

WHAT GAME MECHANICS DO FOR US

With this essay I want to convince the reader that game mechanics can do more than reward us for training tasks and steer our behavior. First, I will present my view on how game mechanics can be used in serious games to practice skills. I will criticize the method of adding simple extrinsic reward structures onto activities that remain unchanged in other respects. Then, I will argue that there are also game mechanics that encourage players to reflect on (in-game) morals, and that some leisurely games are especially good at this. Finally, I report on my personal experience with a morally notable game.

GAME MECHANICS TO PRACTICE SKILLS

Designing a game to let people practice valuable skills is an idea that has been around for millennia (Deterding et al., 2011). Strategic games such as chess and go, are likely to have military origins. During the Second World War, and subsequently the Cold War, the Allies used mechanical simulations to play operations room games, and used game theory to predict likely and strategic courses of action. In the second half of the 20th century, this idea got traction in education and business (ibid.). This led to the current situation in which serious games exist for a wide range of purposes. The overarching purpose of serious games can be subdivided into "*games to train, educate, and persuade.*" (Deterding, 2012, pp. 14)

The use of game mechanics has, however, expanded beyond serious games. Game mechanics have recently been appearing in activities that previously had little to do with games or play. This is denoted by the term "gamification". As defined by Deterding et al. (2011, pp. 2), gamification is "*the use of game design elements in non-game contexts*". In this expansion of game mechanics into new contexts, there seems to be an emphasis on certain game elements.

Example applications of gamification to an e-learning platform (Khan Academy), in persuading people to recycle (Recyclebank), and in a Q&A forum for programmers (StackOverflow), show an emphasis on extrinsic motivation (Deterding, 2012). They use mechanics such as badges, points, and leaderboards, to persuade their users into 'desirable behavior'. An important criticism of game developers to this kind of gamification, is that these mechanics do not support any playfulness. They only provide a basic feedback mechanism from games, without letting actual play occur. Sometimes, benefits for the users are completely lacking, giving rise to the term "exploitationware" (Ian Bogost, as cited in Deterding, 2012, pp. 14).

This trend in gamification overlooks the importance of intrinsic motivation in play. The fun in playing often arises from self-directed acts. Instrumentalizing an activity, for instance by adding reward structure, can decrease the intrinsic motivation that was previously present (Deterding, 2012). From this flaw in examples of gamification, it follows that also for serious games, training or educational goals, should not be the most obvious purpose to play the game. Rather, the self-directedness of the players should be structured by game mechanics to support both playfulness and learning.

A development approach for serious games that deals with this dual purpose, is 'intrinsic integration'. In this approach, the game mechanics should provide the learning experience, instead of simply rewarding players to learn (Echeverría et al., 2012). Game mechanics should be designed to let players engage with the practice of a skill while they are fully immersed in play. Echeverría et al. (2012) have experimentally evaluated the intrinsic integration approach with an educational physics game, and show that it significantly improved learning outcomes. Furthermore, they found that there was no such difference between a version of the game that included a background story and fantasy aesthetics, and one that featured game mechanics only.

THE GAME MECHANICS OF THE MORAL DILEMMA

While the majority of serious games seem to focus on the learning of skills, or in persuading the players to change their (out-of-game) behavior, leisurely games have known a long tradition of incorporating moral decision-making into the gameplay. Computer games are well-suited to encourage ethical reflection in comparison with other media (Zagal, 2009). It uses the same device as theatre, literature, and film - *drama* - to allow a safe experience of moral situations, but adds to this by asking the player to make decisions which have in-game consequences.

A moral dilemma entails a choice between various actions that all seem morally desirable (or undesirable). This choice is made into a dilemma, because only one of the actions may be performed (Zagal, 2009). This is used as a game mechanic in strategic simulation games, such as SimCity (Societies) and Civilization, by placing constraints on the resources with which the player builds an environment for simulated people to live in. In Civilization for example, a player may have to choose between feeding the people, providing entertainment, or defending them against a foreign army. However, in such games, the player makes moral choices as an impersonal ruler, which may still draw more attention to the gameplay than to moral questions.

Role-playing games (RPGs) seem most suitable for provoking ethical reflection through moral dilemmas. Here, the player should thoroughly identify with the protagonist, whose actions she controls. Combined with a convincing narrative, the RPG provides a sense of personal drama, in which moral decisions actually seem to matter. Zagal (2009) has selected three games that, according to him, successfully encourage ethical reflection: Ultima IV [1984], Manhunt [2003], and Fire Emblem: Radiant Dawn [2007]. From them, he discerns several factors that contribute to ethical reflection. Reframed as commands, the factors are:

Attempt to make the player feel personally invested or responsible for the decisions she makes in the game (Zagal, 2009, pp. 4);

Encode an ethical system and require the player to learn it and follow it in order to succeed (ibid., pp. 5);

Provide players with dilemmas or situations in which their understanding of the ethical system is challenged (ibid., pp. 5);

Create a moral tension between gameplay rewards structure and the motivations of the characters as defined by the narrative (ibid., pp. 6);

Create a moral tension between the player's goals, and those posed by both the narrative and the gameplay (ibid., pp. 7).

However, Zagal (2009) also points out several systematic flaws in games that attempt to encourage ethical reflection, but that do not quite succeed. Moral frameworks should be discernible and consistent. If they are not, they can confuse players and lessen the involvement in the narrative. Secondly, the player should be confronted with the moral dilemmas, and not the character. If the game designers determine which course of action a character will take, the player can remain uninvolved. And finally, the dilemmas that are posed should be experienced as moral. If the consequences of a certain choice can be accurately predicted by the player, the choice will more likely be experienced as a gameplay decision than as a moral dilemma.

DEUS EX: HUMAN REVOLUTION

Although I have referred much to Zagal's analysis of the use of moral dilemmas in leisurely games, it has been my own experience with Deus Ex: Human Revolution¹ [2011] that prompted me to write about this topic. This game is set 15 years in the future, when human augmentation (i.e. voluntary prosthetics) has become a regular sight on the streets. The narrative takes the form of a complex conspiracy, through which the protagonist must maneuver himself. Multiple factions within the game take stances on corporatism, espionage, mass media deception, poverty, survival, and bodily modification. The player is kept in a constant confusion about who the 'good' and the 'bad' guys may be, but must still make choices about with whom to cooperate and whom to oppose throughout the game.

Deus Ex: HR has been very successful in emotionally involving me, and at times I even felt pressured about a decision I had to make. Instead of featuring just one ethical framework, different factions reveal different ways of thinking about morality through dialog. Even before the game was launched, these factions were given substance through advertisement videos^{2,3}. The player is often forced to choose a side, but through well timed dramatic events in the protagonist's story, any alliances that the player makes have to be re-evaluated. The lack of one consistent moral framework is not a flaw in this case, as Zagal might point out, but serves to force the player to come to terms with a morally ambiguous world (Schulzke, 2009).

Particular characters discuss ethics quite explicitly with the player, and these dialogs refer back to moral choices the player has been making. For instance, if the protagonist has been ruthlessly killing corporate guards, but has been kind to the poor, the player is asked why it is justified to kill the powerful. As in many action games, armed opponents can most easily be dealt with by shooting at them. However, in Deus Ex: HR, enemies can also be rendered unconscious, or evaded stealthily. As the protagonist meets people from different factions, the player is confronted with different perspectives on when killing is acceptable. Although it is very challenging, the game can be finished entirely without killing.

Deus Ex: HR has shown me new perspectives on moral issues, especially those of corporate rights and transhumanism. While the game designers have probably been inspired much by actual discussions on these topics, and by films, literature, and comics, the game environment serves to immerse the players in various moral perspectives, instead of merely notifying them of their existence. This approach to ethical reflection, is in stark contrast with the current practice of gamification. I predict that point-based reward systems will become less important for people

¹ Deus Ex: Human Revolution - <http://www.deusex.com/>

² Sarif Industries Testimonials - <http://www.youtube.com/watch?v=2yNLCTiC8II&feature=plcp>

³ Purity First - <http://www.deusex.com/media?start=15#>

as they are more widely applied. Education and training can be seen as forms of practice which can be embedded in game mechanics, in which rewards serve mainly as feedback. But beyond knowledge and skills, it is the mechanic of the moral dilemma that can help us become wiser.

BIBLIOGRAPHY

- Deterding, S. (2012). Gamification: Designing for Motivation. *interactions*, 19(4), 14–17. Retrieved from http://dl.acm.org/ft_gateway.cfm?id=2212877&type=pdf&dwn=1#page=16
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: defining gamification. *Proceedings of the 15th ...* Retrieved from <http://dl.acm.org/citation.cfm?id=2181040>
- Echeverría, A., Barrios, E., Nussbaum, M., Améstica, M., & Leclerc, S. (2012). The atomic intrinsic integration approach: A structured methodology for the design of games for the conceptual understanding of physics. *Computers & Education*, 59(2), 806–816. doi:10.1016/j.compedu.2012.03.025
- Gee, J. P. (2005). Learning by Design: good video games as learning machines. *E-Learning*, 2(1), 5. doi:10.2304/elea.2005.2.1.5
- Schulzke, M. (2009). Moral Decision Making in Fallout. *The International Journal of Computer Game Research*, 9(2). Retrieved from <http://gamestudies.org/0902/articles/schulzke>
- Zagal, J. (2009). Ethically notable videogames: Moral dilemmas and gameplay. *Breaking New Ground: Innovation in Games, Play, ...* Retrieved from http://works.bepress.com/cgi/viewcontent.cgi?article=1002&context=jose_zagal