Cheating in
Candy Crush Saga

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Keywords

Candy Crush Saga, Cheating, Freemium, Free-to-play, in-app purchases, micro-transactions, mobile games, casual games.

Abstract

The rise of social casual mobile games has been in tandem with the rise of the 'freemium' business model, where games are free-to-play but feature premium content or advantages at a small cost. Candy Crush Saga is one of the most successful freemium games of all time, with an estimated annual revenue over $US1.8 billion dollars. However, many players (some estimate over 50%) are vehemently opposed to making *any* in-game purchases. In this chapter we report our research that found many players consider these legal purchases as forms of cheating, and unpack the consequences of these sentiments for game design.

'Freemium' describes an economic model for digital software that involves a free basic service, with premium content available for customers that choose to pay. Freemium games are thus 'free-to-play', and have grown enormously popular in tandem with the emergence of 'casual' games popular on non-dedicated mobile gaming platforms (such as iOS or Android devices) and social network sites (such as Facebook). A December 2012 survey estimated that revenue from free mobile and computer games has surpassed revenue from paid titles in the United States (Amano, 2013).

Candy Crush Saga is one of the most commercially successful freemium games, being free-to-play while offering purchases of in-game 'lives' and advantages at a relatively low cost (ranging between $US0.99 and $US2.99 on the iOS version). This allows players to immediately restore their limited number of lives and continue playing, or get help at advancing past a level that is particularly difficult. It is not possible to simply pay to advance past a level, but this monetization strategy still gives players an advantage in comparison to players who do not wish to pay. The game was released in 2012 for Facebook and mobile devices (iOS and Android). By March 2013, *Candy Crush Saga* had surpassed Zynga's *Farmville 2* as the most popular game on Facebook, and has been estimated at making between $1 million and $3 million from in-app purchases *per day* (Shanley, 2013). With over 100 million active daily players (Dredge, 2013), *Candy Crush Saga* is the most popular single game in the world.

In this chapter we discuss results from a series of interviews with *Candy Crush* players that revealed that many players consider these in-game purchases – crucial to the commercial success of this game and many others in its genre – to be a form of cheating. We thus contribute to this volume a critique of this business model driven not from ethical criticisms, but as a payment system configured in conflict with player motivations.

Cheating

Before discussing *Candy Crush Saga* and our results, we briefly overview some earlier attempts to conceptualize the phenomenon of cheating. This is to later use them as theoretical lenses for understanding why players may consider in-game purchases cheating.

In her aptly named book, *Cheating* (2007), Mia Consalvo argues that, while understood from a structuralist perspective (e.g., Suits, 1978) as a transgressive and non-playful act, cheating (loosely defined in multiplayer games as '*gaining an unfair advantage*', such as hacking the game to make your character stronger) is inherently playful and reflects the nature of digital games as spaces for experimentation. She leaves this definition open to facilitate understanding the dynamic cultural and social character of cheating in multiplayer online games. Similarly, Jonas Smith (2004, p. 5) sees cheating as an "*altogether social construction*"; as a form of 'extra-mechanical conflict' similar to griefing and other local norm violations, rather than a game-breaking act.

Through the lens of *Neopets* (Powell & Williams, 1999), Delia Dumitrica (2011, pp. 21-22) instead understands cheating as the product of a culture "*embedded in and*

recommended by the structure" of the neo-liberal capitalistic discourse of many modern online gaming environments. Darryl Woodford (2013), drawing on examples from the online gambling industry, subsequently argues for the conceptualizing some forms of cheating as (lawful) '*advantage play*', in order to 'loosen up' the regulation of online environments. He defines advantage play as play "*in which the player is able to turn the mechanics of the environment to their advantage without breaching the rules of the environment*", and argues that the key contribution of such a concept is to extend our conceptualisation of play acts beyond a clear dichotomy of legal/illegal. This is not dissimilar to 'cheese' in Warhammer 40,000 (see Harrop, Gibbs, & Carter, 2013) which is considered 'fair play' by competitive players.

Grounded in their investigation of 'botting' in the massively multiplayer online game (MMOG) *Tibia*, De Paoli and Kerr (De Paoli & Kerr, 2009, 2010) instead approach cheating as a socio-technical process and attempt to go beyond defining cheating as that which provides unfair advantage. They argue that doing so limits theoretical and empirical investigations; cheating should be understood through the concept of assemblage (De Landa, 2005, 2006) in order to focus on the inter-relational dynamics of games. Through a theoretical analysis of MMOGs as assemblage, they argue that cheating is an *imbroglio*, "*the entanglement – as interrelation – of different elements, whose purpose is to obtain a successful trick as result*" (2010), and argue for understanding cheating as more than just a violation of rules.

Distinct from these approaches, and detached from a rule-based definition, Carter *et al.* (2014) consider cheating one of the moral, "*stylistic resources*" available to players in their negotiation of what play is acceptable in multiplayer games. Developed through an analysis of match-throwing, bribery and espionage in *EVE Online*'s eSport (see also, Carter *et al.* 2013), they emphasize how the definitions and boundaries of the concept of cheating to players are "*shaped by the local contingencies of the moment*" (Carter *et al.*, 2014), drawn on as a resource in including or excluding certain types of play from the sphere of acceptable activities in games. They note how players draw upon different conflicting and competing definitions of cheating, "*defining and redefining it to encompass* [or not encompass] *the play*" (Carter *et al.*, 2014). In the discussion, we will argue that this conceptualization, as a rhetorical resource to delineate unacceptable play, is most appropriate for understanding player's reference to *Candy Crush's* monetization as a form of cheating.

Research Design

As a result of its unparalleled success, criticisms of its business model, and the comparative lack of academic attention casual games have received, we set out to study the player experience *Candy Crush Saga*. This research draws upon 9, 20-45 minute, semi-structured interviews with *Candy Crush* players, with interviews coded and analyzed with practices congruent with grounded theory (Glauser & Strauss, 1978). Participants in *Candy Crush Saga*'s largest demographic – 18-35 year old women – were specifically sought, as they are typically under-represented in studies of players. In addition, time was spent reviewing online discussions of *Candy Crush Saga*. Our

research in this study is also informed by an auto-ethnographic approach (see Linderoth, Björk & Olsson, 2012) as the authors of this paper have spent significant time playing *Candy Crush Saga* – collectively completing over 500 levels (Carter 200, Björk, 356) but having spent no money on in-game purchases.

In approaching the attitudes towards what constitutes cheating in *Candy Crush*, we attempted to avoid *a piori* judgements about the value, ethics or morality of *Candy Crush*'s design and monetization practices, as it is player perceptions of these (rather than a supposed objective 'evilness') that we seek to identify and understand.

Candy Crush Saga

Figure 1 *Bejeweled* (Left) and *Candy Crush Saga* (right)

Released in 2012, *Candy Crush Saga* extends earlier tile-matching games like *Bejeweled* with a progression system, Facebook integration, limited 'lives' and increasing difficulty over time. The player earns points by switching a piece of candy with an adjacent candy piece to match a minimum of three similar candy pieces together which are then removed from the board. The game offers two primary modes for play; *timed*, where the player can make as many moves as possible until a timer reaches zero and *limited moves*, where the player has to reach a particular goal within a limited number of switches. Combining 4 or 5 tiles in a single move unlocks more powerful pieces of candy, such as the 'freckle', which when combined with a piece of candy destroys all pieces of candy of that colour on the board. Often (with a little luck), as candies fall in to replace those removed, a single move can cascade into a chain of satisfying and visually spectacular explosions.[1]

When completing the goal of a level (e.g. get 20,000 points), the user receives 1-3 stars for their performance and unlocks the next level which has a slightly different, incrementally harder challenge. As the user progresses through levels, additional modes and candy types are unlocked. When integrated through Facebook, a user's progression is shared across the platforms they use to play. Through combining these

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[1] This tenant of *Candy Crush Saga's* design is strikingly similar to another enormously popular casual, mobile game; *Angry Birds*, where Brendan Keogh notes a single input can (with a little luck) be amplified "*into a massive spectacle of destruction*" (Keogh, 2014, p. 9). This facet of *Candy Crush Saga's* gameplay was noted by many of our participants as part of the game's appeal.

new level types and different candy, *Candy Crush* offers an increasingly difficult and varied player experience.

Figure 2 Levels in Candy Crush   **Figure 3** Level 395 in Candy Crush

Increasing the difficulty of *Candy Crush* is the limited number of lives a player has. When they fail a level, the user loses a 'life' which they regain following a 25 minute timer. As the player can only have a maximum of 6 lives at any time, play is prevented from occurring in long uninterrupted sessions. The game (on mobile devices) can be configured to notify the user when a new life becomes available. This type of wholly artificial limitation, not implemented for multiplayer balance or justified in the in-game narrative, is one of the most common monetization practices in freemium games.

Monetizing Candy Crush

Candy Crush Saga implements a number of different design patterns (Björk & Holopainen, 2004) which are then modified for monetization. The most prominent of these is made possible as a result of players having limited Lives[2]; players are able to pay the small sum of $US0.99 for 5 extra lives immediately. As games of *Candy Crush Saga* typically last for only a few minutes, such purchases can be made frequently, creating the possibility of players losing track of how much money they're spending while playing the game. It is in fact very difficult to track the amount of money spent on *Candy Crush* (and app-games in general), something which both Apple and Google have received considerable criticism for (see Sarkar, 2014). We do not want to suggest that artificial limits on lives are themselves a dark design pattern - defined by Zagal *et al.* (2013) as a design pattern "*used intentionally by a game creator to cause negative experiences for players which are against their best interests and likely to happen without their consent.* (2013, p. 7). However, combining this feature with monetary design patterns such as Pay-To-Skip, Playing By Appointment, and Social Pyramid Scheme, *Candy Crush* creates the possibility for it to meet the criteria of a dark design pattern.

The maximum number of Lives is also monetized; players can make a onetime $US16.99 payment to permanently increase the maximum number of available lives from 5 to 8. Games on the Apple mobile application store are normally priced at around $US0.99-$5, with very few games retailing in excess of $US10. Consequently,

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[2] We follow the precedence by Lankoski (2010) in indicating patterns through the use of Small Caps.

this freemium tactic would be categorised as dark by Zagal *et al*.'s (2013) criteria as players are not aware of how much money they will have to spend in order to achieve their goals in the game. Making this one-time purchase gives players 8 uninterrupted play sessions every three and a half hours, a permanent advantage over others. Indeed, the psychology of this purchase is in stark contrast to purchasing a finite number of lives, which are immediately consumed, compared to increasing the number of lives permanently.

While those monetization strategies offer the opportunity to play, the second category of monetization is through in-game advantage. Players are able to buy 'power-ups' which can be stored and used at any time such as the finite ability to turn pieces of candy into more powerful candy ($US1.99), or a lollipop hammer ($US1.99) which can destroy any individual candy. Other forms of these boosters are extra moves and extra time, advantages that can help a user progress through a difficult level.

Notable is the fact that the user is unable, through any monetary or social-capital based design, to skip a level. The in-game purchases only allow players advantage in completing a level, but do not guarantee the level will be complete even if the user spends $US10 of boosters. This absence features prominently in online discussions.

Cheating at Candy Crush

In our research, we found two distinct types of play that players felt were a form of cheating. Firstly, there were technical cheats; using a third-party program during web-browser play or altering the system time on a mobile device to trick the application into thinking enough time had passed so lives regenerated. The second surprising category of research that emerged was in-game purchases as a form of cheating; buying extra lives or in-game advantages. In this section we present the results of our interviews with *Candy Crush* players and explore the boundaries of what players consider cheating in *Candy Crush Saga*.

Technical Cheats

There are two types of technical exploits defined as cheats by our participants. The first is, when playing on iOS devices, to change the system clock. Doing so tricks the *Candy Crush* application into thinking that time has passed and consequently, lives are regenerated immediately. A simple google search of 'Candy Crush free lives' or 'Candy Crush cheats' brings up numerous sites (some malware) that encourage users to do this cheat, but warn it affects other applications (such as calendars, alarms and email). This latter consequence was enough for participant Ash[3] (29, M) to avoid this cheat; "*I normally don't do that because ... if you just change everything in other applications like email or whatever it is not a good idea*".

With the exception of Ariana (21, F) (who did not want to be told what the possible cheats were, lest it ruin her ongoing *Candy Crush* experience) all our participants had no objection to this form of cheating. Jenny (25, F) suggested that "*cheating to get*

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[3] All participants in this study have been assigned and are referred to by unique pseudonyms.

extra lives is fine, because I still have to complete the task, you know what I mean?"; the extra lives only subverted control over access to the game, rather than the in-game challenge. Participant Brock (31, M) similarly separated the two;

> Brock: *It doesn't help you finish the level, it just gives you the chance to play the game again, so in that sense I probably wouldn't have a problem cheating the candy crush empire out of another dollar; I probably wouldn't really care!*

This was a sentiment we also saw expressed online, with Kotaku's Mike Fahey suggesting this exploit "*isn't cheating, it's time travel*" (Fahey, 2013). So despite it circumventing the coded rules of the game, it wasn't cheating because it did not affect *Candy Crush* play directly.

Notably, we found that knowing of this cheat had negative consequences. Jenny, a PhD student, explained that when she had to wait for lives to respawn Candy Crush better integrated with her daily life:

> Jenny: *it was really good because I would have to mark 2 essays and then I got another life. It was a good sort of reward system for myself but now I've discovered how to get unlimited lives and it's become more of a negative influence.*

Rather than the limited lives simply causing frustration that player's might attempt to overcome by paying $US0.99, it meant that *Candy Crush* better integrated with player's lives. Erika (25, F) who we interviewed after she had deleted the *Candy Crush* app from her phone for consuming too much of her time and attention was also glad she didn't know about this exploit beforehand; "*I probably would have just played for hours*".

The second type of technical exploit was third-party software that *Candy Crush* players can install on their computers, affording unlimited lives or unlimited in-game power-ups. Only Ash (29, M) had ever used these tools, but his use reflected the attitudes of other player's towards monetization. Ash was a player who had begun playing with his friends overseas, and had integrated *Candy Crush* with Facebook so that they could compete and compare their progress. After he told us about his use of third party programs, which he concealed from these friends, I asked why he installed this software:

> Ash: *I guess maybe it's the frustrating experience oh and you get sometimes there is one or two steps to finish that you can't, then you end up failed and you feel bad and, and, as a computer scientist you know how the computer works and I guess yeah you lets you think about there must be something to bypass this thing so I start searching and if you enter it in google you will find it.*
>
> *And back to the question why I didn't pay and how is it fair to our friends and my answer is; they choose to pay I choose to use those tools. So it's kind of the same.*
>
> Researcher: *So yours is just the thrifty, the cheap option*

> Ash: *yeah*

This justification of using a technical exploit worked to categorize purchasing in-game advantages as a form of cheating. Ash, who had refused to pay, felt that his friends were cheating by making in-game purchases of power-ups. Like Consalvo's (2007) definition of cheating as gaining an unfair advantage, to Ash, paying money was also an unfair advantage, a fact he used to justify his own use of technical exploits.

In-Game Purchases as Cheating

Of our participants who had paid, none had bought power-ups. I asked Jessie (25, F), who had spent approximately $25 on extra lives while playing *Candy Crush*, why she had never bought them:

> Jessie: *um, well firstly because I thought it was like a waste of money, a bit like cheating, you know? Um, and you know, it would be better if I could say* [to my friends] *that I'd never used power ups because it's quite difficult to do that.*

Similarly, after asking Jenny (25, F) who hadn't paid any money in *Candy Crush*, why not just pay a dollar to progress past a "*frustrating*" level she had been stuck on for a long time, she argued "*because then I won't have completed the challenge. It feels like cheating.*" We later questioned how it was cheating:

> Jenny: *I just feel like I haven't, I feel like it would be like taking the soft option to get through the task and I wouldn't get the same level of satisfaction out of it which is the whole reason I play.*

What these justifications come down to is the motivation a player has to play *Candy Crush*. Both Jessie and Jenny played *Candy Crush* as a break from other work, as an engaging and challenging puzzle to spend a small amount of time briefly solving which purchasing power-ups disrupts.

Near the start of our interview when the interviewer asked Brock if he had ever been tempted to cheat at *Candy Crush*, he immediately assumed we were referring to those legitimately purchased power-ups. He similarly felt that using power-ups took away the appeal of playing; "*just taking a magic toy that gets me through the next level and then I'm like, what did I even do then? What was the point of that? The challenge is gone, the puzzle is just gone.*" To Ash, the player who used the third-party cheat programs, the motivation was different; to compete against his friends and advance through the game, and consequently his attitude towards cheats was different. This aside, all these players still felt that purchases of power-ups was cheating in some form. James (61, M) even expressed this attitude towards any type of purchase:

> James: *within the household it's definitely not on to pay ... and among their* [his children] *friends who play, it's considered cheating. if you did do it you'd never talk about it!*

These quotes have demonstrated the findings from our research that some players consider in-app micro-transactions a form of cheating. In particular, those purchases that afforded an advantage within the game were considered to give players an unfair advantage in competitive play, and otherwise take away from the purpose of playing and thus the enjoyment of the game. We also saw this categorization as justification for using complex technical cheats, such as third party programs. More simple exploits, such as those that afforded unlimited lives, were still considered cheating but were less denigrated; principally because they had no effect on the game-play. Unsurprisingly, these then appeared to be the most common form of in-game purchase made by our participants.

Discussion and Conclusion

Though accurate data is unavailable, it is typically cited that 10% of the players who play 'freemium' games account for 50% of the revenue (Rigney, 2012; Dredge, 2011). A more recent Swrve report (2014) suggested that only 49% of players make any purchases at all. Those making multiple purchases (totalling over $US20) contributing the lions-share of revenue are colloquially referred to by developers as 'whales'. Discounting the revenues from in-game advertising, this presents an astonishing conundrum for the social, casual, mobile genre which typically relies on the freemium model: why don't over half of players pay at all? Indeed, as the freemium economy has increased, users in the Apple and Android app stores are increasingly less likely to make out-right purchases (Kulyk, 2012) in the face of a flooded market of (ostensibly) free games.

It is thus of some significant importance that many players of *Candy Crush*, currently the most successful social, casual, mobile game consider these in-app purchases – fundamental to its business model – a form of cheating. Obviously with its recent IPO valuing the company at $US7.6 billion (Carey, 2014), with a reported $US1.8 billion in revenue (Villapaz, 2014), many feel payment is an acceptable way to circumvent in-game challenge, but much more could be made if these feelings of cheating could be reduced.

As noted earlier, cheating has been thoroughly explored in game studies. Structuralists (e.g., Suits, 1978) sought to define cheating as a violation of a game's formal and definable boundaries, but others claim such boundaries do not exist. For example, Consalvo (2007) defined it as playful, reflecting the nature of game spaces as places for experimentation and creative play. We see this common definition having significant rhetorical weight in this study; fair, for *Candy Crush* players is unaltered, and the appeal of the puzzle-based game is in beating the challenges fairly. However, this does not explain the categorization of in-game purchases as a form of cheating, as power-ups 'earned' (rather than bought) through gameplay are considered legitimate play.

The circumstances in which we saw the purchase of in-game advantages as acceptable were when the focus of the play was not on the challenge of an individual level, but the challenge of advancing through the game's progression mode. In these circumstances, purchasing an in-game advantage to bypass a particularly hard or challenging level was a more acceptable, but still to many, a form of cheating, as it cheapened the challenge of getting to high levels.

We noted in our research another challenge to *Candy Crush's* monetization which reflected the significantly low percentage of players making in-app purchases. While cheating in the form of gaining unlimited lives was attractive to some, as it allowed them to play on their own terms (only "*cheating the candy crush empire*"), some felt learning this cheat had diminished their experience of the game. Rather, they recognized that the limitation of playing was part of its appeal; a reward for waiting 25 minutes to play (perhaps having worked on a hard task in the interim) or as a formalized limit to reduce the impact of *Candy Crush's* "*addictiveness*". To those with enough self-restraint or aversion to paying money, not paying saw the game more successfully and positively integrate with their daily lives.

Thus here, like in Carter *et al.* (2014) we attempt not to rely on a definition of cheating; it is not that it is an unfair advantage that in-game power-ups are cheating (earned power-ups are not thought of as cheating). Similarly, they are not a trick (De Paoli & Kerr, 2010); no deception or deceit has occurred with power-ups, and they are most certainly not a violation of the game's formal rules. The categorization of in-app purchases in this context as a form of cheating is best understood as an attempt by players to denigrate the practice as unacceptable because it does not align with their motivations to play; to pass time, as a break from work, overcome a challenge, solve a puzzle or to relax. In order to achieve these aims the game and challenge must be fair, unaltered, and achieved within the game rather than through demonstrations of economic power. Rather than drawing from a specific definition of cheating, the concept is simply being used as a moral resource to devalue this type of play, a devaluation of sincere concern to those who employ this business model. 'Freemium' games should offer players the opportunity to enhance their experience in accordance with their motivations to play and enjoyment drawn, or making in-app purchases will remain a socially hidden – and thus less successful – business model.

Author Pre-Print: Carter, M., & Björk, S. (2016). Cheating in candy crush saga. In M. Wilson & T. Leaver (Eds.) *Social, casual and mobile games: the changing gaming landscape*, pp 261-74. Bloomsbury.

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