Grand Theft Algorithm:

Purposeful Play, Appropriated Play and Aberrant Players

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ABSTRACT

This paper explores ideas about 'appropriated play' within computer games. It identifies different forms of 'purposeful' and 'aberrant' playing and proposes a model of players' motivations. This will enable a discussion about the experience of games players who resist the norms of 'purposeful' or ludic play, while finding reward in their explorations of game possibilities. It provides a new vocabulary for discussing playing outside of the game world, as a way of understanding some of these actions as more than 'cheating'.

1. INTRODUCTION

> *"An algorithm is the key to the game experience…As the player proceeds through the game, she gradually discovers the rules that operate in the universe constructed by this game. She learns its hidden logic – in short, it's algorithm"*.[1]

By playing a videogame, the player strives to get to the next level, complete missions, obtain high scores, and master the game's world exposed to them. They are trying to learn and understand 'the algorithm', through the act of playing the game. This is 'purposeful play' in that the system opens up and rewards for mastery with high scores, the satisfaction of completion, etc. 'Purposeful play' runs through tutorials that show the player how to move in the gamespace. It is found in the off-screen manuals that define the goals, present back-stories and offer the instructions for the strategic operation of physical controllers. It persists in the feedback loops of failed missions and retrying times. 'Purposeful play' is about playing within the rules, and in many ways constitutes Caillois' category of 'ludus'.

The interplay of algorithms, the actions of players, image and sonic assets, define a particular instance of the game. While algorithms in theory define a set of more or less precise 'playable' syntagms from within an extensive paradigm of game possibilities, the presence of bugs, programmer's hidden code and shortcuts for testing, deliberately included cheats and coding strategies to permit modification, and the willful inventiveness of human players, effectively mean that many game syntagms are in fact fuzzy at the edges, making the paradigm more extensive than it initially appears.

This extended 'algorithm' of the game may include features that rest outside the needs or requirements of 'purposeful play'. Some of these may frustrate play, while others may augment, extend or enhance it under certain conditions. Their discovery shifts the emphasis of play from the ludic to the paidic (Caillois[2]), and players appropriate the game's world to their own ends. Play shifts from the 'purposeful' to the 'appropriated', a new form of play developed by the 'aberrant player', trying to decode the algorithm in new ways, to add further syntagms to the existing game paradigm.

2. PURPOSEFUL PLAY

> *"The act of playing is very close to exploring…"*[3]

On entering Huizinga's 'magic circle'[4] of the game world, we are submitting ourselves to the rules of the virtual space, the way in which we are allowed to up, down, left, right in order to move through it, the press button X

actions to pick up objects, and learn the mechanics and rules of the world ('the algorithm'). Many games now guide us through the initial learning curve of the game world through tutorial levels, or handy hints as we progress through the game. Each successful understanding of a combo-action, way of jumping/running, or picking up an object, rewards us with a friendly text message on screen, the score count increasing, or a new level unlocked awaiting our next challenge. These signs, deliberately installed within the game system, show the player that they are on the right path to succeeding/failing at the game and are experiencing the 'purposeful play' of the game. Even at this stage the aberrant player may start to discover fortuitous alternatives, in recognizing further signs for 'appropriated play', which will be discussed in more depth later.

Goals and feedback in 'purposeful play' are frequently linked through tutorials at the start of the game. These can sometimes be preliminary levels to games, such as the first level of *Katamari Damacy*[5]. During this pre-level, the user is given the controls of the game, completing moves using various control-combos in order to progress to the first real level of the game. There are no scores in the preliminary level, only text based reward. It is designed as a graphically uncomplicated version of subsequent levels, to act as a guide for what the player may come to expect of the rest of the game. Players are shown how to pick up items, how to move forward and backwards, turn quickly, etc in order to grow their katamari and break through into subsequent levels on the rest of the game. The level expands as new control feedback loops are grasped, acting as a teaser for the timed, score-reward version of the game to come. Feedback loops familiarize the player with the 'purposeful play' syntagm, they reveal what is expected of them, what constitutes the 'norm' of the game.

Just as there are reward signs, there are 'fail' signs too, such as character life deterioration through missing heart icons, or the loss of points, with the score counter decreasing, and coins spilling out in the game world to be hurriedly re-collected. The game starts again, the learning process continues. These reward/failure feedback loops are about normalizing the 'algorithm', and closing down the possibilities of legitimate play whilst experiencing the 'purposeful play' syntagms of the game paradigm. These signs expose the rules of play, lessening the chances of discovering opportunities for aberrant play, and reducing the chance of the discovery of further syntagms.

Both of these feedback loops permeate the syntagm of playing within the rules. This constitutes Caillois' category of 'ludus', representing, "…rule-bound, regulated, formalized play".[2] The purposeful player is content to stick to the rules of the game's world as revealed to them, to beat their high scores, to solve the hidden puzzles, unlock the next level, and complete the game. They only see the one syntagm within the greater game paradigm. They feel no need for further exploration, or discovery of further syntagms, the pre-defined game world is enough to satisfy their experience.

Although discussing videogames vs. interactive movies, Bernard Perron, identifies three character types, that of the 'gamer', the 'player' and the 'gameplayer', which draw on some similarities of the 'purposeful' and 'aberrant' players in this discussion. Perron classifies the 'Gamer', someone who is "…bound to the rules and limits of the game universe and of the gameplay".[6] Although I would argue that all players are bound by the rules and limits of the game universe, but it is how they seek to explore the 'alogrithm' and its limits further that turns them into different types of players, the actions of being bound to the rules and limits of *gameplay* exist in 'purposeful play'.

During 'purposeful' play, a player may start to exist in a state of 'flow', defined by Csikzentmihalyi, as "the way people describe their state of mind when consciousness is harmoniously ordered, and they want to pursue whatever they are doing for its own sake".[7] Although not originally developed as a theory for the videogame experience, Salen and Zimmerman[8] and Juul[9], argue that the concept of 'Flow' can be used as one way of understanding the player's experience within videogames. This 'state of flow' is constructed through the player being neither too anxious nor too bored within the game they are playing. For the time it is occurring, the player is immersed within the game world. Their quotidian reality fades into the background until the player decides to end the game, or encounters a level of difficulty above that which they have mastered and they leave or lose the

state of flow. "Flow" brings "a creative feeling of transporting the person into a new reality"[7] and may be understood as an act of discovery that shares characteristics with Caillois' 'paidia'[2].

Not every player of every game will reach a 'state of flow', or once having reached it continues to attain it, and a player may feel that there is more to be discovered about the games world and its syntagm of purposeful play, than is immediately apparent..

3. APPROPRIATED PLAY

"The act of playing is very close to exploring and redefining existing boundaries."[3]

When instead of seeing one syntagm of the rules/goals within the game paradigm, the player starts to recognise other signs of further syntagms within the game to explore, moving away from 'purposeful' or 'ludic' play to a form of exploration which, initially at least, is 'paidic'. This is what I mean by 'appropriated play', the act of discovery and exploration of the 'algorithm', trying to find more than the designed rules of the purposefully played game. Caillois defines paidia as, "wild, free-form improvisational play"[2], and can be seen as a way of thinking about 'appropriated play'

Playing a videogame can lead to the fortuitous discovery of other aspects of the game's world. During 'purposeful play', fortuitous discovery of elements outside of the immediate game syntagm is an intrusion. They are usually discarded or ignored by the player as they continue on their mission. These discoveries are more than likely to cause annoyance or be seen as a trap by the 'purposeful player'. 'Appropriated play' on the other hand strives for these fortuitous discoveries. They are seen as an opportunity for further exploration of the system by the 'appropriated players'.

Players starting to move into the realm of 'appropriated play' are what I will term, 'aberrant players', those seeking to decode the game paradigm in different ways to those that play purposefully. Some of these players may decide to disrupt the game, turning the algorithms on itself and bringing the social logic of the game to a halt. These players I define as 'disruptive aberrant players'. For them 'purposeful' play has become 'perverse play' as they seek to disrupt the state of the game inappropriately by implementing the rules perfectly. It may be that this only happens within social game scenarios as it can be seen as an act of 'showing off'. This is comparable to Salen and Zimmerman's player type of the 'spoil sport', who acts as "…a player that refuses to acknowledge the authority of a game in any way. These nihilistic players do not hesitate to destroy the magic circle of the game"[8]

This form of aberrant play is distinctly 'ludic' as it is founded in a paradoxical denial of the rules while playing within them. In seeking to win the game, the player may cheat, turn off the game system, pause the game at a crucial point, or walk away mid-competition. Instead of playing strictly within the rules of the system, this player is disrupting the game, breaking the rules, but not for the benefit of anyone playing the rules. There is no 'fun' aspect in this type of play, and although the player is recognising other rules outside of the clearer signs of the game world, they are not using them to any advantage in their exploration of the game system. In many ways, the disruptive aberrant player can be seen as the stereotypical cheat, the game player who hates to lose, and uses any means possible to stop the competition when it is not going their way. This is where we can see cheating as a sub category within appropriated play, through the acts of the disruptive aberrant player.

For other players, reaching a state of 'flow' within the game, and then falling outside of that state during a time where the player wants a break from the game, they have completed all the levels yet are still craving more, the glitches in the game system may start to become exposed. The player may seek to find an easier/quicker way of completing certain sections. They may want to explore the 'algorithm' further to re-instate the experience of 'flow' that they once had, or extend the other pleasures of the game in some way.

What I will term the 'contributive aberrant player' creates this experience. They too, seek out new ways of playing the game, of finding out what else is on offer in their exploration of the 'algorithm'. 'Contributive aberrant players', are those who for intrinsic or extrinsic reasons, seek to discover 'hidden features' of the game

and through this enrich their play or that of others. These hidden features come from deliberate or inadvertent combinations of algorithms and user actions. These players are seeking to decode the algorithm of the game in different ways, to explore the logic of the game's world away from the norm of purposeful play and its rewards, and to achieve different forms and levels of satisfaction in their engagement. Just as players experience the same game in different ways, the 'contributive aberrant player' has various motivations for their discovery of other syntagms of the game paradigm (as shown in fig 1.).
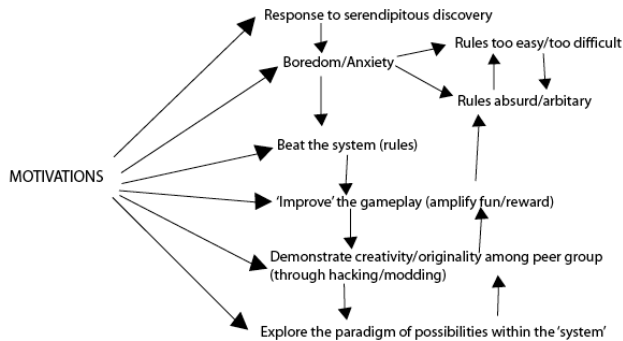
4. PLAYER MOTIVATIONS

Fig 1. Motivations for Appropriated Play

My initial analysis of motivations of 'appropriated play', identify firstly a set of conditions or wishes such as boredom or anxiety, a need to beat the system, or to improve gameplay (which may be a response for poor design or a need to amplify fun or reward in a well designed game). Players may wish to demonstrate creativity or originality among their peer group, through hacking or modding, and in doing so, gain respect of the gaming community and recognition for their achievements. All categories can be connected to each other in various ways and one motivation may be linked to another in certain play experiences or as time progresses. They are not to be seen as single entities but as ideas that work together as a way of discussing how players can experience the same game setting as an individual or group.

Reaching a level of boredom or anxiety, Csikzentmihalyi's categories that distinguish whether or not we are in a 'state of flow', may be due to the rules being too easy or too difficult, or absurd or arbitrary. For example, during a game of *Lego Indiana Jones[10],* players may unlock all the levels in a short space of time, and feel some sense of completion, although they may have only officially completed 25% of the game. On having to replay parts of the game, in order to complete 100%, the play may start to become uninteresting, having to replay the same sequence of events to get all the artefacts and coins for each level. In an attempt to make the level more appealing for the player, and re-reach a 'state of flow', other new ways of playing may be found. The player may start attacking the other computer bot 'player' working with them, or try and find hidden glitches within the game system. Standing at certain places, causes players to get 'stuck' in walls, or objects to become trapped between pieces of ingame geometry. The other computer bot 'player' can also become forced to animate on a loop, as they too become trapped due to the positioning of the player controlled central character. 'Glitch exploration' can take over as the player's new task within the gameworld. This will to some extent have to be short-lived, as the player will eventually have to succumb to the rules of the level in order to complete it again and be recognised for their collection of new objectives, or the game will be turned off and no further progress will be saved. But these smaller playful objects created by the player allow them to reach a new and different state of flow and gain reward for personal goals set during this new way of playing (Caillois 'paidia').

This is similar to Perron's player type of the "gameplayer". In trying to separate ludic games into those played by 'gamers' and more paidic games played by 'players', Perron suggests the player type of the 'gameplayer'. According to Perron, the 'gameplayer' is able to generate forms of paidic play within the ludic ruled game. He discussed *GTAIII*[11] in relation to this stating that:

"What makes the success of such a driving-shooting-action-mission-simulation game is there is as much for the gamer that has to accomplish specific missions to do as there is for the player who wants to wander the city and just go on committing various criminal acts" [6]

GTAIII is frequently used within the discussion of exploratory gameplay. Players using larger gameworlds as places to explore alongside the creation of in-game missions, means that other player defined objectives are frequently set.

This is again, much the same scenario as *Lego Indiana Jones*. Players can wander around in free play mode, or even in the story mode, and find personal missions to complete such as the 'glitch exploration' discussed earlier. Perron's player type of the gameplayer can be likened to the 'contributive aberrant player' in this respect. They can both experience levels of paidic play within the ludic game. The player has to cooperate with the game system to some extent in order to experience this, in order to unlock further syntagms and experience the extended game's world.

This is where sometimes the game system doesn't open up to the player fully so new motivations call for them to explore it further, other than the use of cheat codes. After the first inclusion of an 'easter egg' (a hidden, secret feature) in the game *Adventure*[12], the act of seeking this extra piece of code and what it may reveal turned into a type of play for some players. Now with more advanced technology, and larger worlds to be explored, seeking the hidden 'easter egg', has in many ways turned into finding out what else the game code will allow the player to do, out of the confines of 'purposeful play'. 'Emergent gameplay' has been discussed as a new way for game system to be explored by players.

"One of the most famous examples of emergent gameplay is the possibility of using mines to climb walls in Deus Ex…" [13]

This type of play arises within the original game system and shows the exploration of players trying to find new ways of manipulating objects for different means. Emergent play is a form of constructive 'appropriated play'. It also highlights that the exploration has shifted from the paidic back to the ludic, but the ruled play takes on the new rules as discovered by the player.

This is particularly evident in hacking or modding games as a sub-category of appropriated play. What Julian Kucklich refers to as 'cheating' in his essay "Wallhacks and Aimbots"[13], where players use codes such as 'noclip' to render walls obsolete as the player can now move through them, and "…thus be regarded as a means of laying bare the technological foundations of gamespace and of denaturalizing its representational aspects"[13], is actually a way of players exploring the game paradigm and a new syntagm that exposes the algorithm, that we, as gameplayers are not always used to seeing. This poses the question of where 'cheating' stops and 'appropriated play' begins, or vice versa. Cheating can manifest itself in various ways as shown by aberrant players, but the connotation of cheating implies deceit and unfair advantage, using hidden codes in order to gain a better score or open up areas of the game, that the player could not solve themselves. 'Cheats' and disruptive aberrant players are not interested in the workings of the 'algorithm' or greater game paradigm. They are blinded by its syntagms of 'purposeful play' and how to overcome them, whether in isolation such as a player using a code to gain infinite lives or within a social situation disrupting the game to end the competition or using codes again such as invincibility to gain unfair advantage over the other gameplayers. Cheating is linked to 'appropriated play' in the way the two distinct types of aberrant players work together within a cheating scenario.

In order for game cheats to be found there needs to be aberrant players willing to deconstruct the algorithm in order to expose further game traits. These players are contributive, adding new knowledge to the foundations of the system. By placing the knowledge online, it may be picked up on by disruptive aberrant players, in the search to destroy the game in a social setting e.g. using wallhacks to their advantage in the multiplayer game scenario. Contribution may become disruption with this passing of knowledge.

Other players may seek to use this contributive knowledge in other ways, to expose the game as art as well as play. As noted by Kucklich, both artists JODI and Brody Condon, use the exploration of the algorithm as a way of exposing the system as a way of art. Condon's own aberrant play becomes an artwork, such as in his piece 'Suicide Solutions'[14], using footage of game characters committing suicide using in-game weapons to turn on themselves. This is Condon's own set of play rules with the system, his own experience of using the game setting to expose its other uses.

Game hacks can also be used for other means than 'cheating', using the resulting game patch for different means. Within the release of Doom III, players are able to use a flashlight in order to guide them through dark corridors, where the zombies await them. The players avatar cannot however carry both flashlight and gun at the same time, making the shooting of zombies and the ability to see an on-going problem in the swapping between each object/weapon. This activity disrupted many players level of 'flow' and therefore a solution was found and posted online for all to use.

"*To many players, however, it is a game-disabling error on the level of a bug. There soon appeared a software patch…that allowed flashlight and weapon to be used simultaneously*"[15]

This modification to the game is not seen as a cheat but as a welcome extra to players of Doom III, to enable them to play the game without constantly changing controls. The player experience was fragmented by the original game conditions. The 'bug' was recognised and then adjusted to suit the needs of the player and the Doom III playing community. Aberrant play, motivated by the need to improve gameplay, helped to address a problem concerning many gamers in a similar situation.

The sense of community that has evolved through the use of the internet in online gaming forums and online play itself, has meant multiplayer games are now more accessible without having to leave the house to go to the arcade, play at a friends, or get your friends to play in your living room. Now through Internet connections, multiplayer games on the PC and home game consoles have become an addition to many game releases. How does appropriated play therefore fit into the world of multiplayer gaming and does it differ in respect to its single player counterparts?

5. THE MULTIPLAYER GAME

Many games now include a co-op feature, whether online or in offline versions to the game. Instead of players competing against each other, they play co-operatively, in order to work together to solve missions, kill more enemies and unlock the secrets of the level to progress further. *Lego Indiana Jones* has such a feature. In fact the whole game is played co-operatively either with a computer 'bot' as the second character, or with a human player stepping in as the second character. Some puzzles within the game need two characters using each character for their own strengths such as the female characters being able to jump further, and Indiana Jones' crippling fear of snakes meaning he has to step back from some of the puzzles until the snakes have been killed.

Outside of the ludic game rules, the co-op feature can allow for some level of paidia for two human players collaborating. Shooting each other, and then positioning your character so that on regeneration it again falls to its death off a cliff, is one way in which paidic play can seep into the original gameplay. 'Who can discover the most bugs and get the cart stuck within the ditch in the sand the first?' can become a new pastime to break up the monotony of solving the pre-defined rules of each level. This type of aberrant playing is motivated by boredom within the rules of the single game syntagm, and fuelled by a response to the serendipitous discovery of 'bugs' that exist within the system.

Of course, once the play is recognised as a new type of competition, it starts to progress towards being more ludic in nature through the discussion and recognition of the new 'rules' of this freely developed play. Other types of ludic play can exist outside of the original game syntagm, exposing further syntagms to play with.

Once play is ruled again it becomes named. Therefore a new named game may need to be explored again. This can occur when the paidic shifts to the ludic. Once back as a ludic game, the game may fall into the trap of

needing to be explored further. In the multiplayer game scenario, the naming of the game becomes apparent more easily, through the recognition of all players of this new play type. Discovery of what the game system can offer can also be recognised in such instances as the creation of maps for online games, such as *Half Life*[16] and the creation of *Counterstrike. Counterstrike*[17] became such a popular map with players that it is now available as a commercial release separate to its first origins as a separate download, and has since been developed as a set of further sequels. Through exploring the algorithm, the players have generated content for other players away from the original game designers content. The Internet has now allowed for player as designer in many instances, with the growing availability of toolkits and world editors.

'Appropriated play' therefore works by 'contributive aberrant players' wanting to add further aspects to the algorithm for others to see. This itself generates new types of gameplay and rules for the players, for this process to occur again. This can be likened to the game of 'Nomic'. The 'Nomic Wiki' defines the game as:

"*...the rules of nomic are not written in stone. In fact, the object of the game is to make changes to the rules of the game. Players start off following some "initial rule-set", which dictates how the rules can be changed. Once a rule change has been made, players then follow this new rule set. Most importantly, the rules about how rule changes are made can themselves be changed*".[18]

'Nomic' is probably becoming a more common way of playing as the game algorithm is starting to become explored more easily. Games have changed from their arcade beginnings of beating high- scores in 'PacMan', and reaching the third board of 'Donkey Kong'. The shift has seen the player become the designer in more ways, through the growth in Internet communications, modding communities, and hints as to how to play the game in a different way. 'Appropriated play' has always existed in games. Traditional card games show how the change of play and variations in how the game can be played, has resulted in many different variations of the same game. Discovery of the algorithm has opened up new possibilities and rule sets for the player

6. CONCLUSION
'Appropriated play' goes beyond the term 'cheating'. Cheating suggests a selfish act of personal gain/reward during a game. 'Aberrant players' in the act of 'appropriated play' go beyond this. In developing a new vocabulary as a way of discussing videogames and play, and what separates them as a media from film and interactive narratives, the term 'appropriated play' becomes a more viable option. 'Appropriated play' is all about discovery. Discovery as to what the game world can offer us outside of the norm. This manifests itself through 'aberrant players' in various motivations, such as finding glitches, finding new ways of using the same object such as in 'emergent gameplay' or creating new games altogether which new names and rule sets. Whether it be a response to serendipitous discovery, causing the player to explore the system further in recognition of further syntagms within the game paradigm, or out of boredom or anxiety, having once before reached a state of flow and wanting to re-achieve that feeling, 'appropriated play' is starting to seep into games playing as the systems get larger. Games have always been recognized as having a social aspect to them, bringing a sense of community. 'Appropriated play' allows players to gain respect from their peers, and to have a sense of personal achievement through hacking/modding and finding the codes to unlock the various secrets of the game world and this bins the community.

The change from 'purposeful play' intended by the designer, to player led 'appropriated play' within a designed algorithm is important. The growth of larger game systems means there is now more for the user/player to explore making 'appropriated' play as commonplace as 'purposeful play', blurring the boundaries between them. The designer may deliberately leave appropriated play 'hooks' within the system, features that can be found, through 'easter eggs' and the hidden secrets of the game that may emerge during or after the 'purposeful play' experience. It is more than likely that the motivations of 'appropriated play' will figure large, as games become less and less simple levels and more and more the explorable worlds where paidia and discovery predominate rather than rote learning of rules.

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