Presence and Dark Play

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<u>Introduction</u>

Videogames are textual and processual, forming a computational medium. Ian Bogost understands games as a configurative system with a discursive formation based on discrete, interlocking units of expressive meaning – "unit operations" (Bogost, 4). The rules of a game are an "extrospective" tool that constructs an unblemished gameplay experience bereft of 'dark play', yet the rules reference no actual state of the game at any point when played (Bogost, 30). In other words, games always include dark play[1]. An interstitial region exists in the discourses between a game's rule-based system and a user's subjective interpretations on the functionality, uses and affordances of that system. This interstitial region of representation is a site of meaning-production with emergent forms of dark play[2]. Bogost notes the long tradition[3] in media studies and philosophy of formulating structures that can account for the contextual realities of dark play – dark play as a form of re-structuring (Bogost, 107).

Dark play allows new, unpredictable and unplanned experiences for the player in videogames[4]. In Star Wars: Knights of the Old Republic II – The Sith Lords (Obsidian, 2004), there are a few instances of infinite loops in dialogue trees. In these situations, a player can engage the NPC (non-player character) in the same conversation an indefinite number of times. It requires that particular options in the dialogue tree for that conversation be chosen, but those options occasionally correspond to a shift in the 'morality meter' for the player in the game, rendering the player's avatar character increasingly 'light' or 'dark' in their alignment. On the Sith home-world planet, Korriban, a cave leads to the back entrance of a Sith Lord's temple. Inside the temple are special items for the player to use, with narrative sequences and cut-scenes that provide great detail in explaining the lead character's role in the overall story. This cave and temple is where the player can truly define their motivations within the game. However, the temple is only accessible if the player's character is greatly aligned toward either light or dark. The 'cheesing' (greatly repeated action sequence by a player) in the dialogue tree that suffers from a 'glitch' of being based in an infinite loop in the game's code, allows the player to experience parts of the game that might

otherwise be unavailable or only available near the very end of the story. These new experiences are facilitated through dark play.

In developing their narratological game theory of *traversal*[5], Pedro Cardoso and Miguel Carvalhais understand forms of dark play as modes of exploration where, "the player is aware of the game as a computational system and… she seeks its frailties" (Cardoso & Carvalhais, 29). I would suggest that 'dark play' not be defined through intention, but instead be conceptualized with respect to its effects on player *presence*. I offer a structural model – *the player presence model* – which defines whether a player has high or low presence while playing a game, and without applying ethical-based judgments on whether presence is 'good' or 'bad'. Presence is about fluidity and continuity by virtue of an incorporative and immersive experiential state of being during play. Dark play represents potential breaks and ruptures to that fluidity and continuity of presence by rousing the player out of an incorporative state or disrupting the player from an immersive state, however dark play may also heighten presence through relaxing the player into an incorporative state or enhancing their immersive state. In this respect, 'presence' defines the structure and 'dark play' the context for then theorizing and explaining problematic or difficult forms of play in games.

Structure: The Player Presence Model

Presence, Immersion and Incorporation

Conflation of game (object/text) and gameplay (process) should be avoided when theorizing a structural framework for player *presence*[6] in games. The game is an object that has an operational structure articulated through a set of processes (ie. applying algorithms, 'running' code, upholding rules). Gameplay is processual, but relies on the iteration and reification of game objects in the process of producing meaningful experience. Gameplay would require Super Mario to be onscreen afforded effectiveness in progressing through a particular action sequence, while the L-shaped Tetris piece must

also be iterated as a game object in order to be part of an action sequence that is meaningful and produces gameplay. The action of making Super Mario jump or an L-shape Tetris piece rotate reifies the code (ie. classes, functions, scripts, etc.) through those game objects which allow for meaningful action sequencing, in turn producing gameplay. There is a dynamic relationship between the game and the gameplay: the game is an object made up of processes and the gameplay is a process made up of objects. One of the object's (game) processes can be metonymical for gameplay (ie. jumping in a platformer, or shooting in an FPS) while one of the process's (gameplay) objects can become synecdochal for the game itself (ie. the character Mario for all Nintendo games which feature Mario).

The aforementioned overlap between game and gameplay renders the gaming experience dynamic, producing potentially indefinite varieties of gameplay for a limitless user base for any particular game. The objects suggest processes and the processes utilize objects – the game only exists meaningfully through gameplay. However, I would like to suggest that the game (object) and gameplay (process) also produce meaningful experience for the player that is distinct from one another. For my purposes, while working toward a *player presence model*, the game can be seen to 'incorporate' the player and the gameplay is 'immersive' for the player. In other words, objects incorporate, and processes immerse, the user. The etymology for "incorporate" denotes embodiment and objects similarly denote embodiment. Incorporation involves a body (player/user) inside another body (the game). Similarly, the etymology for "immersive" denotes embedding and processes can be understood as embedding through their layering of actions into sequences. Immersion involves a particular process (player action sequence) embedded within expanded sets of processes (overall gameplay). Gameplay always involves more than just the player's action sequence as there are processes of effects and happenings that contribute to the overall gameplay. In GTA IV (Rockstar, 2008), Niko Bellic isn't simply in a warehouse shooting at gangsters and police as a single process for gameplay executed through the player's action sequence. The NPC (non-player character) gangsters and police are dying (destroyed) or repositioning themselves to take cover (pathing), paint and plaster textures are being chipped off wall models from the collisions with stray

bullets, windows are being shattered revealing new light patterns on the warehouse floor (occlusion) – all separate processes that form the gameplay and all layers of gameplay that include the player's action sequence of having Niko position, maneuver, target and open fire. The player's actions are embedded within the overall gameplay.

Gordon Calleja offers "digital game elements" imagined to be non-essentialist in articulation and which avoid reductionism (Calleja, 11). The four elements map rather neatly onto my player presence model. The "material medium" can be conceptualized as *game-object*, "the structural properties of game and environment" as *game-process*, the "human player" as *gameplay-object*, and the "representational sign" as *gameplay-process*[7]. Calleja recognizes a measure of cross-over between some categories which is valuable in ensuring that the structural framework is robust, flexible and dynamic enough to not reduce contextual game experience toward essentialist totalizations. Calleja makes note of a particular form of cross-over relevant to dark play when he states that, "in multiplayer games… we often see a coexistence of coded and socially negotiated rules" (Calleja, 13). For Calleja, this statement refers to an emergent cross-over between structural properties (coded rules) and representational signs (socially negotiated rules).

An important aspect of Calleja's project in formulating a "player involvement model"[8] is to substitute "incorporation" for 'immersion' and 'presence'[9]. Presence was introduced to game studies in 1980 through cognitive scientist, Marvin Minsky's *telepresence* which could be defined as an awareness of two spaces – the physically proximal and the physically remote (Calleja, 18). I would offer that game *presence* is an awareness of two experiential states – incorporation (embodied) and immersion (embedded). Therefore, the player experiences presence when the game incorporates her and at the same time she is immersed in the gameplay.

The player is incorporated as an agent mediating the game-process (structural properties) of the game-object (the material medium). In this way, the player **uses** rules more than just adheres to them when creating meaning while playing. The player is immersed among the gameplay-objects (human

player, avatars, NPCs, models, etc.) with the agency[10] to engineer the gameplay-process (signs). The player makes choices about how to play and produces meaning while playing. Therefore, the player has a dual existence with games; the player is embodied and embedded - incorporated and immersed. When both experiential states are fully achieved then the player has complete presence, however, partial states are also possible. In the *player presence model*, 'presence' is a dynamic and active experiential state involving the player as an object exerting agency through the game's processes and engineering gameplay through the processes's objects – Heideggerian implicit interpretation is replaced with self-reflexive introspection (Calleja, 21). That is to say, *presence* in games doesn't involve potential understanding through interpreting abstract understanding, but instead reflects actualized understanding through real experience. In addition, actualized understanding denotes 'familiarization' therefore *presence* must involve the familiar. For example, there can be no presence when playing FIFA 16 (EA Sports, 2015), if the player has never been in a sports stadium.

Examples of games can be provided to demonstrate the distinction between incorporation and immersion in the player presence model. Tetris (Pajitnov, 1984) has high incorporation and low immersion because the game-processes of the game-object are quite simple and straightforward to understand: the temporal progression of pieces speeding up at higher levels, basic arithmetic for scoring, the higher-order goal of completing rows, and manipulation of basic geometric shapes. There is no formal resistance to the player's exertion of agency in mediating the game as an experience. The meaning created from playing resonates internally where the fragmented moments (or Bogostian "operational units") of gameplay are clearly understood and form a holistic understanding also. Cause and effect chains have no breaks and progress is linear. A player experiences high incorporation with Tetris, but low immersion. The player as an object of the gameplay process is granted a very simple, and limited, set of executable actions and possible action sequences. Move patterns in Tetris are so limited as to deny the player from marrying their action sequences in the game with the kinds of action sequences they experience in the real world. It is unlikely anyone has felt they are "inside" the world of Tetris while playing, although many

players can relate to the experience of feeling absorbed by the game. There is a partial presence when playing Tetris based on the highly incorporative nature of the game.

Destiny (Bungie, 2014), on the other hand, is a game with low incorporation but high immersion. A player could be 'booted' (disconnected) from the Destiny servers and thus banished from the game world without having an inkling as to why it happened. The game world has such complexity (primarily through code, objects and scripts) that there is little opportunity for a player to experience the exertion of agency over the rules of the game. The game world is independent enough of the player that it will resist adapting to the player. A player can continuously jump off the Tower to their suicide and the game will not alter its effects to remedy the situation or suggest alternative courses of action – the rules of Destiny are sometimes as complex as real life, thwarting a player's full control over the game. Destiny does have high immersion largely as a result of its open world format – a player may even travel to new areas that have yet to be introduced through the narrative-driven campaign mode (unlike Rockstar's GTA or Ubisoft's Assassin's Creed games). The gameplay process provides few proscriptions on how to produce meaningful events. Like Tetris, Destiny produces a partial presence for the player's experience.

A low presence game experience could involve 'dark play' in the form of cheating the game (manipulation of rules used against the player or machine) and in the form of exploiting the gameplay (repeatable and repeated action sequences which reduce the variety of action sequences experienced by the player). Poor AI behaviour (for example, a boss that gets stuck on map objects and simply stands against it allowing itself to be shot or stomped to death) will also produce low immersion – the narrowed range of possible action sequences foregrounds the gameplay as providing a limitation of meaning when compared with real world experience. Crashes and latency for the game will produce low incorporation as the player's agency over game-object and game-process is hampered. These examples do not create an exhaustive list of possibilities for low presence and particular games may be designed and may play in such a way as to also produce low presence, regardless of what a player may deem obvious game 'flaws'.

A hypothetical text-based game which uses ambiguous hieroglyphs as gameplay-objects may be an effective basis for creating a game with low presence. The manipulation of hieroglyphs is not intuitive for producing meaning if the characters do not have their semantic meaning specified beforehand (the characters in human languages have fixed, concrete meaning) and the gameplay processes would not involve producing action sequences that bear relevance to real world action sequences (real world experience doesn't involve manipulating an array of seemingly purposeless, abstract objects). However, we can already see that there is no 'game' here without some set of rules and that rules can always be mapped back to heuristic tools which humans use when exerting agency in the real world of objects (ie. gestalts, paradigms, syntagms) and when engineering meaning from experience. The rules of any game will relate to the rules of what is possible when effecting action sequences in the real world (real world 'rules' being bound by the quantitative aspects of time and space, which still provides a range of opportunities for action sequences, but don't allow someone to jump into space, time-travel or have x-ray vision, for example). Therefore, if all games have rules of some kind, then the game experience will always have some degree of presence through the relation of game-based rules and real world rules enabling a measure of incorporation and immersion.

The ideal high presence model is life itself and real world experience. The quantitative aspects of time (history) and space (nature, physics) are unbreakable. Adolf Hitler and Albert Einstein existed. Pigs cannot fly. The 'rules' (properties, really) are understood, learned from infancy and unwavering throughout life (dissociative cognitive conditions withstanding), yet it requires exertion of agency over real world objects and through real world processes to produce meaning around this rigid code. There is no conjecture or contestation over the quantitative aspects of real world experience – a hot flame will always burn exposed flesh. As a result, incorporation is high. Real world experience is also immersive because it is an open world with endless possible action sequences and patterns that are subject to personal choice, yet there are also endless consequences for those actions and choices that are often unpredictable and reveal methods of adaptation for objects operating beyond the agency exerted by any

given subject in making their choices. Therefore, high presence is defined as high incorporation through all rules being implicitly understood through self-reflexive introspection, and as high immersion through an unbounded exercise of free choice and free will, with both predictable and unpredictable consequences withstanding.

In fact, the only game experience that could potentially have the same degree of high presence as real world experience would require that all the rules be implicitly understood, but where there are still unpredictable consequences for gameplay. The latter aspect might be satisfied through multiplayer online interactions or advanced NPC behaviours that emulate human interaction, but the former would suggest either all rules are implicitly understood because the game is an overt simulation of real world experience aspiring toward full mimesis, or that the rules have been fully established through previous related games. Either of those options regarding the understanding of rules suggests a foregrounding of the game as an abstraction from the happenings of real world experience – the game encompasses non-necessary events. This could disrupt full presence from ever being possible for a game[11].

Immersion isn't just about representational mimesis and realism. Elena Gorfinkel writes, "immersion into gameplay seems at least as important as immersion in a game's representational space" (Gorfinkel, quoted in Calleja, 26). That is to say, a game can be immersive for rendering the gameplay experience extremely fluid and 'lifelike' without aspiring to appear as real world experience appears and is perceived. So, Calleja distinguishes immersion as absorption (psychological embeddedness) and immersion as transportation (physical embeddedness) and this distinction will serve theorists well with the continued development of VR (Virtual Reality) and AR (Augmented Reality) technology in gaming (ibid.). Calleja contradicts himself when formulating the continuum of conscious attention to unconscious involvement, but also claiming, "… without attention there can be no involvement" (Calleja, 40). I would suggest that involvement does not require attention – AFK players ("away from keyboard") are often still involved in raids in MMORPGs (massively multiplayer online role-playing game) without paying attention to the goings-on of the raid (the Leroy Jenkins saga from World of Warcraft is a tongue-in-cheek

demonstration of this fact). Therefore, immersion and incorporation within the player presence model requires the player to first have involvement (unconscious), then attention (which implies conscious involvement), facilitating engagement (active or passive) which can lead to absorption (psychological embodiment or embeddedness, and implies active engagement) and transportation (physical embodiment or embeddedness, and implies active engagement). High incorporation and immersion in games each require a high degree of absorption (noetic) and transportation (extranoetic).

Spatiotemporality and Presence

The player presence model asserts that presence in games is determined by incorporation (embodiment) and immersion (embeddedness). In addition, incorporation involves the exertion of agency over game-object (material) and game-process (structures), while immersion involves the engineering of action sequences with gameplay-object (avatar/NPC/game object) and gameplay-process (representational signs) to construct meaningful game experience. However, game experience and sense of presence has both a temporal and spatial component. Alexander R. Galloway's work on informatics culture and games provides a structural framework that distinguishes two dimensions and four categories which are very similar to the player presence model. Galloway offers an informatics culture model for games that divides game experience into diegetic and non-diegetic, enacted by operator (player/user) or machine. He writes, "… one deals with the process of informatics and the other deals with the informatics of process" (Galloway, 18).

For Galloway, the diegetic-machine dimension of games involves the rendering of objects spatially and the production of ambient moments temporally – it is the world of the game irrespective of the presence of a player in that world. Non-diegetic-machine is the category that pertains to technical problems such as lags and crashes, but also involves menus such as high score tables or HUDs (head-up display). Diegetic-operator is where the player performs movement and expression, and non-diegetic-

operator involves the player's interaction with menus or cheats. Like Calleja, Galloway recognizes that there is overlap and cross-over – blurred lines – where emerging phenomena represent a shift between continuums (Galloway, 28). For example, the HUD display has bearing on the diegetic and non-diegetic, in that, diegetically, a HUD can be understood as providing display information that one would receive if the game was no longer a simulation, but instead real life. If a person were to wear a helmet into combat today, she might find digital displays providing information such as geo-location of targets or a count of rounds of ammunition in her rifle. However, the HUD of games may also display the health of the avatar character, which is a non-diegetic piece of information, as one can understand that the soldier would not be told how close they are to physical death through digital display provided by their helmet. There can be cross-over between operator and machine as well, for example, in Gears of War 2 (Epic Games, 2008) when a player leaves an online multiplayer match, their avatar is immediately replaced with a computer-controlled NPC which continues playing.

Galloway's framework is important to the player presence model in a spatial sense only. The game-object can be defined spatially as non-diegetic-machine, and is the algorithms, code, rules and all other 'invisible' aspects of the game that must be materially present for the game to be playable. The game-process can be defined spatially as diegetic-machine, and is the visible structures that can be interacted with in the game world. Gameplay-object is the diegetic-operator, involving manipulation of an avatar in the game world. Gameplay-process is the non-diegetic-operator and refers to the range of choices and options which the player decides partially outside of the game world itself through a range of interfaces[12]. That is to say, spatially, the player and machine can be out of the game world or inside the game world, but that incorporation and immersion are still a part of those experiences – they are all game experiences, but have distinct spatial dimensions. Worth noting, is that these categories still experience overlap, cross-over and blending through the unique variations performed at the contextual level of game experience. The purpose in setting up a structural framework is not in providing conceptions that are rigidly fixed to one set of meanings - totalizing, reductionist and essentialist - but instead, to provide a

conceptual tool for guiding the proper understanding of dark play, given its profound variety of form, modes of implementation and semiotic polysemy.

'Presence' suggests both a spatial and temporal situationality – presence is experienced as a moment, temporally, and in a place, spatially. José P. Zagal and Michael Mateas theorize game temporality as having four temporal frames: real-world time, gameworld time, coordination time, and fictive time (Zagal & Mateas, 844). The authors define a temporal frame as, "a set of events, along with the temporality induced by the relationships between events" (Zagal & Mateas, 848). Like both Calleja and Galloway, Zagal & Mateas assert the structural frameworks as not being hermetically-sealed, and that games can support multiple temporal frames that may overlap or occur sequentially. For example, in Gears of War 2, an NPC is programmed to seek out and pick up grenades that have spawned on the map. The grenades, once picked up, will respawn on a fixed cycle with a set duration. As a player, I track this time unconsciously in my head and many veteran players will be able to perform this task whereby while playing they know exactly when to return to the grenade spawn to pick up the grenades just as they are re-appearing on the map (this is advantageous both for maximizing offensive output for the team and personal achievement of attaining a powerful weapon over teammates). I am using real-world time to track the grenade spawning while there is also a coordination time frame at work for the NPCs that will be directed back to the grenade spawn if grenades are available for pick-up.

Real-world time can be represented for conscious recognition, such as through explicitly watching a game clock tick down (ie. most sports games and multiplayer FPS modes), or for example, implicitly, through the decreasing interval of a flashing sequence that signals an invincible state coming to an end (ie. with Pac-Man after eating a power pill, or when Super Mario has caught a star). However, real-world time can also be registered through unconscious recognition (the Gears of War 2 grenade spawning, for example). Gameworld time can have a logic that is married with real-world time (in Bungie's Halo games, the player and Master Chief have two minutes to escape a ship that has been set to detonate) or can have its own logic (in GTA IV, the day-night cycle has a duration of forty-eight minutes of real time).

Coordination time involves rounds or turns and can be fluid (ie. timed chess) or fragmented (for example, when a door breach in Tom Clancy's Rainbow Six Vegas 2 is disrupted by NPC allies wandering in a room far away from the door – it is an issue of targeting and pathing in the programmed behaviour of the AI). Fictive time is described by Zagal and Mateas as "established through the application of sociocultural labels to a subset of events" (Zagal & Mateas, 850). The example the authors provide is that in games such as Sid Meier's Civilization (MicroProse, 1991), "days" or "years" are used to label rounds which changes the players' expectations on the granularity of action that can be accomplished in that round. It would seem that fictive time is a frame based in representational signs necessarily articulated through the game as an object and within its relationship to a player using the game.

Galloway's framework for the informatics game culture model was somewhat liberally reconceptualised through its spatiality valence for import to the player presence model. Similarly, Zagal and Mateas provide a set of temporal distinctions and definitions for the player presence model. Real-world time is tied to the non-diegetic-operator and is part of gameplay-process in the player presence model. The time happening to the player (real-world time) structures the action sequences (choices originating outside the diegesis by the player, ergo non-diegetic-operator) that produces gameplay as a meaningful process (gameplay-process). Coordination time is tied to the diegetic-operator and is part of the gameplay-object. The time the player needs to execute and complete an action sequence (coordination time) is represented directly through the avatar and other objects (diegetic-operator and gameplay-object). Gameworld time is the time happening to the game (diegetic-machine) as it were, which structures the logic for when code is executed (game-process). Fictive time is the representational relationship of time between the machine and the operator, and is most pertinent to the non-diegetic-machine (game-object) as a material base necessary to establish a meaningful relationship with the operator[13].

Conclusions

Liberties are being taken in the mapping process of overlapping the relationist characterizations of Calleja's, Galloway's and Zagal & Mateas's structural models. If blending and cross-over was an immediate concern for those authors then it becomes an outright caution in my project. Nevertheless, the player presence model provides a structural base for sorting and making sense of the great variety within 'dark play'. Dark play, as I endeavor to show, has distinct temporal and spatial qualities as well as diegetic and non-diegetic properties. Dark play can be stimulated by the machine or be inspired within the consciousness of the operator (player). Dark play can affect the agency of the player in interacting with the game and can determine particular action sequences for gameplay. Dark play will always impact presence both through rousing or relaxing a state of incorporation, and disrupting or enhancing a state of immersion. Through the player presence model, dark play can be conceptualized as both a negative and positive form/act/performance, with potentially constructive or destructive impact on the player who enacts dark play as well as other players who are subject to that dark play.

Context: Dark Play

Introduction

For my purposes, "dark play" is any part of the game experience that involves a comprehensive break in predicted/expected (player) or planned (machine) states of being, either for the player (operator/user) or the machine. Dark play exists when there is a crash due to an infinite loop in the game's code (player prediction defied by the machine) and it exists when a player uses a developers' code (for example, the Konami Code) to enable infinite lives or unlimited ammunition (machine plan defied by the player). Dark play describes situations where the player generates lag through the use of a lag-switch or IP

flooder software (machine plan and other player prediction defied by player) and it refers to a situation where one player becomes AFK and leaves their teammates exposed to a flanking or pincer maneuver (player predictions defied by player). Dark Play is not about intention, but wholly defined by the break in what a player predicts for the game and/or what the machine has planned for the gameplay. In this respect, even a game distributor failing to provide the proper warning labels on a game will be an example of dark play when an unsuspecting consumer is shocked by the break in their prediction of what the game had to offer ludically and representationally.

The use of a rapid-fire mod in an FPS (first-person shooter) is not dark play simply because other players may or may not have predicted that the use of such a device would occur – it is dark play because the machine has no plan in place to re-balance gameplay given the introduction of a rapid-fire mod for one of the players in the match. All players can use rapid-fire mods or all players could predict that a player will use one, but it remains dark play because the machine itself can't adapt to the use of a rapid-fire mod so as to re-establish fairness for the game. Imagine a situation where the programmers have written code that when executed is a plan for addressing the use of rapid-fire mods such that fairness is re-established – perhaps, the machine gives a 'haste' bonus to all other players in the match so that the bullets of their guns come out twice as fast as regular speed. At this point, the player using the rapid-fire mod may still have the intention of crafting an unfair advantage for themselves, but the machine has implemented a plan that re-establishes fairness – the use of a rapid-fire mod is no longer dark play, and in fact its use is rendered relatively insignificant[14].

The reason for opening up the definition of dark play in such a way is to avoid the trap of applying moral and ethical judgments on the "use" of dark play or to define instances of dark play. Allowing moral judgment to define dark play then determines that ethics forms the structure for dark play and precedes factors such as technology (if not simply trumps those factors). Ethics determining dark play would see Counter-strike (Valve, 2000) as an instance of dark play because it is a product of ripped source code, but would relinquish the dark play label at the moment where Valve buys the game and legitimates the

modding production process. Through a structure determined by ethics, rocket-jumping in Doom (id Software, 1993) is dark play until all players are using it. I would suggest that rocket-jumping as an evasion tactic remains dark play when it is used as an exploit (ie. it is a player's only method of evasion in the game). The other players may come to predict that opponents will exploit rocket-jumping, but the machine was not programmed in such a way that there was a plan designed for balancing gameplay when some players are exploiting rocket-jumping. Rocket-jumping might be quite trivial in this respect, but glitching-out[15] of a map in Gears of War 2 fundamentally alters all of the higher-order goals in a match. The machine's lack of a plan to address the dark play of glitching-out as an exploit, impacts the other players' predictions of gameplay in such a way that the break can completely halt regular gameplay for all players in the match. Therefore, dark play is defined here as being related to breaks in prediction or plan, regardless of intention or value judgments of 'right' or 'wrong'.

Dark play includes a broad base of phenomena, including hardware hacks that change game data to favour a user, exploits which take advantage of a weakness or flaw in the game, espionage hacks which provide interface advantages[16], collusion which involves social exploits, griefing that involves harassment and power impositions, or greed-play that takes advantage of other players' lack of focus or due diligence. William Sims Bainbridge provides a legal basis for categorizing dark play, understanding there to be three legal frameworks with digital games (IP, rules, and norms) (Bainbridge, 44). Transgressing the IP laws is a form of dark play (ie. illegally cloning games, hacking and modifying code, illegally downloading games), breaking the rules of a game is dark play (ie. cheating through software manipulation, or hacks through hardware manipulation), and violating the norms regulated by a gaming community through its informal codes is also dark play (ie. exploits, scamming, griefing, harassment, etc.).

Jesper Juul, categorizes dark play through a structural basis, where he claims, "the history of video games can be seen as the product of two basic game structures, the emergence structure… and the progression structure" (Juul *a,* 71). In a pat explanation, Juul claims that when a game has a 'walkthrough' it is a game of progression and when it has a 'strategy guide' it is a game of emergence

(and notes the possibility for hybrids). Dark play corresponds to the two structural types of games where, for example, a mod would be dark play for a game of emergence and a cheat code would be dark play for a game of progression. I will not be provided the opportunity in this paper to create a comprehensive taxonomy of dark play and am more interested in general qualities and properties of dark play as well as exploring the relationship between dark play as break/rupture and presence as fluidity/continuity.

Temporal and Spatial Qualities of Dark Play

Dark play operates within a separate and distinct spatiotemporal framework than regular play. The bullets for a player's gun occupy a certain space in a given amount of time – perhaps, one bullet fired every second. A rapid-fire mod can increase that rate by a factor of two, thus this form of dark play (when mods are un-checked by the game) produces twice as many bullets in the same space over the same amount of time. A wall-hack can open up the space for the player that employs it, allowing that player to see behind walls into other parts of the game environment while a speed hack can slow down gameplay events and allow a player to have more preparation in planning their action sequences – it is a fundamentally different spatial and temporal experience compared to that of regular play in the same game.

Zagal and Mateas define 'lag' as "an extension of the time between a player's input and a perceived gameworld effect" where the experience for the player can seem non-responsive (Zagal & Mateas, 853)[17]. The authors note that, latency as a temporal effect can impact a sense of immediacy (cohesive gameworld), availability (fluid gameworld) and liveliness (coherent gameworld) for the player, which are all part of producing a feeling of embeddedness. Lag, whether generated via machines (busy servers, poorly-optimized engines, etc.) or by players (IP flooding, lag-switches, etc.) breaks the predictions of players and plans of machines for gameplay experience and can therefore be categorized as temporal-based dark play.

Speed hacking is another instance of temporal-based dark play. The machine has no plan to address a speed hack. The NES Advantage controller has a special button labeled "slow" which players are instructed to use to "get through difficult portions of games where the action gets too fast" (Zagal & Mateas, 857). The controller is part of the Nintendo brand, manufactured by that company. Therefore, the "machine" could be viewed as having no break in the plan for a certain gameplay experience when the Advantage controller is used to speed hack. If the player using the controller was playing against another player not using the controller and they had a socially-negotiated rule to not activate the "slow" button during play, then its use would be dark play, but given that Nintendo was marketing the controller, players should have a prediction that gameplay can be slowed down for particular games. The ignorance of such a fact does not elevate the use of the controller to an instance of dark play[18].

Eben Holmes uses a more psychoanalytic approach to define spatial aspects of dark play as "uncanny play". He writes that game glitches are an "intrusive presence", where "the spectral appearance of failure in the virtual worlds of computers, cyberspace and videogames in which paradoxes and extremities of distance, geometry, velocity and shadow fold in on a single object/surface/function in the world until it… becomes a Thing" (Holmes, 255). Glitches often manifest in the gameworld as perceptible errors in the game's processes, spatially apparent through objects, behaviours and information. Therefore, a glitch is reflective of a machine's failed plan for gameplay and because the player's prediction of gameplay is broken through the perceived glitch, a game glitch becomes an example of spatially-based dark play. Provided in this section are some examples of spatially-based, and temporally-based dark play, without attempting to be exhaustive.

Diegetic and Non-Diegetic Properties of Dark Play

James Newman asserts that "videogame cultures do not necessarily centre on playing games and are impossible to disentangle from their social contexts" (Newman, 45). Galloway adds that, "video

games render social realities into playable form" (Galloway, 18). Transmedia fan fiction, remixing, cosplay and machinima are performative forms which reveal a fluid, dynamic discourse rife with paratextual remediation of the text (game). The non-diegetic forms of dark play, such as walkthroughs or machinima[19] (dark play as IP violation) have positive functions to record playstyles, encourage new playstyles and produce technological competences through decoding the game masterfully (Newman, 93; 104). Non-diegetic dark play can become a critical exercise in challenging the hegemony of the game industry or by injecting new dialogues into game communities that have been operating with myopic perspective (ie. "radical" play).

For Galloway, the non-diegetic dark play involves conscious manipulation of interfaces and menus. For my purposes, it would also include the paratextual. Exploits, such as ghosting in Call of Duty games or glitching-out in Gears of War 2, are diegetic dark play because they happen within the game during gameplay. Cheats and hacks manifest through the gameplay as effects of tampering within the non-diegetic aspects of software and hardware, whether it be re-writing code to access custom avatar skins or connecting a mod dongle to a game console. Galloway categorizes dark play as either being enabling or disabling[20], but fails to recognize the dynamic relationships existent with dark play where the dark play may be enabling to some and disabling to others, at the same time[21]. He also categorizes non-diegetic dark play as either being fatal or temporary, and necessary or unnecessary (Galloway, 31). These categories serve Galloway well in formulating dark play as a form of "counter-gaming"[22], however, the political valence of his structures have little to offer the player presence model. The most relevant tie-in would be to argue that games purvey the dominant ideology until dark play allows for greater realism, thus there is 'good' presence and 'bad' presence. Bad presence is when a player is locked into the "false" reality of the dominant ideology and good presence is to have all previously restricted 'codes' made visible, even if this were to reduce incorporation and immersion. I have two problems with this direction, with the first being that ethical judgments are being employed through political theory to define presence, and secondly, many indie games are currently produced to satisfy the subaltern in the first place (ie. Twine story games).

Holmes understands spatially-based dark play, such as game glitches, as representing an 'unsureness'[23] in the game experience for the player – the flickering effect of presence/absence with glitches acts to foreground the game code, which in turn rouses the player from their incorporative state as well as disrupting their immersive state. Glitches reduce presence. However, temporal-based dark play such as latency or lag, can potentially not affect presence, depending on the user interaction model. Mark Claypool's comprehensive study of latency effects in FPS (first-person shooter) games and RTS (real-time strategy) games led to some early conclusions that even very high latency for RTS games, although noticeable, had negligible effects on the outcome of games (Claypool, 52). FPS games involve many strategies which require precise timing of events, whereas RTS games have few such strategies as dominant to typical gameplay. William Sims Bainbridge explains that latency is a delay in sending and receiving information across a network where in videogames the Transmission Control Protocol (TCP) will check for data packet loss and take the time to resend if there is loss (Bainbridge, 23). The delay in verification and resending is called lag. For RTS games, there are fewer collisions reflective of the interaction between multiple players' action sequences (it is usually a collision with player and game environment in RTS games) as compared with FPS games where player-on-player collisions are rife (ie. shooting or stabbing another player is necessary to achieve first-order goals). Lag can mean that particular strategies are ineffective because desired collisions never register during play. Perceived latency can forego the possibility to implement particular strategies and thus degrades the user's gaming experience (Claypool, 63). Therefore, temporal-based dark play may reduce presence[24].

Citing the work of psychologists, Baddeley & Hitch (1994) and neuropsychologists, Sturm and Willmes (2001), Calleja writes, "… information required to solve the task or manage the situation can be greater than what our attentional capacity system can handle" (Calleja, 41). Having to learn new tasks

takes up resources and it taxes our attention which can lead to an intentional breaking-away from the task. Dark play, in breaking the prediction of the player or the plan of the game may have a similar effect of taxing attention and mental resources leading to a reduction of presence as the player steps away from the game experience in order to collect their thoughts and regain mental composure. Juul, quoting psychologists, Haider & Frensch, explains that people learn through practice to separate task-relevant from task-redundant information in order to limit their processing to only what is most relevant (Juul *a*, 95). If players that are not using dark play are also playing in order to achieve first-order goals[25], then dark play can be disruptive through adding task-redundant information. The player has to adopt new methods for countering the dark play and the onerous search for appropriate methods within the player's repertoire runs the risk of disengagement from the game. In this way, dark play can reduce presence however, for a player with the capaciousness to meet the challenge of integrating seemingly task-redundant information into their cognitive play repertoires then dark play enhances gameplay and possibly increases presence. As Juul aptly notes, "different players may even enjoy the same game for entirely different reasons", and one might extend this sentiment to include enjoyment of dark play (Juul *a*, 19).

Mia Consalvo, citing ethicist Sissela Bok, considers cheating as a form of deception where Bok argues that deception erodes trust and renders societies fragmented because individuals can only rely on their own knowledge for survival (Consalvo *a*, 6). If cheating is defined as breaking the rules of the game, then cheating would be a form of dark play that punctures the 'magic circle'[26]. In this respect, cheating as a form of dark play may inherently reduce presence. Presence implies both an embodiment and embeddedness through incorporation and immersion, respectively, and this suggests a kind of 'layering' within the experiential state of presence. Just as games have a hierarchy of goals (first-order goals, abstract goals, etc.), they may be understood as having a hierarchy of rules such that there never was, a magic circle per se, but instead it is a 'magic cyclinder', 'magic *hypercylinder*' or 'magic *duocylinder*'. These conceptions of discursive formation (or realm) for games allow particular 'layers' of the formation

to be punctured by dark play without affecting all of the formation. As such, even cheating could be a form of dark play that does not inherently reduce presence, but instead challenges an aspect of incorporation or immersion. The normalization of cheats (ie. Nintendo Power magazine, easter eggs, walkthroughs, etc.), may further insulate the player from having reduced presence when exposed to dark play – the player becomes acclimatized to dark play over time.

'Presence, Or Not Presence'

Dark play can reduce presence through glitches which foreground code, or through lag which reduces the range of implementation of strategies. The glitch denies agency to the player rousing them from their incorporative experiential state, while lag can impose particular strategies in such a way that real world experience never does, thus disrupting immersion. However, dark play in creating breaks in prediction for the player or plan for the game, presents failure for the player, and Jesper Juul argues that we desire failure in games as it helps us to reconsider our strategies (Juul *b*, 9). In this way, dark play stimulating failure (either of the player, other players, or of the machine) may actually be imperative to games and preclude the possibility for a fully incorporative and fully immersive game experience. This would mean that we should not aspire toward complete presence in games and that dark play must be regarded as a constructive, productive, positive and necessary aspect of gaming for its ability to help us devise working strategies against failure.

In surveying social psychology, Juul defines 'learned helplessness' as being internal, stable and global in its psychological articulation (Juul *b*, 51). Someone who believes in their pervasive failure as a dominant characteristic of their personality will find that the root of failure is internal, that it isn't likely to change and that it applies in all circumstances. Most dark play appears to emerge externally – lag is imposed and isn't a matter of the player executing action sequences slowly, and glitches are not felt as deriving from flaws in perceptual equipment (ie. hallucinations). Also, most dark play is intermixed with

regular play and is therefore instable. The Konami Code does not remove all challenging obstacles nor do matches in Gears of War 2 begin with players glitched-out of the map. Finally, many forms of dark play are monitored and removed from gameplay and games. MLG (Major League Gaming) assures their participants that XG Firewalls will not be allowed to affect the ping of other players (causes lag) and that participants will not be able to use rapid-fire mods. Therefore, dark play can be argued as not producing learned helplessness for players as it is often not internal, stable or global.

Mia Consalvo explains that although dark play may not produce a state of learned helplessness, certain forms of dark play can create communication difficulties that may stigmatize a player as technically dysfunctional and therefore a community may determine that this player is apt to be replaced socially (Consalvo *b*, 295). Game communication is a dynamic and plural process for expressing and producing meaning between its diegetic and non-diegetic manifestations, its textual and paratextual forms. It may be that presence is always reduced through dark play challenging modes of communication in games and creating asynchronous forms of communication[27]. Consalvo writes, "lag can also play an important role in shaping perceptions and misperceptions about social communication in virtual worlds" (Consalvo *b*, 303). Consalvo also notes that repeated lag can make players feel incompetent or cause them to suffer a reputation as a poor player and that this can cause frustration and anger which disrupts a "flow state" (Consalvo *b*, 304). I would like to suggest that Consalvo's "flow state" comes very close to my conception of 'presence' and seems to include notions of incorporation and immersion. Thus temporal-based dark play (in my terms) is a key inhibitor to presence.

In defining dark play, I have been interested in understanding how different forms of dark play affect the experiential state of presence in games. Dark play is about breaks or ruptures and presence is about fluidity and continuity. Dark play and presence affect each other in complex ways and it could be argued that one can't properly be understood without the other. I have also endeavored to side-step defining dark play with respect to player/producer intention which would inevitably lead to an ethically-based evaluation of dark play as either 'good' or 'bad'. With that caveat explicitly stated, Jesper Juul

raises some interesting points about causes of failure which may explain motivations/intentions for dark play.

The failure-improvement cycle is about letting failure drive a process whereby new skills are acquired that eventually end failure (Juul *b*, 60). In Gears of War 2, glitching-out of maps may be dark play motivated by previous failure in regular play, but once practicing glitching-out, there are new skills that can be acquired through finding each map's appropriate locations for glitching-out and properly executing the glitching-out action sequence to exit the regular map area. The glitched-out areas of the map may even reveal the nuances of the architecture of the map and provide new insights for how to succeed in the regular play area. Self-defeating behaviour and spectacular failure is performed as a means of disavowing suboptimal performance through committing to performing sub-optimally (Juul *b*, 66). Dark play may be a way to facilitate spectacular failure – the use of strategy guides to provide the answers to puzzles is a form of sub-optimal performance which may be intended as such. The genuine failure of puzzles is disavowed through using the strategy guide prior to a legitimate attempt at a solution. If the punishment for failure and the consequence of failure are considered unduly harsh, the player may turn to dark play. Some early video games lacked save-points, creating a situation where a player would have to start at the beginning of a long level, and would be made to go through areas already mastered in order to return to the exact location of failure. Some players may turn to a variety of dark play forms (strategy guides, wall-hacks, speed hacks, etc.) in order to remedy the oppressive conditions of play.

Juul also notes that there are different types of games: games of skill, games of chance and games of labour (Juul *b*, 79). Inevitably, there are a range of hybrids for these categories. Failure may arise from a lack of skill, bad luck, lack of due diligence, a flaw in the game, and impact from other players using dark play. The intentions, motivations and reasons for using dark play may be extremely difficult to discern given a plethora of gaming experiences which reflect a complex hierarchy of game types operating within a single game.

Perhaps the most interesting point to consider with respect to intentions to use dark play is alluded to by Bainbridge when discussing the affordances and constraints that a player may have in a game relative to the NPCs (Bainbridge, 36). A player may choose to engage in dark play as a means of differentiating themselves from the AI. The player will be able to perform action sequences through dark play that are not available to NPCs. In this way, the player has exerted agency over the game and included forms of gameplay that were not planned by the game. Therefore, the player has actually become more incorporated and immersed in some ways, although these ways may be adversarial to the game's 'plan', whose formal resistance may then in fact reduce presence overall[28]. This example also speaks to Bolter & Grusin's media theory of *remediation*, where the aforementioned intention for dark play may be a way to remediate video games from their roots in the medium of physical existence. Dark play is a remediation of games - if one can agree that real world experience is a medium (although many will find this proposition contentious[29]).

Conclusions

I hope to have shown that dark play through its temporal and spatial qualities, as well as diegetic and non-diegetic properties, can potentially reduce presence through rousing a player from their incorporative state or disrupting them from their immersive state. However, some dark play for some players would seemingly increase presence under particular circumstances and in certain situations. Presence is a layered and multi-faceted experiential state while dark play is profoundly variable and plural, leading them to a complex interrelated network rife with dynamic interactions. What is at stake in developing the player presence model and contextualizing its manifestation through the resistances and challenges of dark play is to understand how dark play might affect different players in various ways and at changing times in altering spaces. Ergo, the *dark play* context elucidates on the *presence* structure, and not the other way around. The presence structure defining the contextualized dark play would set up

presence as a 'goal' – an ideal state – where dark play is but an effect on that ideal state. As Bogost notes, the rules of a game merely propose an ideal gameplay without ever actualizing it, and similarly, full presence would be conceived of as an ideal state not ever realized through games.

In theorizing *remediation*, Jay David Bolter and Richard Grusin note a double-use of media culturally, whereby users seek to multiply media (hypermediacy) and erase the trace of mediation (immediacy)[30] (Bolter & Grusin, 5). Their media theory of remediation would seem to suggest that media is to always foreground its relationship to related media when used and therefore media is always abstracted from real world experience (hypermediacy) even if we also seek to use mediation for achieving transparency in the mediated experience (immediacy). For the player presence model, incorporation is achieved through maximally efficient player agency over the medium (hypermediacy) while immersion is achieved through the erasure of the restrictions of the medium (immediacy). Therefore, and through a theory of remediation, presence should not be defined as an experiential state attempting full mimesis with real world experience, but is instead a state emerging from two separate states that have distinct relationships with real world experience[31]. Full incorporation requires awareness of the abstraction of media while full immersion requires ignorance of that abstraction. Presence is a tenuous thing indeed, easily disturbed and disrupted through the broken predictions of the player and broken plans of the medium that arise from dark play. In this way, dark play can challenge us to remediate our media, evolving it and developing it into forms and functions previously unimagined. With games, presence merely describes an important quality of a game experience while dark play can direct us to understanding how that quality can be modified and potentially improved.

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[1] I will later define "exploit" as an example of dark play based on the repeated action sequence which negates other gameplay possibilities. Therefore, even the simplest game such as Tic-Tac-Toe includes dark play in the form of exploits, because there are a few action sequences that will be employed by most players to guarantee either a win or stalemate.

[2] Game developer and security researcher, Dave Weinstein commented on dark play in the form of cheating – "unless you can control all software running on the machine, all machines in the game and the network that links them, it is impossible to prevent cheating" (Consalvo *a*, 131). This speaks to the discursive modes of expression that emerge from a game's system and a player's interaction with that system and how the interstitial region is guaranteed to include emergent forms of dark play.

[3] Platonic *khorismos*, Sausserian difference, Derridian *différance*, Lacanian *objet a*, and Badiou's void.

[4] Newman understands "unintended play" to reveal the plasticity of the game as material for play, unveiling the player as having a sophisticated understanding of rule systems and simulation models (Newman, 11).

[5] "Traversal" is exploration of four types (branching, bending, modulating and exploiting) that produce emergent narrative (Cardoso & Carvalhais, 25). In effect, the authors' theory of traversal presents a model whereby the structure is ludic and the context is narratological. In fact, traversal theory relates to Calleja's definition of "alterbiography" as "the ongoing narrative generated during interaction with a game environment" (Calleja, 120). Calleja further defines alterbiography as "a cyclical process afforded by the representational, mechanical, and medium-specific qualities of a game, and actuated in the mind of the player" (Calleja, 124).

[6] For my purposes, game "presence" is the "shortening of the subjective distance between player and game environment" (Calleja, 2)

[7] See Table 1

[8] Calleja's player involvement model distinguishes macro- and micro-involvement. The former is paratext and the latter is text (Consalvo, 2007; 21). Micro-involvement is the game articulated within gameplay and macro-involvement is the game articulated outside gameplay (Calleja, 37). Additionally, the micro category has six dimensions of involvement: kinesthetic, spatial, shared, narrative, affective and ludic.

A proper breakdown of Calleja's model would require a separate paper devoted to the task, but worth mentioning is that I believe his six dimensions of micro-involvement work more effectively when conceived as three continuums: kinesthetic-narrative, spatial-ludic and shared-affective. It is immediately clear that shared involvement necessarily implicate affective involvement if a game experience is to be meaningful. That is to say, that a purely sociopathic involvement (non-affective) would preclude the experience from being "shared" in any qualified sense – it would only be the case that the quantitative aspect of the experience happened to involve more than one player. The continuums produce scales ranging from the quantitative experience of time (kinesthetic) to the qualitative experience of time (narrative), and from the quantitative experience of space (spatial) to the qualitative experience of space (ludic), as well as the aforementioned distinction for shared and affective dimensions. The dimensions of each continuum necessarily implicate their partner without implicating other dimensions. For example, if action in a game is to be purposeful then the kinesthetic sequence requires a narrative to explain its meaning. The purely kinesthetic is bereft of narrative qualities – the action has no purpose and need not be explained meaningfully. Similarly, you don't need a story (narrative) to make meaning from spatial experience, but you do need play (ludic) to explore the boundaries of the spatial and define the nature of a given space or spatial experience.

[9] Calleja notes that the term "presence" has been predominantly used by technologists and psychologists, while "immersion" has been employed by humanists and social scientists (Calleja, 33).

[10] Consalvo notes that player agency doesn't operate in a vacuum and that industry elements seek to impose particular readings or activities (ie. promote certain ways of playing) (Consalvo *a*, 2)

[11] The notion that rules foreground the game as an abstraction from the real world experience goes a long way in confirming some of the early 'magic circle' theories in game studies offered by Johan Huizinga and Roger Caillois.

[12] See Table 1

[13] See Table 1

[14] If the player using the rapid-fire mod understood the machine's plan to rebalance the gameplay for all players and used the rapid-fire mod in order to change the gameplay to experience faster deaths or force players into more cautious play then this would be an intention toward dark play, however, other players in the game will experience fairness and balance and the fact that some matches (ones involving the machine's adjustment for a player using a rapid-fire mod) would have accelerated actions, would not necessarily cause a break in the predictions of most players. In my experience, many players in FPS games comment after a match about a sense of how 'fast' or 'slow' the match was. There is predictions by most players in FPS games that gameplay is on a continuum between exhilarating and plodding. Therefore, the machine's plan for addressing a rapid-fire mod and the player's prediction that gameplay can be paced with variability marks the use of a rapid-fire mod as

not being an example of dark play regardless of the complex motivations and intentions of the player who employed the software or hardware of the mod.

[15] Glitching-out is achieved through a specific action sequence and allows the player to leave the regular play area of the map. The player occupies a 'repressed' area of the map where they can interact with the regular area only in specific places.

[16] Bainbridge notes that espionage hacks such as ghosting (he categorizes as an exploit) are only "problematic" in competitive play (Bainbridge, 39).

[17] Zagal & Mateas also list other temporal anomalies in gaming as: temporal bubble, temporal warping, nonuniform temporality, hardware-related anomalies (Zagal & Mateas, 852). Arguably, lag is the temporal anomalous experience in gaming that is most common. However, not all anomalies would necessarily be examples of dark play. For example, the temporal bubble anomaly exists when there are two temporal frames with differing temporal logic. In GTA IV, playing the arcade machine mini-game freezes the time of the gameworld outside the mini-game. In this case, there is a disruption to embeddedness for the player who takes note of the discrepancy, however, the machine planned to set up the temporal frames in such a way. If the player notes the discrepancy as illogical then the temporal bubble could be considered dark play, but if they did not then there is no break in their prediction for how the gameworld manifests and the gameplay operates. Gameworld time does not have to match real world time for there to be immersion, although it is a quality that can enhance immersion.

[18] Although the controller was marketed by Nintendo, games designed and programmed for the NES (Nintendo Entertainment System) may not have accounted for the 'slow' button of the Advantage controller and thus those games would have no plan to address a speed hack altering gameplay in a manner that would be unbalanced for a game community. In this way, the slow button being used would still be dark play, but it is simply to say that two players using the controller and one remaining ignorant of the slow button's function, does not elevate the other player's use of the button to an instance of dark play provided that no informal rules (ie. Socially negotiated rules) have been broken.

[19] Newman sees dark play as a challenge to the immaculacy of code and robustness of game engines and therefore finds dark play to be creative, imaginative and inventive gameplay (Newman, 136). With machinima, the player was raw material in the gameworld and now the game is raw material in the artist world – a remediation of games, enfolding games dynamically into the transmedia realm (Newman, 144).

[20] It would seem that Galloway's notions on the impact of dark play (enabling or disabling) for the player are tied closely to a political-based argument about representation in games. In Chapter 3 of Galloway's collection of essays, he distinguishes "realism" from "realisticness" in games. Realisticness is about how congruent the representation is with its real-life referent, whereas realism is about whether all "code" is made visible. Galloway provides the example of the US military's video game, America's Army (United States Army, 2002), where Galloway argues that the Jihadist code is restricted – it is all about a political struggle between the dominant ideology and the formation of subaltern discourses. I would suggest that Galloway finds restricted code disabling in virtually all cases and any dark play which would render code more visible would be considered enabling for him. For my purposes, these distinctions are not very useful, because I am concerned with how dark play enables or disables a sense of presence through either rousing the player out of an incorporative state or disrupting a player's immersive state in the game. Galloway is setting up a debate between theorists who understand games as 'social control allegorithm' and those who view it as 'hermetic magic circle'. This would seem about as reductionist as the Ludology vs Narratology debate, except instead of having a technological underpinning, Galloway's debate is keyed-in on politics around the issue of informatics control and ideology.

[21] Consalvo writes, "cheating was a ludic activity, playful in intent, although a component of this effect was gained at the expense of others" (Consalvo *a*, 109).

[22] Galloway models 'countergaming' on Peter Wollen's counter-cinema model (Galloway, 117).

[23] Holmes borrows "unsureness" from Ernst Jentsch (1995) (Holmes, 259).

[24] Loading screens are an attempt to render latency invisible, but a static loading screen reduces presence through providing an interface not immediately relevant to gameplay and the gameworld. Bungie's Destiny solves this problem with dynamic cut-scene loading screens, however their sheer repetition still acts to foreground their function.

[25] On an interesting side-note, Calleja cites the work of William McIntosh (1996) who asserts goal hierarchy involves goals higher in the hierarchy being more abstract than goals lower in the hierarchy (Calleja, 155). Since most video games involve an understanding of mathematics and basic arithmetic at the lower level goals in the hierarchy (scores, lives, points, etc.) could dark play relate to an aversion to math? Perhaps "cheaters" are disproportionately players that are not accomplished, competent or comfortable in math and therefore seek to negate the importance of the lower goals in the hierarchy and simply pursue the higher goals that are abstract. Any study which seeks to correlate cheating in games with deviance may end up missing the third-variables of poor math aptitude and its connection to poor performance in school.

26 The magic circle is a concept emerging out of the earliest game studies scholarship (Johan Huizinga and Roger Caillois), however the media theory of Bolter & Grusin would suggest that the magic circle is illusory by virtue of games being constantly remediated by other media and remediating that other media.

27 Consalvo's work on asynchronous communication in games is based in the communication models of Claude Shannon and Warren Weaver. Noise (ie. signal degradation), which can produce asynchronous communication has two important technical problems – a semantic and effectiveness problem. The semantic problem understands the noise to be produced through the encoding process (for my purposes, a game engine that isn't optimized for running a new game may produce lag) and the effectiveness problem considers the noise produced through the decoding process (for example, a player doesn't have a robust enough internet package to run games without producing lag) (Consalvo b, 298).

28 Calleja borrows the concept of "excitatory homeostasis" from media psychology to explain that some players will seek to elevate their excitement if they are under-stimulated or reduce their excitement if over-stimulated (Calleja, 135). The intention behind dark play may be related to this effect, in that a player lacking skill or know-how may be overwhelmed by an online gaming experience and therefore chose to reduce stimulation through dark play. For example, once glitched-out of a map in Gears of War 2, the player is usually able to position away from potential gunfire and protect themselves from taking damage. Alternatively, 'trolling' dark play behaviour such as griefing and harassment may be a result of under-stimulation from a game that has become all too familiar. This player seeks to raise their excitement through dark play that is confrontational and elicits strong emotional responses from other players.

29 Bolter & Grusin write, "finally, just as there is nothing prior to the act of mediation, there is also a sense in which all mediation remediates the real. Mediation is the remediation of reality because media themselves are real and because the experience of media is the subject of remediation" (Bolter & Grusin, 59)

Worth noting is that the remediation model offered by Bolter & Grusin runs the risk of being both tautological and teleological, yet seeks to side-step the legitimacy of a charge of logical fallacy through claiming that media articulate innately in tautological and teleological ways through remediation – it is the nature of media. Remediation is the logic of tautology and teleology, which some philosophers and scholars may find contentious. Bolter & Grusin attempt certain analyses which reveal the dangers of 'remediating-the-illogical-as-logical'. For example, the authors often analyze video/computer games as "interactive film" – a facile description that doesn't seem to capture the nuances or fundamental properties of the interaction model on which video games are based. There is a notion for the authors that video game presentation has the quality of "tableaux vivants", much like film was theorized by some prior to the addition of synchronous sound (see Gunning's work on Cinema of Attractions, and note Peter Greenaway's baroque expression of tableau vivant in film). Bolter & Grusin refer to Myst (Broderbund, 1993) as an "interactive detective film". If we can only understand media through rendering their specificity subsequent to their remediation of previous media, then we may be analyzing the media by the terms of other media in an overdetermined way, therefore missing some of the qualities that are essentially unique to a particular medium. So, this stands as a warning more than anything else.

For example, Bolter & Grusin ascribe the staggered temporal logic of Myst's narrative the qualities of Michelangelo Antonioni films (at least the better known ones). However, the staggered temporal logic of Myst's narrative may be related to the game industry's nascent understanding of how to marry the narrative and ludic elements of a game effectively (recalling the crux of the Narratologist vs Ludologist debate). Art cinema's mode of expression (through auteurs such as Antonioni) is a highly sophisticated idiom in the language of film developing as both an evolution of earlier European traditions (Renoir, Bunuel, Gance, Lang, Murnau, Eisenstein) and a pointed critique of Hollywood studio system filmmaking with its dependence on cults of personality (star system) and decoupage classique editing systems. Therefore, the logic of Bolter & Grusin's comparative analysis could be re-enunciated by claiming that z-fighter glitches in Skyrim are akin to Picasso's Guernica. This is a non-sequitur as one is an example of unrefined writing of code in the game medium and the other is a refined development in the language of the film medium. (Bolter & Grusin, 96-97). Picasso's art is not akin to 'scribbles', however glitches emerge from poorly written code that is akin to scribbles. Also, Bolter & Grusin address the issue of tautology/teleology with remediation and offer "retrograde remediation" as a prismatic embeddedness of media such that there is simply a kind of ontological unity for all media (Bolter & Grusin, 148). Bolter & Grusin note that ubiquitous computing tends toward this prismatic embeddedness in how it "reforms reality" (Bolter & Grusin, 219).

30 Bolter & Grusin explain that immediacy is the transparent presentation of the real as practice and hypermediacy is the opacity of media as practice (Bolter & Grusin, 21).

I have made my own sense of Bolter and Grusin's theory of remediation as it relates to incorporation, immersion and presence. Immediacy is a temporal consolidation of media toward unity in a moment, and hypermediacy is a spatial consolidation of media toward unity in a place. Immediacy is about the form of the content, and hypermediacy is about the content of the form. Hypermediacy is about intersection and combination of media – the content of the form. Immediacy is about ignoring the mediation – the form of the content. These are some initial thoughts about the underlying structure or articulations of remediation which may come to explain its affordances and constraints.

[31] Hypermediacy seems opposite to immediacy but "the logic of hypermediacy multiplies the signs of mediation and in this way tries to reproduce the rich sensorium of human experience" (Bolter & Grusin, 34)

Supplementary Materials

Table 1: Comparison of Structural Models

Player Presence Model	Calleja	Galloway	Zagal & Mateas
Game-object	Material medium	Non-diegetic-machine	Fictive time
Game-process	Structural properties of game and environment	Diegetic-machine	Gameworld time
Gameplay-object	Human player	Diegetic-operator	Coordination time
Gameplay-process	Representational sign	Non-diegetic-operator	Real-world time

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