal of interest from designers in affirming those values in games.

Our list of values is of course not exhaustive, and in some cases reflects culturally specific perspectives. For example, the value of 'autonomy' might particularly resonate with Americans, but may be less important in societies that are more inclined towards collectivist values. We have included blank cards in the Grow-A-Game deck, so that

users are encouraged to "mod" the cards by adding values that reflect their own world views and commitments.

CASE STUDIES

Each of the following sections describes a case where a Grow-A-Game exercise strongly resonated with participants, or where it helped to produce an interesting and innovative design. In some of the case studies, participants were professional designers, and in others they were students. With both types of audiences, our experience has been that the cards facilitate a value-conscious approach to game design and analysis.

Case Study 1: Design students using the cards to explore the values at play in existing games (compassion in Mario and Sonic games)

In game design classes that use the VAP curriculum, the first assignment typically requires students to examine a game they have already played using the Grow-A-Game cards. They draw a "values card" from the deck, and then as homework, identify and document a segment of a video game that exemplifies the value on the card. During the next session, they present the segment to classmates, and collectively explore exactly how the value is articulated, affirmed, challenged and/or violated in specific aspects of the game's design.

'Ali,' an undergraduate student at a large urban university, was taking an introductory game design class that was largely based on the VAP curriculum. Although she rejected the label of "hardcore gamer" for herself, she avidly played platformers, her favorites including games in the Super Mario Bros. and Sonic the Hedgehog series.

When she drew the "Compassion" card in class, Ali's first instinct was to present scenes from the Mario and Sonic games. Her impression had always been that the heroes of both series are motivated by compassion. In literally hundreds of games over three decades, Mario is usually trying to save Princess Toadstool from his arch-nemesis Bowser, the malevolent king of a militant turtle society. Likewise, in many Sonic games, the hero ends each level by rescuing imprisoned animals from the evil machinist Dr. Robotnik.

However, after a spirited discussion in her class, Ali began to think that her view of Mario and Sonic games as compassionate did not account for all aspects of their design. Specifically, while a concern for others was expressed in the stories of these games, their cartoonishly violent gameplay seemed less consistent with the value of compassion. This more nuanced appreciation of the values at play in Mario and Sonic games was reflected in Ali's subsequent writing for the class:

> I actually remember on Sega, the game *Sonic the Hedgehog 2* (Sonic Team, 1992). What's funny about this one is that during the actual levels, Sonic is racing around collecting rings and killing robotic animals - greedy and murderous acts. However, at the end of each act, after defeating the boss, you jump on this capsule to free the poor animals, exemplifying compassion. … This seems to be common amongst most games. The storyline doesn't quite match up with the mechanics. The value isn't shown throughout the game, but serves as motivation for the game.

A core principle of our project is that values are at play in both the mechanics and narrative elements of games –and that often the values embodied in narrative can conflict with those embodied in mechanics. This is an understanding that students often come to

through the Grow-A-Game exercises, and it very commonly informs their design work in classes using the VAP curriculum. Our findings suggest that when students apply this insight to their designs, they are more likely to create games in which particular values are consistently affirmed, as opposed to games in which narrative and mechanics are at odds with each other.

Case Study 2: Design experts using the cards to explore the values at play in existing games (generosity in MMORPGs)

In a meeting with the game designers and scholars on our project advisory board, we conducted a "dry run" of the Grow-A-Game cards by using them to guide analysis of existing, mainstream games. An especially incisive discussion began after the generosity card was drawn. Dr. Celia Pearce, an interactive media designer and game design educator, used the value of generosity to describe an interesting class of emergent behaviors in MMORPGs.

As players increase in level in an MMORPG, they continually acquire more powerful items, equipment and other resources. Because items are acquired so frequently, it is common for players to have an inventory filled with items they have never used. For example, in *World of Warcraft* (Blizzard Entertainment, 2004), a player at the top level of a battleground bracket may own a bow that could have been useful at a lower level, but has since been made obsolete by more powerful bows. Instead of keeping or selling the obsolete bow, she can offer it for free to a weaker player at the lower end of her battleground bracket. In the vernacular of MMORPG players, these acts of generosity are called "twinking."

In most MMORPGs, there is no explicit reward for giving a gift to a less experienced player, so it may be considered an act of pure generosity. However, as in the non-game world, there are important social rewards for generosity. Giving a gift to a player may earn his or her loyalty, and may also improve one's reputation in the broader player community. Players value these kinds of social rewards, and thus some forms of giving become a common activity in nearly all MMORPGs.

It was noted, however, that some MMORPGs do provide material rewards for supporting less experienced players. In *Asheron's Call*, "mentors" keep a percentage of the experience points earned by their mentees. This raised some thought-provoking questions about the relationship between design features and values. If twinking is performed with the expectation of material rewards, can it still be considered a manifestation of generosity? In other words, do material rewards eliminate the possibility of genuinely generous play?

Ultimately, our discussion turned to the ways that particular reward systems might impact the social dynamics of MMORPGs. If there are no material incentives for generosity, does this encourage players to focus on social rewards, such as the friendships that often blossom between "newbies" and the veteran players who help them to navigate unfamiliar game worlds? On the other hand, if experience points or some other material rewards are used to incentivize generosity, as in *Asheron's Call* (Turbine Entertainment, 1999), how does this influence the character of mentor-mentee relationships? In such cases, perhaps both mentors and mentees will be more likely to treat their interactions as little more than mutually beneficial transactions, something distinct from and in some ways less meaningful than true friendships. This could conceivably affect the emotional

tenor of an MMORPG, subtly undermining a sense of community and encouraging a mercantile view of interpersonal relationships in a game world.

The consensus amongst our advisory board was that this basic Grow-A-Game exercise revealed some potentially fruitful avenues for research (e.g. a comparative ethnography of twinking across numerous MMORPGs), and also highlighted some important considerations regarding rules that govern sharing between players that are often glossed over in the design process.

Case Study 3: Design students using the cards to explore the values at play in existing games (humility in Shadow of the Colossus)

After the first year of implementing the VAP curriculum, our team interviewed participating instructors for feedback. One instructor, 'Jack,' told us the Grow-A-Game cards had been a valuable tool for encouraging his game design students to experiment with innovative projects. Due to time constraints, Jack could not assign the video exercise as homework (as described in the first case study). So he devised an in-class activity that was similar in purpose. He took several "values cards" from the deck, and asked students to consider how the values on the cards were represented in popular games. One value in particular piqued the class's curiosity and ultimately influenced some of his students' design projects.

When Jack drew the "Humility" card, he thought it might not elicit much of a response from his students. After all, so many popular games are enjoyable because they make players feel powerful – it is fun to be the deadly assassin dispatching heavily guarded VIPs, or to guide a thriving civilization through history, or to be the indomitable space marine who almost single-handedly repels attacking hordes of sentient robots. Even when the player character (PC) is relatively weak at the start of the game, there is usually the expectation that s/he will become much stronger by the end. Given the medium's propensity for immersing players in powerful roles, Jack wondered whether his students were likely to find themes of humility in either the games they liked to play or in those they wanted to design. After some initial bafflement, a few of the students related their experiences with *Shadow of the Colossus* (Team Ico, 2005) (*SotC*) on the Playstation 2, one of the most critically acclaimed and also atypical games in console history.

The game begins as the PC, a warrior named Wander, asks an otherworldly entity to resurrect a dead girl (presumably his romantic partner, though this is never explicitly stated). The entity agrees, but says it will only be possible once Wander kills sixteen colossi that live in a barren wasteland. The colossi are beautifully designed characters, their aesthetic a hybrid of animal and architectural features, virtually all of them so large that they are essentially landscapes in and of themselves. Some of Jack's students said that when first encountering one of the colossi, their impulse to look and admire was stronger than their impulse to attack, which is an unusual reaction to an "enemy" in a video game. Once the first colossus is killed, it is evident the designers did have something unusual in mind, and that *SotC* is departing from the familiar themes of its medium.

The tone of the colossus's death scene seems tragic rather than celebratory. It does not die in a satisfying explosion or drop valuable loot. Instead of a victory jingle, the music is vaguely funereal. As the player progresses, it becomes even clearer the colossi are not typical video game enemies. They do not threaten anyone, and often do not attack the PC until they are attacked. It also becomes clear that Wander is not a typical video game

protagonist. As he kills the colossi, he physically changes, but not so that he appears more powerful. Rather, he looks increasingly gaunt, shadowy and sinister. At the end of the game, the deaths of the colossi release a powerful malevolent spirit from imprisonment. At first, Wander's quest seemed to fit a conventional save-the-princess paradigm, but it is ultimately revealed to be self-centered and destructive.

Some of Jack's students felt that humility was the game's most prominent theme, and that this differentiated it from almost all other mainstream games. In most games, there is a more or less direct alignment between the PC's personal goals and the greater good. In *Super Mario Galaxy* (Nintendo EAD Tokyo, 2007), for example, Mario saves his romantic partner, the Princess Toadstool, but in the process he is also thwarting Bowser's plans for universe domination. In *SotC*, however, Wander could only serve the greater good by denying his personal goals and retreating from his quest (although to do so would end the game). There is an element of humility in recognizing that your own goals are not, in fact, paramount, and that yours is not the exceptional case where the ends justify violent means. The consensus that emerged in Jack's class was that *SotC*'s extraordinary emotional (and ethical) impact is attributable to the game's artful exploration of this theme.

For their final project, each student designed a playable non-digital version of a game. The primary constraint was that it had to consistently affirm or challenge a particular value through both narrative elements and mechanics. Based on his previous experience as a design instructor, Jack had initially assumed most of his students would produce games that fit the sometimes rigid conventions of their favorite genres. For example, a student might focus on the value of justice in a cops-and-robbers themed shooter, or the value of cooperation in an MMORPG that rewards cooperative combat tactics.

Contrary to Jack's expectations, many of the students chose to work with values that are less commonly reflected in video games, such as dignity and open-mindedness. Furthermore, in his estimation, they did so in ways that thoroughly departed from mainstream conventions. Jack attributed his students' adventurousness in part to the Grow-A-Game exercise. First, through analyzing what made *SotC* innovative, they developed an enthusiasm for innovation in their own work. Second, with respect to innovation in game design, they began to think of human values as a real point of interest. For VAP researchers, this was an encouraging sign as one of our goals is to develop instructional tools that help students make the connection between values-conscious design and innovation (Belman & Flanagan, 2010b).

Case Study 4: Experts using the cards in design (empathy in Layoff)

In 2009, Dr. Flanagan's Tiltfactor Labs released *Layoff* (2009), a game that is structurally similar to *Bejeweled* (Popcap Games, 2007) (and many other "match three" games), but distinct in that it addresses issues related to economic insecurity through its mechanics and representational elements. *Bejeweled*, in its original form, presents the player with an 8x8 grid in which each tile is filled by one of six different kinds of gems. The player switches adjoining gems to create horizontal or vertical sets of three or more identical gems. When sets are created, their component gems disappear and are replaced by new gems falling from the top.

In *Layoff*, the player is "corporate management" and the goal is to cut jobs. The playing board is like *Bejeweled*, except each tile represents a worker instead of a gem. When three or more workers are matched in a set, they drop off the bottom of the grid into an

"unemployment office" and are replaced by new workers who fall from the top. The message is that workers are often treated like parts, easily disposed with, and easily replaced.

When the recent economic crisis began, the idea for *Layoff* had already been conceived, although its design had not yet been finalized. The crisis, which affected the lives of so many people around the world, gave the project a greater immediacy and emotional charge. Our team decided that *Layoff*'s design should be altered so that the game would more sharply focus on the experiences of people who were at risk and suffering in the current economic climate. After brainstorming with the Grow-A-Game cards, the design team settled on empathy as the value that would guide the refocused design process. The new design goal was to encourage empathy towards the workers who are represented in the game (and, of course, their "real world" counterparts).

In the final version of Layoff, each worker has a detailed personal biography that appears on the bottom of the screen when their tile is selected. For example:

> Annick, 42, is an airline flight attendant, working for Trelta for over a decade. Annick was promoted frequently during this span of time. Annick has 5 more years to complete on his current job to enjoy full benefits, but has a hip problem which is not covered under the medical benefits.

Layoff was designed, in part, as a research tool to support our work investigating how players process the values embodied in games. In our research with *Layoff*, we found that there are at least two distinct ways people play the game. Some play as if it were *Bejeweled*, matching tiles without paying much attention to the biographies. But many players read the biographies closely, turning every move into a dilemma. Do I fire Rae the single parent or Kas the depressed divorcee? Obviously, from a business perspective, workers' personal biographies provide little useful insight. Consequently, players who read the biographies usually adopt a more person-focused empathetic perspective, taking a significant amount of time between moves as they weigh the details of workers' personal lives against each other.

Using the Grow-A-Game cards helped the designers progress from a relatively vague and open-ended design goal (i.e. to sensitively represent the experiences of workers affected by the economic crises) to a more specific goal (i.e. to foster empathy towards those workers). More generally, the VAP research team has found that maintaining focus on a single value or set of values during the design process helps to produce games that have greater clarity and impact for the player.

Case Study 5: Students using the cards in design (empathy in Cabbies)

Several instructors who are implementing the VAP curriculum told team researchers that empathy is one of the values students most frequently choose to guide their values-conscious design projects. Probably, this is because the students often design games that address a topical social issue, and empathy is deeply relevant to so many social issues. For example, students working with the VAP curriculum have designed games that are intended to foster empathy towards victims of high school bullying, sexual assault survivors, homeless people, and Inuit people in Alaska whose economic livelihoods and cultural traditions are threatened by offshore drilling.

One undergraduate student, 'Marcus,' wanted to make a game representing the experiences of newly arrived immigrants to New York City who are working as cab drivers. He particularly wanted players to understand how difficult it is for these people to earn a living wage, especially when they are still in the process of learning English. Of the values represented in the Grow-A-Game cards, he felt empathy was most germane to his design goals. In Marcus's own words, a well-designed empathy-focused game might "[put] the player in a position to be more sympathetic towards the person who does not understand English that well instead of saying, you know, Learn English already."

Marcus realized he would not achieve his design goal if empathy was only embodied in the game's narrative. Certainly, it would be easier to design a game in which the empathy-focused elements were relegated to narrative cutscenes. But he knew from his own experience as an avid gamer that players often totally ignore cutscenes, and that they are much more likely to pay attention to content that is embedded in gameplay.

Marcus decided that his game, which he called *Cabbies*, could only succeed if the gameplay forced players to vicariously experience some aspect of the hardships faced by newly immigrated cab drivers. Ultimately, he devised a mechanic that accomplished this in an interesting and innovative way. As he describes in his design document:

> Gamers will have the option of choosing from twenty-five different languages, and giving the player a main language, and a secondary language. By switching the player's main language to Spanish, or Bengali, players will distort their ability to read instructions in English. For example, if a player's main language is Bengali, the instructions a passenger gives him will have words missing. Additionally the player will not be able to use the GPS device if he cannot understand. […] This obstacle will demonstrate how language barriers can cause bad relations with passengers, as well as affect the player's income. If the player does not get to his destination within the time provided, then the passenger will not tip him. If the full time runs out and the player cannot find the location at all, the passenger will get out of his cab cursing, and no pay his fare.

Marcus's primary challenge was to translate the value of empathy into a design feature that fit the gestalt of his game, contributing to its social relevance and persuasive power without detracting from playability (this of course was also a major point of deliberation in the design process for *Layoff*). The nature of this challenge is in keeping two balls in the air so to speak (the first being the value, and the second being the quality of the play experience), and if either drops the project fails. Students who rise to the challenge of values-conscious design projects, as Marcus did, usually find that they have to innovate beyond familiar design patterns and experiment with features that might not be considered in more traditional projects. This can expand their understanding of what constitutes effective game design, and contribute to their development as designers who are more imaginative and less bound by convention.

DISCUSSION

The Grow-A-Game cards have become very popular amongst game designers and game design educators. They have been used in a variety of educational contexts, including graduate and undergraduate courses, K-12 classrooms, afterschool programs, and workshops with professional designers and game scholars. Recently, the team iterated version 2.0 of the cards, producing three specialized versions: one intended for use with

high-school students, the second for university design courses, and the third for expert designers.

In both design and analysis contexts, the cards help participants to explore how values are implicated in design features. An important take-away for participants is that values are "at play" in mechanics as well as in narrative/ representational elements. Games are comparable to other creative media, like literature and film, in that they embody values. However, they are distinct in that they convey meaning in part through the rule-based systems that define their gameplay experiences. This is a crucial insight for designers who wish to deliberately embody specific values in their work.

As demonstrated in the final two cases studies, Grow-A-Game helps designers apply this insight to their work. Specifically, in design contexts, the cards require designers to identify and/or articulate the values that are relevant to their project, and to translate them into mechanics. Designers using this approach are well-positioned to create games in which both mechanics and narrative/ representational elements convey consistent messages to the player.

ENDNOTES

[1] Though it is often claimed in the popular media that violent video games have been proven to cause aggression, in fact social scientists are deeply divided on this issue. For a recent and excellent snapshot of both sides of the debate, see Bushman & Rothstein, 2010 and Ferguson & Kilburn, 2010. A more extreme (yet incessantly repeated) position is that games inculcate violent tendencies to such a degree that they will cause a major breach of peaceful social relations. This position is without scientific support, and is addressed in the Ferguson and Kilburn article.

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