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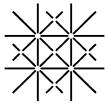
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Approaching Game Enjoyment and Negative Emotions in Games

Author: Daphne Margelli

Immatriculation number: 14-506-584

Correspondence email: d.margelli@unibas.ch

Content

Declaration of scientific integrity

The author hereby declares that she/he has read and fully adhered the <u>Code for Good Practice</u> <u>in Research of the University of Basel</u>.

Abstract

The question being discussed here is why people enjoy games in general and furthermore why sometimes games inducing sadness or fear are enjoyed. Therefore different approaches to Game Enjoyment will be reviewed. Each approach describes Game Enjoyment a little different and also the reasons differ, why certain types of games are played and enjoyed. After general terms have been explained, the focus will move to negative emotions in games, mainly sadness and fear, how they can be created and what players can enjoy about them. After all, it remains unclear what exactly creates Game Enjoyment and why people also enjoy negative emotions in games.

Keywords

Emotion, Enjoyment, Games, Self-Determination Theory, Flow, Four Fun Keys, Character Attachment, Negative Emotion, Sadness, Fear

Introduction

Video Games can be described as virtual places where players can explore and experiment (Schmierbach, Limperos, & Woolley, 2012). They have become a more and more popular leisure activity during the last 40 years (Boyle, Connolly, & Hainey, 2011). The market can be seen as an indicator to show the increased importance of video games, since one of the fastest growing leisure markets is the Video Game Market (Chatfield, 2010). The more, it can be observed that certain Video Games are popular enough that all players collectively have played this particular game for around 50 billion hours, which makes 5.9 million years, and would be enough for a new species to evolve (ESA, 2012). Recently the focus of games as leisure activity has shifted and games are also seen as tools to help with learning, skill acquisition and behaviour change (Sawyer & Smith, 2008). But still the main goal of playing video games is enjoyment (Pagulayan et al., 2002; Nacke & Drachen, 2011).

Researchers did not find a universal definition of enjoyment (Baek & Touati, 2017). Some claim that enjoyment can have physiological, cognitive, and affective components (Davidson, 2003). Since there is no universal definition of enjoyment in general, it is not possible to find a universal definition of specifically Game Enjoyment (Sweetser & Wyeth, 2005). Game Enjoyment sometimes is described as a positive affective state caused by the game, and experienced during the game (Caroux, Isbister, Le Bigot, & Vibert, 2015). Mekler, Bopp, Tuch, & Opwis (2014) for their part define enjoyment as a gaming experience containing cognitive and affective appraisals which could also play a part in supporting the players needs and values.

Even though not clearly defined, Game Enjoyment sometimes is used as a synonym of Flow (Sweetser & Wyeth, 2005). It could be shown that it is not correct to equate enjoyment and Flow (Nakamura & Csikszentmihalyi, 2014). Flow can be described as an intense and

positive experience (Mekler et al., 2014) or as effortless attention (Calvillo-Gámez, Cairns, & Romero, 2012). The definitions of Flow and Game Enjoyment often sound partly similar and sometimes seem to merge, yet some researchers clearly distinguish the two (Nakamura & Csikszentmihalyi, 2014).

In general, with what most researchers can agree, is that Game Enjoyment can be associated with fun, interest, the feelings of competence, control, and the satisfaction of psychological needs (Przybylski, Ryan, & Rigby, 2009; Schmierbach, Xu, Oeldorf-Hirsch, & Dardis, 2012; Schmierbach, Limperos, & Woolley, 2012; Jin, 2012; Reinecke et al., 2012).

Another factor seen as important by some researchers, is that the output of the game follows as soon as possible after the input of the players, to make them feel as the cause of the things happening and to grant the feeling of self-efficacy (Klimmt, 2006). When lowering the feeling of self-efficacy, it is possible to also lower the enjoyment experienced by players (Klimmt, Hartmann, & Frey, 2007). Not only could it be possible to predict the enjoyment of a Video Game with the help of self-efficacy which derives from succeeding in the Video Game (Trepte & Reinecke, 2011), but it could also be possible that the success in the Game is beneficial for mood management and could lead to positive emotional outcomes (Kneer, Knapp, & Elson, 2014).

Simulated Experiences of Life can be seen as an important factor to Enjoyment as well. Simulated Experiences of Life are present in Games in which players undergo a situation they could experience in real life, but for some reasons prefer to have the experience in a virtual world into which they are immersed and feel like an important part of it (Klimmt, 2006). Wirth, Ryffel, Von Pape, & Karnowski (2013) showed in their study that Video Game Enjoyment and simulated experiences of life are significantly linked, with Game Enjoyment rising when simulated experiences of life were gone through.

Self-Determination Theory

Going back to Enjoyment in general, Tamborini, Bowman, Eden, Grizzard, & Organ (2010) established and validated an enjoyment model where they investigated need satisfaction by the three basic needs in Self-Determination Theory: autonomy, competence, and relatedness.

The Self-Determination Theory (SDT) is a meta-theory and is interested in motivation and personality (Herodotou, Kambouri, & Winters, 2014). Different types of motivation like intrinsic and extrinsic motivation are analysed and related to the socio-cognitive development and individual differences of people (Herodotou et al., 2014).

Motivation in general can be seen as consisting mainly of activation and intention (Ryan & Deci, 2000a). Motivation is highly valued in the society since it can produce positive and productive outcomes, and can mobilize others to act (Ryan & Deci, 2000a). People can be motivated because they like a certain activity (intrinsic) or because they feel social pressures put on them (extrinsic) (Ryan & Deci, 2000a). This is the core of the SDT, the distinction between intrinsic and extrinsic motivation at any time given during the actions of a person (Ryan & Deci, 2000a). When comparing people who act self-determined and with an authentic motivation, and people who only perform an action because they feel pressured to do so, the first person, who acts intrinsically, will most certainly show enhanced performance, persistence, and creativity (Deci & Ryan, 1990 ; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997), more self-esteem (Deci & Ryan, 1995), and a higher general well-being (Ryan, Deci, & Grolnick, 1995) than the second person, who acts extrinsically, even when both of them have the same level of perceived competence or self-efficacy (Ryan & Deci, 2000a). Intrinsic motivation can be seen as the reflection of the positive potential humans can behold (Ryan & Deci, 2000a) and is the only type of self-determined motivation (Deci & Ryan, 1985). People driven by intrinsic motivation seek novelty and challenges, use all their capacities, explore

and learn more, since intrinsically motivated people generally show more interest, excitement, and confidence (Ryan & Deci, 2000a). Intrinsic motivation can be seen as a very important factor to social and cognitive development, which might be the principal source of enjoyment and vitality during the lifespan (Csikszentmihalyi & Rathunde, 1993; Ryan, 1995). When trying to explain Game Enjoyment with the means of the SDT, enjoyment can be described as a behaviour emerging from intrinsic motivation, depending on perceived autonomy, competence, and relatedness (Ryan, Rigby, & Przybylski, 2006).

Perceived autonomy, which means being in control, (Ryan et al., 2006) can be achieved by giving the player different answer options when being in a conversation with another character in the game (Peng, Lin, Pfeiffer, & Winn, 2012). Competence means increasing one's skills (Ryan et al., 2006). Relatedness, which describes the perceived development and maintenance of close personal relationships through interaction and the forming of relationships with each other (Ryan et al., 2006), can increase the intrinsic motivation (Staiano, Abraham, & Calvert, 2012). Yet games should also be enjoyable when being played alone (Crutzen, van't Riet, & Short, 2016).

A small theory under the framework of the STD is the subtheory of Basic Psychological Needs (BPNs; Deci & Ryan, 1985; Deci & Ryan, 1990; Ryan & Deci, 2000). It says that the three basic needs of autonomy, competence and relatedness can predict psychological well-being and optimal functioning (Deci & Ryan, 1985, Deci & Ryan, 1990; (Ryan & Deci, 2000b). Relying on the subtheory of the BPNs, Ryan et al. (2006) could show an increased intrinsic motivation in gamers when the psychological needs of gamers were supported.

Going back to the main subject, the SDT and its explanation for Game Enjoyment, the SDT states competence as the most important factor (Ryan & Deci, 2000a). When reviewing Game Enjoyment theories in relation to Health Games, Crutzen et al. (2016) found the same.

Health Games are games helping players to accomplish their goals related to their health (Crutzen et al., 2016). To Crutzen et al. (2016), three factors seemed to be of importance when trying to explain enjoyment: competence, narrative transportation, and relevance.

Narrative transportation is described as a process where players are mentally transported into the world of the game and feel like they were living inside of the game for the time playing, and forget about their real environment (Green & Brock, 2000). This phenomenon can also be described as immersion. The narrative transportation leads to increased attention, mental imagery, empathy, and emotion (Crutzen et al., 2016). Other researchers as well found narrative transportation to be an important factor of enjoyment (Schneider, Lang, Shin, & Bradley, 2004). When narrative transportation is used in Health Games, Crutzen et al. (2016) suggest that the relevance of these games to players can be increased, and therefore heighten efforts of players concerning the achievements of goals related to their health. Disbelief should be reduced as well as counterarguments against a proposed behaviour (Lu, Baranowski, Thompson, & Buday, 2012). The relevance of the game to the players is believed to be able to be increased by self-identification with the game character (Hefner, Klimmt, & Vorderer, 2007). In general, game characters already are important in a narrative, but when they are similar to the player in ethnicity, the immersion can be heightened even more (Lu, Baranowski, et al., 2012; Lu, Thompson, Baranowski, Buday, & Baranowski, 2012). The identification with a character that seems similar or appealing to the player allows the change of the self-concept since the character then can be seen as another version of oneself or as an extension of the players' self (Hefner et al., 2007). It also gives the options to players to identify with their characters, to act in a way that pleases their ideal self or the way they would want to be (Przybylski, Weinstein, Murayama, Lynch, & Ryan, 2012). The SDT is interested in intrinsic motivation and sees it as a component of Game Enjoyment, and when players are able to act like their ideal self in a game, they should be more intrinsically motivated (Przybylski et al., 2012).

The Flow Theory

Another theory treating Game Enjoyment is the theory of Flow. Flow in general consists of 8 components: Clarity of goals and immediate feedback, a high level of concentration on a limited field, balance between skills and challenge, the feeling of control, effortlessness, an altered perception of time, the melting together of action and consciousness, and the autotelic quality of flow-experiences (Csikszentmihalyi, 1997).

Clarity of goals and immediate feedback means that it is known what is needed to achieve something since the rules are clear, and that success or failure can be perceived immediately (Csikszentmihalyi, 1997). High level of concentration on a limited field describes a persons' ability to focus only on one particular subject even though their daily life may be stressful or distracting (Csikszentmihalyi, 1997). Balance between skills and challenge means that a task has the right degree of difficulty for a person since it is not too challenging and not too easy and therefore corresponds very good with the persons' abilities (Csikszentmihalyi, 1997). The feeling of control in the Flow Theory is a state of security and relaxation with the absence of worry and the persons' feeling of control over performed actions (Csikszentmihalyi, 1997). Effortlessness describes the harmony and easiness with which actions should be able to be carried out (Csikszentmihalyi, 1997). Altered perception of time means a persons' feeling of time being condensed or expanded (Csikszentmihalyi, 1997). The melting together of action and consciousness describes the feeling of being one with the performance and not feeling worry, fear, or distraction since the only feeling that should be experienced is the feeling of unity (Csikszentmihalyi, 1997). The autotelic quality of flow-experiences implements that not only the achievement of a goal is seen as fulfilling, but that the activity itself is a reward (Csikszentmihalyi, 1997). Flow therefore can be seen as Immediate Return on Investment (IROI) (Csikszentmihalyi, 1997).

Schmierbach, Chung, Wu, & Kim (2014) conducted a study based on the theory of Flow to examine Game Enjoyment. In their description, Flow consists of the factors of positive mental status, enjoyment, control over the environment, greater intrinsic motivation, rise of difficulty when making progress in the game while the players' skills rise as well, and losing oneself in the activity of playing a game, therefore being one with the game and losing track of time (Csikszentmihalyi, 1997); Sherry, 2004; Mellecker, Lyons, & Baranowski, 2013; (Mekler et al., 2014)). Some game designers think Flow to be the main source of fun in games (Koster, 2005).

In their study, Schmierbach et al. (2014) found two factors to be important for the enjoyment of a game: Competency and the challenge-skill balance. It was found that the players' performance could be another factor of enjoyment (Trepte & Reinecke, 2011). The better the players performed, which means the higher the perceived competence was, the higher was the reported enjoyment. For experiencing the factor of competency, the balance of challenge and skill is important. When the game is too hard, the enjoyment is lowered, players feel less competent, and their challenge-skill balance is lowered (Schmierbach et al., 2014).

Through perceived competence, which can be achieved by feedback and rewards, the motivation to continue playing a certain game and the enjoyment of it can be increased (Lyons, 2015; Lyons et al., 2014). For example reported experienced shooter players the game as being more enjoyable when it was easier rather than when it was harder (Klimmt, Rizzo, Vorderer, Koch, & Fischer, 2009). So even for experienced players the challenge should not be made too hard to not make them lose the feeling of competence.

The Four Fun Keys Model

Both of the theories above did not include the role emotions could play in game enjoyment. To cover this aspect as well, the Four Fun Keys Model will be introduced here.

Emotions can be seen as the most essential part to entertainment (Lazzaro, 2009). Even a game without a story can produce strong emotions since emotions are created by the interaction of the player with the game itself (Lazzaro, 2009).

Players will be most efficient when getting strong emotional responses after completing a challenging task and therefore feeling the will to explore and learn more about the game, which makes them more efficient (Lazzaro, 2009). It can be seen as important to support the skill-building in a game and encourage the players to continue once they failed (Lazzaro, 2009). After achieving a goal, players should be able to give themselves credit for what they achieved. This can be possible when the players experience enough freedom to act how they want inside the game and therefore feel self-efficacy (Lazzaro, 2009).

While players are able to produce emotions, emotions can influence how players play (Lazzaro, 2009). When playing, players can be led either along or counter the game goal by their emotions (Lazzaro, 2009). Emotions direct effort and attention towards the game, can help to focus on the game, and can provide motivation and reward (Lazzaro, 2009). Emotions can facilitate learning when the emotions provided by the game match the emotions experienced by the player which improves performance, and the learning of new skills (Lazzaro, 2009). When well designed, the emotions elicited by the game should help the player complete the task in the game, since the decisions players make are influenced by emotions (Lazzaro, 2009).

Negative affect can be used when players should narrow down the effort in other subjects and focus only on the current task (Norman, 2004), for example after the tragic loss of a Non-Player-Character (NPC), players should focus only on revenge. Positive affect often makes players explore new alternatives, be relaxed, let their creativity bloom and tolerate minor difficulties more easily (Norman, 2004). The interplay between positive and negative affect is perceived as refreshing and interesting, and helps to keep players motivated (Lazzaro,

2009). Another positive aspect of negative affect can be that creativity and problem solving is increased, for example is it possible that after a failure players will try to approach the problem in a different way the next time they play the game (Lazzaro, 2009).

After having done multiple years of research and studies, Nicole Lazzaro developed the Four Fun Keys Model (Lazzaro, 2004). She mainly focussed on the role of emotions in games, how specific emotions can be created, how the interest of a player can be maintained, how he makes his decisions and how he learns (Lazzaro, 2009). The model consists of four different types of fun that can be experienced by players (Lazzaro, 2004).

Lazzaro (2004) wanted to identify emotions that come from gameplay and not from the story. She found that mostly games seem to be played for the experiences created by the game, for example an adrenaline rush, a mental challenge, or the possibility to escape the real world (Lazzaro, 2004). Games can be played when in real life people lack skills, resources, or social permission to do the things they want and therefore they at least want to experience these things in the virtual world (Lazzaro, 2004). Almost all participants in Lazzaro's study (2004) reported to have enjoyed feeling challenged and immersed. The games had calming and exiting aspects and sometimes were seen as therapeutic since they could help to relax after a hard day or build self-esteem, since people could experience something they were good at while playing (Lazzaro, 2004).

According to Lazzaro, neither a story nor a character is needed in a game to produce emotions and enjoyment, as can be seen in her Four Fun Keys Model, consisting of the Four Keys of Hard Fun, Easy Fun, Serious Fun, and People Fun (Lazzaro, 2004). Every Key unlocks other emotions, and in her experience a game has to contain at least three of the Keys to be a good game since the inclusion of different Keys allows players to switch between the different types of fun provided by the keys to refresh, motivate, and interest them (Lazzaro, 2009).

Hard Fun. The first of the Four Fun Keys is the Key of Hard Fun. Hard Fun provides obstacles that have to be overcome to reach a goal (Lazzaro, 2004). Mastering the challenge creates enjoyment and fiero, which describes the personal triumph over adversity (Lazzaro, 2004), and often the mastery is rewarded by some kind of level up which makes Hard Fun mostly self-motivating (Lazzaro, 2009). Emotions frequently created by the Key of Hard Fun are frustration, boredom, and fiero (Lazzaro, 2009). Good games containing Hard Fun mostly offer different strategies that can be used to reach the goal, as well as a choice of different goals that can be accomplished by the player (Lazzaro, 2009). Not only creating and testing strategies can be enjoyed by players, also the whole learning process players go through when learning how to win can be seen as enjoyable (Lazzaro, 2009). Often in games, the levels gradually become more difficult and also the difficulty inside of the levels increases with an especially hard challenge at the end of the level, which once more produces fiero (Lazzaro, 2009). The beginning of the next level often is easier than the end of the last level to let players get a feeling of emotional relief and relaxation (Lazzaro, 2009).When inducing emotions counter to what is needed to achieve a goal, the game can be made more difficult and more interesting (Lazzaro, 2009). When players fail, the negative affect of their frustration can increase their focus and concentration which players can experience as enjoyable (Norman, 2004).

Easy Fun. The second Key is Easy Fun, also called Immersion Key (Lazzaro, 2004). It mainly uses curiosity to retain the player's attention (Lazzaro, 2009). Easy Fun is mostly self-motivating since players only play games for the fun itself and not for any other purpose (Lazzaro, 2009). Easy Fun keeps the player interested through novelties, role play, exploration, goals, or scores (Lazzaro, 2009). The positive affect created by Easy Fun heightens creativity and exploration of alternatives (Norman, 2004), and unexpected events prevent disinterest (Lazzaro, 2009). The emotions created by this key are curiosity, surprise, wonder, and awe (Lazzaro, 2009). In contrast to Hard Fun, less effort is needed to be put into

the game and there does not have to be a clear goal or a challenge (Lazzaro, 2009). Players can go around without keeping score or trying to reach any goal since the activities are open-ended, yet still rewarding since sometimes games provide details that can only be seen when exploring more of the virtual world than is necessary to merely complete the tasks (Lazzaro, 2009). When a challenge in a game gets too hard for a player, he is likely to lose interest and therefore Easy Fun can be used to provide players with other things they can do in the game to create emotional responses or refresh the players between or in the middle of challenges when they are overwhelmed by the challenge provided by the game (Lazzaro, 2009). Like this they feel relieved from the challenge (Lazzaro, 2009). Even though distracting from the main goal, Easy Fun often is able to reinterest players in this particular goal which means that Easy Fun can be an important tool to keep players motivated to finish a challenge (Lazzaro, 2009).

Serious Fun. The third Key is Serious Fun. This factor can also be called Internal Experience Key or "Altered States" (Lazzaro, 2004). People enjoying this type of fun are playing with a purpose (Lazzaro, 2009). They want to change or improve something in their lives, for example how they think, feel, or behave, and want to see long-lasting effects (Lazzaro, 2009). Games containing Serious Fun focus the attention on activities that are good for players even outside of the game, to help them accomplish real-world issues, for example can a Serious Game help to lose weight (Lazzaro, 2009). Since players want to see changes in their lives they often motivate themselves to continue playing (Lazzaro, 2009). Like in Easy Fun, immersion is more important than challenge (Lazzaro, 2009). Serious Fun relaxes or excites players as they wish, since changing their internal state, their habits, or improve their self-esteem while playing the game can be the goal of the players (Lazzaro, 2009). Some players view playing the game as some sort of therapy that is able to release certain stressors (Lazzaro, 2009; Lazzaro, 2004). Other motives to play games containing Serious Fun can be that players want to be less bored, learn new vocabulary, or improve their physical or mental fitness through exercise (Lazzaro, 2009).

People Fun. The last Key to Fun is People Fun which describes fun that comes from or encourages social interaction (Lazzaro, 2009). The experience of playing games with other people creates amusement, Schadenfreude (German for "'pleasure at the misfortune of a rival", Ekman, 2007), Naches (Yiddish for the pleasure and pride felt when a child or mentee succeeds, Lazzaro, 2009), establishes social hierarchies, jokes, and develops social bonds (Lazzaro, 2009). Sometimes the games played in groups are not liked by all the group members, yet even the people not liking the game play it, since their enjoyment of the time spent with friends, the People Fun, is often greater than the disliking of the game itself (Lazzaro, 2004). The most emotions are produced when the people which play a game together are present in the same room because then people are able to interact with each other additionally to what the game already is providing (Lazzaro, 2009). In such groups even negative events can produce laughter, with mostly the laugh being one of Schadenfreude which cannot be experienced when playing alone (Lazzaro, 2009). Since not all players want to compete against their friends, in most games they can team up together and fight the computer (Lazzaro, 2009).

Conclusion of the Model. According to Lazzaros studies, emotions are the most important factor in enjoyment and in games since emotions influence the frequency and the reasons of the use of the game (Lazzaro, 2009). The Four Fun Keys cover a wide range of emotions experienced by players with examining the specific emotions arising from the different types of fun, and as well treat subjects such as challenge, exploration, and self-esteem (Lazzaro, 2009).

Character Attachment

Yet there are some subjects which are not covered by the Four Fun Keys Model, which focusses on games without storyline since it stresses that emotions and enjoyment can be experienced even when no character and therefore no character attachment is involved. In

their review, Crutzen et al. (2016) found relevance, to which character attachment is essential, to be an important factor for enjoyment. Players should feel close to their virtual character, which helps heighten the immersion and should make the actions of the virtual character almost as important to players as if they were their own actions (Crutzen et al., 2016). Therefore character attachment should not be underestimated. In Bopp, Mekler, & Opwis' (2016) study, participants themselves reported character attachment as a root of strong emotions since during the game they bonded with the game characters. Some participants even reported that towards the end they almost saw the characters as real life people and losing these characters in the course of the game may actually increase the connection between the player and the character (Bopp et al., 2016).

To ensure relevance and character attachment, virtual characters should be interesting and need varied behaviour since repetitive behaviour is experienced as boring (Poznanski & Thagard, 2005). The human-like virtual characters can be called Believable Agents (Trappl & Petta, 1997) or NPCs (Bopp, 2016). One way to make virtual characters more human-like is the SPOT (Simulating Personality Over Time) model of Poznanski and Thagard (2005) where they want to create virtual characters that change their behaviour over time depending on the input situations given to them. A base of this model are the Big Five (Paunonen, 2003). According to the SPOT, ideally the behaviour displayed by the virtual character should be due to personality traits, emotions, and the situation (Poznanski & Thagard, 2005).

Negative Emotions in Games

While trying to explain enjoyment, there is one blind spot that most researchers do not cover in their approaches to enjoyment: negative emotions and the enjoyment of negative emotions.

Researchers mostly focus on positive emotions in games and leave out the field of negative emotions. As well in the SDT, the theory of Flow, and the Four Fun Keys, negative emotions mostly are not mentioned and not taken into account. If game designers did the same, it would lead to a very restricted spectrum of emotions which can be experienced in games (Birk, Iacovides, Johnson, & Mandryk, 2015;Marsh & Costello, 2012). No deep and thoughtful experiences could be made in games (Marsh & Costello, 2013). Mostly games are thought to be designed only to be fun (Lazzaro, 2004). But it can also be seen as pleasurable if failure and frustration are experienced (Lazzaro, 2004). The main enjoyment about frustration and failure seems to be that they can be overcome by the players (Endress, 2016). When games trigger negative emotions, the option is left to the player to think about difficult or unpleasant issues that otherwise the player would not think about (Iacovides & Cox, 2015). By doing so, the prosocial behaviour of players might be stimulated (Steinemann, Mekler, & Opwis, 2015). Players confronted with in-game loss sometimes interrupted the game to reflect on the game events that happened and tried to find out what they would have done if this was a real life situation, or they remembered personal memories of similar events (Bopp et al., 2016). After playing games inducing negative emotions, some players wanted to change the way they acted in real life up until now, or wanted to change or achieve something else in their life (Bopp et al., 2016). In games, players can experience feelings that in the everyday life have to be kept hidden (Bopp et al., 2016). Some players felt relieved to being able to experience and express those feelings, which can have a positive effect on players and can be seen as enjoyable (Bopp et al., 2016; Deterding, 2015; Jansz, 2005). This almost therapeutic effect that games can have was also described in the Key of Serious Fun in the Four Fun Keys Model (Lazzaro, 2004). Although sadness was the most reported reaction after an in-game loss, players still enjoyed the game and the emotional movement coming from it (Bopp et al., 2016). The experience of emotions itself was enjoyed, with sadness being the most valued since sadness could positively predict appreciation and enjoyment, whereas positive affects

only predicted enjoyment, and meaningful affect only predicted appreciation (Bopp et al., 2016).

But although sadness seems to be a very valued emotion by players, it remains unclear why games inducing sadness are being played, since players do not declare sadness as the main reason why they choose to play a certain game, even though they state to be seeking sadness as an experience, which may sounds contradictory (Bopp, 2016).

Some games, for example Crying Games which nowadays are very popular in Japan, are especially designed to make the players sad and are also advertised exactly like that (Bopp, 2016). Those games are not limited to a genre, yet mostly are designed as Visual Novels (Bopp, 2016). Visual Novels usually rely heavy on the conversation of the player with the different characters (Cavallaro, 2009). The interactivity is granted through decision and dialogue options players can choose from (Bopp, 2016). Often the choices made by the player influences the game and therefore the ending of the story (Cavallaro, 2009). This means that players are made responsible for their choices and actions in the game which can produce feelings of guilt or sadness in the players (Bopp et al., 2016). Sometimes however, the interactivity of the game is removed and the player cannot influence the things happening in the game (Bopp, 2016). This absence of the player as an actor in the game, when a NPC would need him but the player is incapable to help, can draw the player even more into the game (Bopp, 2016).

Yuuichi Suzumoto is a scenario writer of famous Crying Games and wrote a book about how to design narratives for Visual Novel Games (Suzumoto, 2006). To him, the contrast of the happy life before and the depressed life after the tragic loss of the NPC is of the utter most importance. The grief at the suffering or death of the NPC is what makes players cry, since players do not cry because of the tragic event itself but because of the

memories the player has of the happy life spent with the NPC before the tragic event, and because of realizing how much the NPC means to him (Suzumoto, 2006).

When experiencing this kind of in-game loss, players often reflect about issues of significance in their own life after playing, which they can perceive as enjoyable (Bopp et al., 2016; (Bopp, Mekler, & Opwis, 2015). They also feel that the games taught them important life lessons (Famitsu, 2011).

But not only sadness is an important emotion experienced and looked out for by players. Games inducing fear, for example Survival Games, also get more popular nowadays (Endress, 2016). Fear and tension seem to be feelings that people feel themselves drawn towards when choosing a game to play, and the possibility of confronting themselves with emotional challenges and overcoming them seems to be enjoyed (Endress, 2016). In such games it can also be seen how people would react to certain threats in real life since peoples' initial response to a threat should stay the same whether the threat is in a mediated or in a real life situation (Reeves & Nass, 1996).

To achieve a sense of fear, game designers mostly use fragments like darkness, disturbing imagery and eerie noises (Noles, 2011). When asking participants, Lynch and Martins (2015) found that indeed the most fear-inducing stimuli were darkness, disfigured humans, zombies, unknown things, and being surprised. The fear of zombies could emerge from our general aversion to disease and corpses (Curtis & Biran, 2001). Sensory deprivation seems to cause fear and discomfort as well because in such cases people lack their capacity to identify threats properly (Öhman, 2005). Another aspect is the interchange between the feeling of being in control or losing it due to removed interactivity which can be an important factor to the fear experience (Lynch & Martins, 2015). Often in horror-themed games not only the players' character owns agency, which is a sense of interactivity, autonomy, and presence experienced by players, but also the NPCs sometimes seem to have their own agency, which

means players does not have any control over the actions of such a character (Madsen, 2016). In some cases the NPCs with their own agency threaten the players' agency which is thought to induce fear (Kirkland, 2009; Perron, 2009).

A possible explanation for people enjoying frightening games could be sensation-seeking, since a positive correlation was found between sensation-seeking and enjoyment of arousing films (Harris et al., 2000; Johnston, 1995; Schierman & Rowland, 1985) and games (Kremar & Greene, 1999).

It was shown that people low in sensation-seeking avoid fear-inducing media (Schierman & Rowland, 1985) while people high in sensation-seeking tend to show more curiosity about morbid events (Zuckerman & Litle, 1986). Less fright and surprise was shown by people with more experience with first-person-shooter games, which could mean that the experiences a person has already had with this type of games could be important for the strength of the reaction (Madsen, 2016).

A strong correlation was shown between emotional reactions to media and empathy (Harris et al., 2000; Johnston, 1995; Tamborini, 1996). The more empathic a person is, the less a horror movie will be enjoyed (Tamborini, Stiff, & Heidel, 1990) because they feel with the people in the movies who are in averse situations (Davis, Hull, Young, & Warren, 1987). Interactivity can help to let players feel more like the character (Anderson & Dill, 2000) and therefore feel more empathic.

Cole et al. (2015) speak of an emotional challenge which dominates the experience of fear-inducing games. According to this, a good gaming experience comes from the relief of tension, or the identification with the characters (Cole et al., 2015). Fear-inducing games can provide players with the opportunity to safely explore situations that are emotionally challenging and involve negative and unpleasant emotions (Endress, 2016). After challenging and frightening situations, the participants in Endress' study (2016) felt tired and sometimes

even needed to take a break to cope with the emotional challenge. The most frequent reaction reported after a frightening experience was a hyper-awareness of strange sounds (Lynch & Martins, 2015).

Researchers concerned with fright experiences are often focussed on the sex of a person (Harris et al., 2000; Johnston, 1995; Zillmann, Weaver, Mundorf, & Aust, 1986). Interestingly, there seemed to be no difference in how frequently the different sexes experienced fear (Lynch & Martins, 2015). Yet males were found to be more prone to enjoying frightening media than females (Hoffner & Levine, 2005). Maybe this is because society rewards men for seeking frightening situations and prove themselves to be brave, while women are rewarded for avoiding danger and showing their fear (Zillmann & Weaver, 1996).

Discussion

The topic being treated here is enjoyment in games. It is not clear what exactly defines or creates enjoyment in general and therefore it is even harder to define enjoyment in games. Therefore, different approaches to Game Enjoyment were being looked at.

In the SDT, autonomy, competence, and relatedness seem to be important for the creation of enjoyment in games (Crutzen et al., 2016). In the theory of Flow, competency and challenge-skill balance are named as important factors (Schmierbach et al., 2014). The Four Fun Keys model states that a game is perceived as enjoyable when at least three of the four keys are involved (Lazzaro, 2004; Lazzaro 2009). Furthermore there is the factor of character attachment which to some researchers is important but others see it as irrelevant to create a good game, since for example the Four Fun Keys model claims to be able to create a good game without storyline, characters, or character attachment (Lazzaro, 2009).

An important factor which needs mentioning are negative emotions. In games also negative and not only positive emotions can be experienced and sometimes even are enjoyed by the players.

Most approaches to game enjoyment only shortly mention the enjoyment that can be experienced when playing games inducing negative emotions, or do not mention negative emotions at all. Contrary to the neglect of negative emotions by researchers, game designers often know how important it can be to include negative emotions (Suzumoto, 2006). They are needed for example when producing Crying Games or Survival Games.

The most important factor in all theories investigated in this paper is competence. In the review of Crutzen et al. (2016) and the SDT in general, this factor is already called competence while in Schmierbach et al.'s (2014) study which is based on the theory of Flow it is called competency. The other factor in Schmierbach et al.'s (2014) study is the challenge-skill balance. The two factors in this study seem to be connected since the challenge-skill balance could be seen as an indicator for competency (Schmierbach et al., 2014). Therefore it seems not completely clear why they chose these two, as confounding perceived factors in their study. With both of the factors in the study of Schmierbach et al. (2014) treating competence, competence is given an even more important position as a factor in explaining Game Enjoyment.

Besides the balance of skill and challenge, which is a part in the theory of Flow, there exist the factors clarity of goal and immediate feedback, and feeling of control (Csikszentmihalyi, 1997). These two factors could be seen as factors of self-efficacy since they stress the feeling of control a person should experience and the immediate feedback that should follow their actions. Transferred to games this could also be understood as factors of competence, since self-efficacy seems to be very close to competence. Hard Fun, from the Four Fun Keys model, also seems to be linked to the concept of competence, since in Hard

Fun the balance of frustration and achievements made by players are important and this balance may remind of the factor competence (Lazzaro, 2009). In Serious Fun on the other hand, competence could be important to let players feel that they have a real chance to achieve their goals.

Yet the most important factor to Game Enjoyment in the Four Fun Keys model is emotion (Lazzaro, 2004). Through the Four Fun Keys emotions can be created although no character attachment is involved (Lazzaro, 2009). Hard Fun can create the emotions frustration, boredom, and fiero, since in games containing Hard Fun the challenges provided are important and when those challenges are too hard it could be that frustration and boredom occur, since the players are not able to achieve the goal of the game. When they could finally overcome the obstacles and achieve the goal, the emotion of fiero can be created, which can only be experienced after the overcoming of a difficult situation (Lazzaro, 2009).

Two special emotions besides fiero that are mentioned in the Four Fun Keys are Schadenfreude and Naches (Lazzaro, 2009). These emotions seem to be often exclusive to multiplayer games (Lazzaro, 2009). It could be important for game designers to take into account that to induce certain emotions, it might be mandatory or at least useful to include multiplayer modes.

The emotions that can be created by Easy Fun are curiosity, surprise, wonder, and awe, and contrary to Hard Fun, Easy Fun should not rely on the achievement of any goals (Lazzaro, 2009). No challenges should be needed, as long as novelties are provided to keep players interested and surprise them (Lazzaro, 2009). Seeking novelty and exploring details sounds very much like the intrinsic motivation from the SDT (Herodotou et al., 2014). Players wanting to experience Easy Fun often play only for the fun of playing and not for any purpose, therefore the games containing Easy Fun do not need to serve a goal as long as they contain interesting details and surprises (Lazzaro, 2009). The open-ended games are enjoyed

even though players are not achieving a certain goal and are not keeping score (Lazzaro, 2009). That players still enjoy this type of game could be explained with the IROI of the theory of Flow, the immediate return on investment (Csikszentmihalyi, 1997). The factor of autotelic quality of flow-experiences of the theory of flow in which the IROI is of utter most importance states that not only the achievement of a goal but the activity itself that is needed to achieve a goal can be seen as a reward (Csikszentmihalyi, 1997). Maybe this can also be applied when talking about Game Enjoyment and not only about enjoyment in general since with the IROI the enjoyment of Easy Fun could be partly explained.

When talking about Serious Fun, the IROI most certainly does not apply. People play games containing Serious Fun primarily to achieve their goals and might be less interested in the actual fun the games provide as long as they achieve their goals and see long-lasting effects (Lazzaro, 2009). Sometimes when negative emotions were being experienced in a game, people think about their way of being and desire a change of life (Bopp et al., 2016) and therefore they could use games containing Serious Fun to achieve such goals. The emotions created by Serious Fun cannot be described as easily as in the other three keys of the model. It is not clear which emotions are created by this key since players might play these games with the purpose to change their internal state in a certain way. Therefore it should be the choice of the players, which emotions they choose to experience with this key.

Even though players have a wide range of emotions to choose from when a game uses all keys of the Four Fun Keys model, it is possible that the emotions are deeper when character attachment is involved or that in general the emotions experienced are different ones. Even Lazzaro herself (2009) says that games with detailed storyline increase players' engagement.

In Crutzen et al.'s (2016) review, character attachment is being treated in the form of narrative transportation which seems to be the core of immersion. The factor of altered

perception of time in the theory of flow seems to be connected to the concept of immersion as well since it states that people are being drawn into the game so much that they lose track of time (Csikszentmihalyi, 1997). Immersion seems to be linked to character attachment (Crutzen et al., 2016). In sadness inducing games, character attachment to the NPC and the loss of the NPC, which is only perceived as heartbreaking when the players bonded to the NPC, what only happens when enough character attachment is existing, is the main factor to let people break into tears (Suzumoto, 2006). Such a strong emotional reaction was not reported in the Four Fun Keys model and it does not seem clear whether such emotions can be achieved with it or not.

A negative emotion that clearly can be experienced in the Four Fun Keys is frustration. Frustration and failure can make players try different strategies the next time they play (Lazzaro, 2009), and heighten focus and concentration (Norman, 2004). Therefore even negative emotions can have positive effects on players (Norman, 2004). Yet it seems unclear whether the emotion of frustration itself is enjoyed or only the outcome of making players try again and try different strategies.

When speaking of negative emotions, fear has to be mentioned as well. Endress (2016) showed that most certainly people are playing survival games to experience fear and horror in a safe context.

This only makes sense, because it can be hypothesized that most people would not really want to be in a horror game where they experience such high levels of fear and where they are being chased and sometimes murdered. Yet something about this experience seems to be fascinating to some people and it would be interesting to know what exactly it is that drives them towards wanting to know what it feels like to constantly having to fear for one's life. Maybe it is because most people in western European countries playing Video Games were born and always lived in a safe environment where they did not have to fear war or other

serious life threatening events. Maybe it is a need to humans or at least to some humans to experience such threats, and when they are not experienced in real life they can at least be experienced in the virtual world and therefore their need is satisfied.

Another interesting question would be, why Crying Games are booming in Japan while around here there cannot be found much of them. Therefore it could be interesting to investigate cultural differences and their consequences.

After having heard different approaches to Game Enjoyment and the characteristics that should be possessed by a good game, the question how a game should be created to be a good game still is not answered. Yet there can be made some propositions as to how the creation of a good game probably could be achieved.

When creating a game, the Four Fun Keys model might be seen as a good base. Enjoyment and emotions can be created without story of character attachment, yet can be intensified when those components are added (Lazzaro, 2009). When creating a story, it seems to be a good choice to use the techniques Suzumoto (2006) is using when developing stories for his games. Like this, players will have access to more emotions that can be enjoyed since negative emotions can be experienced as well. Having expanded the range of emotions, the players will hopefully bond to the NPC and therefore create character attachment. When having achieved this, it is easier to create the feelings of immersion and relatedness, as described in Crutzen et al.'s (2016) review. Self-efficacy should be granted in the game to give room to the perceived autonomy which for example is seen as important in the SDT (Herodotou et al., 2014). Ultimately the factor competence which is seen as important by all approaches introduced above should be taken into account, and when the challenge-skill balance is given, one might just have created a best selling game.

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