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A series of 50 responses regarding reasons for cheating behavior in video games were provided by undergraduate students. These responses were sorted into a series of 13 categories by raters to investigate the most common reasons provided for cheating.   An analysis of inter-rater agreement as well as frequency of category representation is provided. The most common outcomes were that players cheat to progress in a game as well as to gain advantage over others. The discussion compared this study's results to an existing cheating taxonomy.

INTRODUCTION

People are spending more time and money gaming. Virtual environments have become a significant role in many people's daily lives (Anderson, Funk, Griffiths, 2004; Hellström, Nilsson, Leppert & Åslund, 2012). A recent study shows that people view their virtual property and identities as real as physical property and as genuine extensions of themselves (Odom, Zimmerman, & Forlizzi, 2011). As virtual worlds expand and their numbers of citizens increase, issues surrounding behavior in game play is becoming more relevant. Nearly all online games have end user agreements delineating to some extent what is allowable in their virtual environment. Beyond what is legally acceptable, unwritten expectations are held by developers and gamers of what right and proper gameplay entails. Gaming environments often have rules, codes, or social norms that do not parallel life outside the game and share no legal or moral counterparts. Furthermore, ethical behavior is not usually defined in video games. What is defined is the technological prevention of cheating the developers programmed into the game (Yan & Randell, 2005). However, players within these virtual realms have created their own guidelines for what is proper game play and what violates the unofficial standard (Hamlen & Gage, 2011). Much of psychology is dedicated to why people deviate from social norms and condoned behavior in the physical world. In face-to-face interactions, cheating is regarded as a serious matter, especially if money is involved (Kimppa & Bissett,

2005). The bulk of psychological game research has focused on whether or not negative aggressive behavior can be learned and transferred to other aspects of life (Anderson, Gentile, & Dill, 2012). Until recently, very little has been done to find out why people cheat or commit deviant acts in virtual gaming (e.g., Consalvo, 2009). Most research focusing on cheating is concentrated on definitions of cheating. This paper will discuss why people decide to engage in cheating and contribute to taxonomies of cheating behaviors in games.

Before discussing why people engage in cheating behaviors, a brief overview of what the behaviors are must be given. Cheating is a blanket term that includes many different practices. The definition of cheating in games varies between individuals and even between developers. "Cheating" may be anything from superficially manipulating the game to breaching the game's rules. For example, turning on paintball mode by using cheat codes would be a superficial manipulation that does not alter gameplay. Breaching the rules involves anything that is expressly disallowed by the developers. The use of automatic aiming algorithms or "aimbots" in first-person shooter games is cheating because it violates the user agreement created by the developers (Kuecklich, 2004). This is most often discussed in terms of multiplayer game play because it directly affects other players in the environment. For example, a mode that makes one player invincible so that other players may not harm them clearly hampers or restricts the play of other players. In general "cheating" is when a player takes control of the game experience by using resources outside of one's self rather than playing

by the rules (Consalvo, 2005; Consalvo, 2009; Kuecklich, 2004).

However, there are also examples of players taking control of the game experience by using resources outside of one's self that are generally accepted in gameplay, though it may fall under the definition of cheating. Examples of taking control of the game experience by outside supplementation include the use of consultation game guides, walkthroughs, online information resources, cheat codes, and macros. Some players reject the idea that all of these are "cheating" since game guides and cheat codes are often supplied by the developer and these do not break the rules of that game. In this case, codes built into the game or guides provided by the developer could be viewed as a form of handicapping or a way for the players to temporarily adjust the difficulty of the game (Kücklich, 2007).

Despite these disagreements in definitions of what constitutes cheating, most players agree that there is a difference in the level of cheating in single-player games and multiplayer modes. In the case of the single player, employing a cheat to either superficially alter the game or to gain an advantage in play is only "cheating" the individual. In this case, all that is lost is surprise or satisfaction by accomplishing something the way the developers intended. In the multiplayer mode, whenever a player employs a tactic that gives an advantage in play over the others or alters the intended format of play, there is general consensus that this is an unacceptable form of cheating (Consalvo, 2005; Kimppa & Bissett, 2005; Kuecklich, 2004).

So, if there are acceptable forms of cheating and unacceptable forms of cheating, it raises the issue of how to categorize these different forms of cheating. Consalvo (2009) argues that there are four primary reasons of why players cheat: That they're stuck, that they want to play God, they want to be a jerk, or that they are bored with the game. In the first category, for example, if a player can no longer make progress in the game due to poor game design or the player has limited ability, they may want to avoid or remove the barrier that prevents them from continuing in the game. In the second category, the player wants to play God to either maximize abilities or extend the boundaries of gameplay beyond what is typically possible, such as obtaining a mode that gives the player unlimited ammunition against non-player opponents (which is not provided under that game's conventional gameplay). However, Consalvo is clear in stating that this method is just to extend gameplay for the player. It is not intended to interfere with others. Being a jerk and interfering with other players to the player's benefit is the third category of

reasons why people cheat. In this category, players want to overwhelm their opposition intentionally. For example, this might involve a way to cheat to become invincible so that the opposition cannot kill the player while the reverse is not true. The final category in which the player is bored, involves using a cheat to accelerate play to the conclusion in a game without putting in the time simply because they want to see the payoff at the end without investing the time.

While these four categories may envelop a large proportion of reasons why players cheat, having such broad categories might suggest that some of the nuances of the rationale for player cheating are lost. Similarly, there may be other reasons that are not clear in this system, such as when a player cheats so that they do not look bad in front of their peers. The present study explored this wider array of rationales for cheating behaviors.

METHODS

Three groups of participants were asked to progress through an iOS-based (i.e., iPad) puzzle game called "100 Floors" in which advancement was based on solving some visual challenge at each stage. The 69 participants, primarily undergraduate students, all began at the first floor and were tasked to advance as far as possible in the game in 30 minutes. The participants were split into three groups with different opportunities to advance with the aid of solutions ("cheats"). The first group was a control group that did not have access to cheats to advance. The second group was an additive group where both extra credit toward a class and available cheats to aid the player in advancing added incrementally as participants completed levels. The third group was a subtractive group where each participant had a total of 10 cheats to use from the start of the experiment but use of a cheat deducted from the total possible class extra credit.

At the end of the study, after participants had advanced as far as they were able, they were asked "If you have cheated in the past, give three examples of why you cheated." A total of 50 examples were provided by the participants.

RESULTS

The 50 responses provided by players were sorted into a set of 12 categories by seven expert raters. Raters were not trained on response classification but all had knowledge of human factors and psychological research methods. Raters were encouraged to categorize the

responses into the categories specified but could identify additional categories as necessary. The sorting of responses was performed by each rater individually. Only one additional category was identified by the raters during the course of the exercise. Categories are identified in Table 1.

Fleiss' kappa (Fleiss, 1971) was performed on the ratings to investigate the inter-rater agreement between multiple raters. Fleiss' kappa was 0.55, indicating moderate agreement amongst the raters (Landis & Koch, 1977). More specifically, of the 50 responses, 24% of them (12/50) were categorized unanimously across all raters. Another 22% of the responses (11/50) were categorized into the same category by 6 out of the 7 raters. An additional 22% of the responses (11/50) were categorized into the same category by 5 of the 7 raters. That left 32% of the responses (16/50) with only 3 or 4 raters agreeing upon classifying responses into the same category. No response classifications were agreed upon by fewer than 3 raters. Since the category placement for the majority of the responses (34/68%) were agreed upon by five or more raters, the frequency of category placement focuses on those 34 responses with the greatest agreement. Table 1 provides the number of raw responses that fell into each category as classified.

Table 1.
Frequency of cheating responses per category.

Category	Frequency
Address a technical issue	1
Gain advantage over others	6
Keep up appearances/gain status	4
To help others	1
To advance toward completion in a game (progress)	7
To complete a game (completion)	1
For more efficient play (but not for advantage)	2
To have fun/enjoyment (not at expense of others)	0
Emotional reason (e.g. angry, happy, sad, frustrated)	4
To access a game/avoid financial cost	2
Gain resources in a game	4
Other	2
Counter others cheating/everyone does it	0
Total:	34

DISCUSSION

As might be expected, most of the reasons for cheating fell across all categories, with some reasons appearing with far less frequency than others. The most common reasons identified for cheating behavior occurred in cases in which players cheated when they were stuck in the game ("to progress") or to gain advantage over others in a game. This might easily be expected as these two reasons are methods that might be used by players to ensure a greater chance of winning at a game. This rationale might also be corroborated by one of the next most common categories ("gain resources in a game") which would also enable players to have a greater chance of winning. However, the next two most frequent categories are not directly applicable to the game but are instead based in emotional reasons (i.e., "keep up appearances" and "emotional reasons") In this case these are motivations based on external factors of the game that may be a result of social pressures within the game. However, based on the way in which the original question was worded it is not clear if these responses were based on cheating behaviors within a social context in which keeping up appearances is valuable (i.e., multi-player games), or if it is based on individual desires. It has been argued that cheating behaviors for individual play may be different than multi-player games (e.g. Consalvo, 2005) and this distinction should be made clearer in the way in which the question is asked of participants in the future.

It should be noted that there were two responses that were classified into the "Other" category. One of the two responses by the participants was to list the name of a game as their reason for cheating. This is an example of not enough information from the participant for raters to categorize the response or possibly an example of raters classifying the response in the catch-all category if they are not familiar with the game or reasons why the players might cheat in that specific game. The other response that fell into this category was "It is just a game." This may have been a better fit for the additional category suggested by one reviewer of "everyone does it" that was not provided to all the reviewers and should perhaps be a category to be included in any following studies.

Tying these results back to the four Consalvo categories (2009), it is clear that there is a great deal of agreement. The top reason provided, "To advance toward completion in a game", is a clear match to Consalvo's "stuck" category. The next most common response, "Gain advantage over others" matches Consalvo's "jerk" category.   However, there are other common responses such as "Keeping up appearances" and "Emotional reasons" (other than boredom) that may not have a clear fit within Consalvo's categories, suggesting that perhaps there are certain responses not

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captured by the four categories. Less frequent responses such as "Address a technical issue", "To access a game", and "To help others" might also indicate other missing rationales from the categories that that are not used very often but are still valid, such as when a player uses a cheat to access a game because they would be unable to play the game without that ability. Additionally, one of the other most common responses of "gaining resources in a game" identifies a case that could fit within Consalvo's "God" category or "jerk" category depending on the intention of the player in obtaining those resources and suggests that further refinement is necessary.

One criticism of the analysis may be that raters were not trained and this point may easily account for the 32% of the data in which agreement amongst raters was low. However, it should be noted that overall agreement was still moderate despite the large number of categories which would suppress likelihood of agreement. Additionally, despite the lack of training, raters still had unanimous agreement in category selection for over one quarter of all the responses, likely due to wording of the responses and match of category titles.

Overall, these results may suggest that there are multiple reasons for cheating that may not be recognized by current coding systems but are recognized and used by players, which means that more extensive analysis for these reasons might be profitable for understanding cheating player behavior in the future.

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