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A story without words: Challenges crafting narrative in the videogame *Rise*

Abstract:

How does one tell a story without words? How does one construct a narrative for an audience without relying on words to reveal character and circumstances? My digital vignette, *Rise*, accounts a character's morning routine without the exposition and cues provided by the narration or dialogue in traditional creative writing. This paper uses *Rise* as a lens through which to examine the inseparability of ludology and narratology in games, asserting that mechanical challenge can present narrative conflict, while player actions can become story. Although design choices can be used to guide the audience through a structured, linear narrative, the interpretation of that narrative relies on the audience's ability to assign meaning to their actions, as well as the objects they encounter within their environment. Navigating the challenges of storytelling without words while designing *Rise* has revealed new approaches to my creative practice, and has implications for understanding how game mechanics influence narrative development, particularly in how they can further the pedagogical purposes of serious games.

Biographical note:

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Creative Writing – Environmental storytelling – Ludology – Agency

In traditional literature, narrative typically revolves around words. In other mediums, the opportunities for telling stories in alternative ways increases, with visual, audio, and interactive elements being used to guide an audience through a narrative arc. But designing a narrative that does not rely on words is not straightforward. It is difficult to balance techniques of emergent and environmental storytelling in games so that players will understand the intent of the designer, while feeling as though they have the space to interpret events, objects, and spaces in their own ways.

Designing the narrative of my game, *Rise* (Barker 2017), began with trying to establish exactly what my goals for the player were. These ‘player experience goals’ are a fundamental aspect of serious games design (Fullerton 2014: 12); they represent the intended outcome(s) for the player, as curated and crafted by the designer. A player experience goal is part of the ‘playcentric design process’ and is a way of considering the player’s response to a game as early as possible in the development cycle (Fullerton 2014: 12). A player experience goal should describe ‘the type of experience that players will have during the game’ and should not involve the features or mechanics of the game (Fullerton 2014: 12); instead, the goal is to describe the situations the player will find themselves in or the emotional and intellectual responses they will have. Determining a player experience goal at the beginning of the design process ensures the player and their preferences (or requirements) are prioritised, and this helps to focus game development (Fullerton 2014: 12).

The initial player experience goal for *Rise* was inspired by a penultimate scene in *Metal Gear Solid 4: Guns of the Patriots* (Kojima Productions 2008); in this scene, protagonist Old Snake crawls, painstakingly, down the length of an irradiated corridor, propelled by the player who desperately mashes the button prompt flashing on screen. This sequence stretches on for what is conventionally too long; the player’s hands will likely cramp and fatigue in such a protracted exercise. But it is at that exact moment, through the over-long design of this sequence, that the player and protagonist are in simultaneous pain – united through a shared experience, connected through the controller and through pain. This is the experience that I wanted to bring to players of *Rise*. To achieve this, I designed a clear compound player experience goal: the player should both understand and feel what it is like to live with a chronic health condition.

To further unpack this player experience goal, next I needed to determine the chronic health condition(s) I would represent in *Rise* – a decision which was influenced by how symptoms and lived experiences could be translated into mechanics and narrative. This decision was greatly impacted by the game’s target audience; by establishing my target audience as those who do not suffer from chronic health conditions, I was able to better focus my design process around that type of player. With the explicit aim of communicating the experience of living with a chronic health condition, a target audience composed of players without chronic health conditions was the most appropriate; players with a chronic health condition would obviously have little to gain from such a game. The next goal was to determine exactly what the nature of the player’s experience would be.

I began with Christine Miserandino’s (2015) ‘The Spoon Theory’, an anecdotal narrative that has been developed (informally and non-academically) into an analogy

and means of communication between sufferers and non-sufferers of chronic health conditions. The Spoon Theory – and the personal narrative that forms its central thesis – emphasises Miserandino’s personal experience with a specific condition: Lupus. Despite this limited scope, The Spoon Theory has evolved to accommodate and apply to various chronic health conditions. I have used The Spoon Theory in this broad sense as a lens through which to view chronic health conditions in general. For *Rise*, The Spoon Theory was also useful beyond the general sense; the specifics of Miserandino’s experience – her difficulty opening her eyes each morning, her pain and struggle with something as simple as buttons – gave me key points around which to structure a narrative.

Because of the recurring, quotidian nature of chronic health conditions, a vignette narrative structure seemed most appropriate for revealing these key points to the player: *Rise* would be most effective at trying to capture only a small snapshot of the experience, centring on a morning routine. Having a targeted focus and smaller scope would also mean that value judgements would be left for the player to make for themselves, instead of having an explicit, designer-crafted (positive, negative, or otherwise) resolution to a narrative arc forced upon them.

My goal was to create a space in which the player could, at their discretion, interact with the world in a way that furthered the player experience goal – understanding and feeling what it was like to live with a chronic health condition. But the exact nature of that space – and those interactions – was still uncertain. Because I wanted players to arrive at their own conclusions regarding the difficulties of chronic health conditions, I favoured an approach that prioritised player freedom. I did not include dialogue or a player-character body (either when the player looks down or looks in a mirror) to allow the player to imagine whatever figure they liked, in line with Papale’s (2014) notions of projection and identification.

‘Identification’ is a term frequently used in game studies to categorise psychological responses to texts that lead to identity formation (Papale 2014: n.p.); ‘projection’ is considered the ‘conceptual opposite’ of identification, as the personality, values, and choices of the player flow onto the character instead of the reverse (Papale 2014: n.p.). The extent to which a player is needed in this transaction can vary; some characters are mostly pre-formed and so the interactions are minimal, such as player-chosen dialogue; other characters are blank slates and have no pre-determined traits or are entirely created by the player using in-game character creation tools, such as in *The Sims* (Maxis 2000). Characters with minimal pre-existing detail offer greater opportunity for projection, which can more effectively facilitate identity formation as the player tests their own boundaries.

The lack of dialogue and body in *Rise* helped me to create a ‘blank slate’ player-character; while this remained in the final build of *Rise*, there were additional design decisions I initially favoured that were iterated out of the end product. One such decision was a sandbox-style approach: here, the player would be free to pursue any of the various tasks (such as showering and taking medicine) in any order.

This original idea of having a sandbox was reinforced and supported by both educational theories and game design principles. The Montessori schooling system is

‘organized [sic] around students pursuing questions of intellectual interest’ (Squire 2005: 6), and Squire (2005) suggests that videogames are well-suited to this environment – and in some instances, are already being used within them. Videogames can be a component of the prepared environments constructed in Montessori schooling (Huxel 2013), and in turn, the theory behind the prepared environment can be used to inform the design of games that are attempting to educate players. A ‘prepared environment’ is a space that a facilitator has constructed with the intent of educating students, and allows those students to ‘make choices while encouraging and supporting independence, curiosity, intrinsic motivation, and movement’ (Huxel 2013: 33). This prepared environment is what I had anticipated as the ideal direction for players: here, they could choose to perform whichever of the prepared tasks they wished, gleaning an understanding from each of the tasks and feeling a sense of ownership over the ‘learning’ because it was not directed.

The relative ‘freedom’ provided by a prepared environment relates to the notion of player agency. In game studies, player agency is primarily described in terms of a player’s freedom to make choices that align with their own desires (Frasca 2001: 174; MacCallum-Stewart & Parsler 2007: 1; Mateas & Stern 2006: 647; Wardrip-Fruin et al. 2009: 1). In extreme cases, the prioritisation of player freedom insists that players should be given control of the rules that govern the game system or authorial control over a game’s narrative (Thomas 2006). This understanding of player agency conflicts with the ability of an author to create a ‘compelling work’ that guides the user through a pre-designed experience, ‘be that work primarily ludic or narrative in nature’ (Tanenbaum & Tanenbaum 2010: 113).

In the case of *Rise*, a sandbox model that prioritises player freedom was unsuitable and incompatible with a believable narrative: allowing the player to do (or not do) whatever they wanted in whatever order they wished would allow for logic-breaking sequences, like the player getting dressed and then taking a shower. Although there were both logical and mechanical work-arounds to these kinds of problems – the player can assume that the avatar automatically re-dresses after the shower; the getting dressed event could be reset so that the player had to perform it again post-shower – each served only to unnecessarily complicate the narrative. The solution was simple: disallow the player from using a small degree of agency to mitigate these problems. Implementing a linear, directed structure would allow me to curate the player’s experience, ensuring that there are fewer obstacles to the player experience goal and to the player’s suspension of disbelief.

To this end, I imposed ‘authorial control’ over the player of *Rise* to ensure in-game events were sequenced in a way that made narrative sense for the experience I hoped to convey. To some game studies scholars, there is a ‘fundamental conflict’ between the linearity of authorial control over a narrative and a player’s ability to interact within a game world (Bruckheimer 2009: n.p.). While designer Jonathan Blow (in Bruckheimer 2009) believes that the solution to this conflict is to simply remove narrative from games (as he believes ‘full agency’ for the player is more important than narrative), Bruckheimer instead suggests deceiving players into believing games are more interactive than they actually are. ‘Illusory agency’ is a way of engaging players in a more limited number of options (MacCallum-Stewart & Parsler 2007: 1), and helps

players feel as though they can take ‘meaningful action’ despite their decisions having ‘little or no meaning within the fiction creation by the game’ (Murray 2016: 126).

A common way for illusory agency to be integrated into games is through ‘quicktime events’. In these events, players interact with a game system in a way that seems to progress the action, without actually having an influence over the narrative outcomes (Tanenbaum & Tanenbaum 2010: 113). The idea of a quicktime event is that, by allowing the player to engage with a sequence in some way, they feel as though they have more power over that sequence and this encourages the player to become more emotionally invested in the scene (Tanenbaum & Tanenbaum 2010: 113). My assumption was that the player would feel greater responsibility and ownership if they were not ‘being forced’ to play a game that is, at times, almost hostile towards them.

Before I further discuss the narrative value of quicktime events in *Rise*, it seems important to acknowledge a longstanding, seemingly undying talking point within games academia: the ludology versus narratology debate. Despite insistence from some scholars that the debate never actually took place (Frasca 2003) and attempts to quash the debate once and for all (Murray 2005), it now seems destined that all scholars of videogames wrestle with whether game narrative is a worthy point of examination (and, in a fatiguing meta-example, whether it is important to engage with this debate at all). My position on this is simple: narrative is a required ingredient if we are to transform a box moving upwards along the Y-axis and then returning downwards onto another box into Mario jumping on a goomba. Without narrative to contextualise actions, there are no (or, perhaps, too many) ways to interpret the on-screen outcomes of a player pressing buttons. This is essential in relation to *Rise*: the quicktime events are an abstraction, more similar to boxes on axes than to Mario jumping, but being embedded within a narrative context gives each quicktime event meaning for the player.

Rise includes five points in which the player needs to perform a series of quicktime events: getting up, having a shower, putting on a shirt, putting on shoes, and leaving via the door. In two of these instances, players can choose between two options – an easier or more difficult option – which provides illusory agency to the player, and which also serves to capture some of the lived experience of someone with a chronic health condition. In *Depression Quest* (Quinn 2013), the presence of both choices and not-choices (that is, options that are visible but cannot be chosen) communicates ideas to the player in a subtle, contextualised way, allowing for greater understanding without the need for explicit statements about the conditions; in *Rise*, these two choice points between plain-but-easy and nice-but-difficult clothing options communicates that dressing yourself while managing chronic health conditions is not always a simple fashion decision, but can instead be a compromise between what is desired and what is physically possible.

These moments must be completed in a logical order, as required by the system, to maintain verisimilitude; the option to perform tasks out of order simply does not appear to the player. To help the player find and remain on the linear path, a checklist of required actions (in order) appears on-screen once the player has turned off the phone alarm. The first action (taking medication) does not need to be performed first, as it is

not part of the same sequential process as the other tasks; however, it is still a mandatory task and must be completed before the final challenge of the game can be activated.

Despite the player having the freedom to move around the space as they wish, each of these quicktime events are tasks that guide the narrative towards the game's ending. Riedl, Saretto and Young (2003: 747) describe the ways a game guides a player through a pre-determined narrative as acts of 'narrative mediation', which are designed to manage a user's desires and actions with those of the game system, while still attempting to keep the player engaged in their interactions and maintaining narrative cohesion. The two techniques for narrative mediation they describe are 'accommodation' (where the game system accommodates the actions of the user and responds in a satisfying way) and 'intervention' (where a game system redirects the player when they attempt to make unexpected choices or influence the narrative in an undesired way) (Riedl, Saretto & Young 2003: 747). *Rise* does not explicitly accommodate or intervene when the player attempts to complete key actions in the 'incorrect' order. If the actions still make logical sense (such as having a shower before turning off their alarm), the game will allow the player to complete this action without explicitly addressing this; however, if the player attempts to complete actions in an illogical order (such as trying to put on shoes before taking a shower) the option simply does not appear for the player at that time.

As the player's main form of interaction in the game, the quicktime events also serve as the main form of narrative; it is these sequences, their failure or completion and the time taken to achieve either, that create the 'plot' through the player's interpretation. Narratological approaches to game design and analysis allow developers to consider the player as a collaborator within the construction of narrative (Tanenbaum & Tanenbaum 2008: 251). Through this process of collaboration, the player can see the narrative elements that the developer has provided for them, and interpret them in their own ways, constructing a unique story that is guided but not prescribed by the developer. In *Rise*, this process of player interpretation begins with the 'cold open': the player, their avatar asleep, sees only a black screen as an alarm starts to fade into hearing.

The cold open serves several functions: it spotlights the notion that managing chronic health conditions can begin even before a person is awake, as per Miserandino's personal account; it destabilises the player by shirking conventions, forcing the player to experiment – a necessary behaviour if they are to succeed; and it ensures that the player understands the form and function of quicktime events.

This last point is perhaps the most important, mechanically. While presented with a black screen and an increasingly loud alarm tone, the player should realise that the game is not bugged or broken but instead awaiting some unspecified input. Once the player presses the A button, a prompt appears with accompanying explanation: 'Rapidly press A'. This first quicktime event acts as a kind of tutorial – accompanying text beneath the prompts explains what each of the input icons means (rapid button press / button hold / thumbstick movement), so that the player understands these in preparation for future challenges where the text is not present. A progress bar also appears below the input icons (and, unlike the tutorial text, remains for each subsequent quicktime event),

-serving a similar purpose: the bar fills as the player performs the input correctly but shrinks if the player does not, reinforcing the requirements and providing the player with instant feedback on their performance. The connection between player action (pressing a button) and avatar action (opening eyes) ensures the player is conscious of the fact that their inputs are directly tied to contextual actions in the world.

Each quicktime event is made up of smaller sequences. Where possible, the inputs required in each sequence reflect the action they relate to, to further verisimilitude and to provide a sense of progression to the player in lieu of graphical representation through avatar animations. The first quicktime event, waking up, is made up of three sections: rapidly pressing the A button to open eyes; holding the left bumper while pushing up on the left thumbstick to sit upright; holding the right thumbstick to the right to get out of the bed. Likewise, the shower quicktime event comprises six separate sequences: turning on the tap, lathering the soap, washing, turning off the tap, drying off. These tell a story in stages, modified based on the player's actions: a player who takes a long time to initially press A but has no trouble with the following inputs helps to create a narrative where the avatar struggles to awaken but then exits their bed relatively quickly.

As previously mentioned, *Rise* contains two opportunities for the player to make 'significant' choices between quicktime events: which shirt and which pair of shoes to wear. More than cosmetic decisions, these options provide the player with illusory agency, split difficulty levels, and insight into conscious decisions that people with chronic health conditions make daily. Ostensibly, the options seem innocuous; there is, after all, little functional difference between a t-shirt and a dress shirt. In the context of *Rise*, however, the difference is more pronounced: the buttons on the dress shirt are a problem for someone with a chronic health condition, requiring fine-motor skills that can cause pain and fatigue, and this means the quicktime event is designed to be longer, repetitive, and more difficult. The t-shirt, conversely, is relatively simple and short. The choice between shoes is similar: the slip-on shoes are quite brief and basic, while the nicer, theoretically more enticing boots are – thanks to the laces – a greater challenge.

One important aspect of the input sequences for quicktime events is that they often require unusual, non-standard usage of the controller. Keogh (2018) notes that this idea of 'standardised' controller use is a self-propagating phenomenon – games seeking mass appeal rely on common control forms that are already understood, thereby continuing their prevalence. The result is a required 'embodied literacy' for games, which Keogh (2018: n.p.) defines as 'where the player learns how to perceive and embody the videogame through particular gestures trained by particular input devices'. Keogh (2018: n.p.) goes on to explain how the 'hegemony of input' has implications regarding the type of bodies prioritised and permitted (namely able, non-disabled, bodies), which has ramifications for non-able-bodied players attempting to access mainstream games. The primary purpose of *Rise* is not to comment on this embodied literacy; however, by forcing players to use a controller in unconventional ways, my game is able to capture some of the experience that non-able-bodied users have when interacting with dominant, standardised control schemes.

It is the existence of these standardised controls that allow me to develop a control scheme that can destabilise the player and challenge the comfortable. Performing regular tasks with a chronic health condition can require using the body in atypical ways, whether to minimise pain, off-set weaknesses, or prevent fatigue, among other possibilities; if the player experience goal is to be achieved, and if the player is to both feel and understand what it is like to have a chronic health condition, then their comfort zone must be broken and the expectations of controller-use subverted. But it is important to acknowledge that *Rise*, while seeking to tell a story of chronic health conditions, is explicitly unplayable by a large cross-section of people with chronic health conditions.

Beyond quicktime events, the desire to destabilise the player also appears in the movement control scheme. Contemporary first-person games use left thumbstick for moving the avatar's body and the right thumbstick for rotating the camera, with two main variants: inverted Y-axis, where tilting the right stick downwards makes the camera look up; and non-inverted Y-axis, where tilting the right stick down makes the camera look down. While most contemporary videogames allow players to customise their control type preference, this did not reconcile with my plans for a cold open to *Rise*; I wanted players to be launched straight in – without even being certain that the game had begun – to subvert expectations and establish my tone, but could not do so if I presented players with the option of choosing their control type first. As I tested *Rise* with an inverted control type – my natural preference – by myself and with others, I realised that the added difficulty in controlling the character for those who preferred non-inverted (or were not comfortable with game controllers in general) served to reinforce a key design goal: chronic health conditions can make simple tasks difficult in the same way as an unfamiliar interface can make navigating a game world difficult.

To understand what elements (other than quicktime events) I could implement to support the construction of the narrative, I had to better understand what types of player I expected (or wanted) to have. The behaviour and desires of players is something that many scholars have attempted to categorise, and one of the more common taxonomies is Bartle's Player Types (Bartle 1996). In this taxonomy, four broad categories of player are defined: the Killer, who has an affinity for competition; the Achiever, who likes to demonstrate mastery; the Socialiser, who enjoys multiplayer and cooperation; and the Explorer, who embodies curiosity. Bartle's Player Types are not exclusive; players can belong to any combination of categories and how much they align with these categories is not static.

This last type, the Explorer, is one I decided to cater for in developing *Rise* by incorporating elements that reward inquisitive, curious play within the game space. Bartle (1996: n.p.) describes Explorers as players wanting 'to find out as much as they can about the virtual world'; this means the curiosity extends beyond the 'physical' space (though that is also a component), and includes understanding of the narrative and premise. Loosely speaking, there are two tiers of narrative in games: things that are directly pertinent to the player's narrative, and everything else. In a narrative-centric game like *Mass Effect* (BioWare 2007), non-Explorers can play through the main narrative in a (mostly) linear fashion, while Explorer type players can choose to access a broad range of secondary narratives about people, places, and events (both current

and historical) in the form of side-quests, non-player character dialogue, cut scenes, and written materials like the Wikipedia-esque codex entries, in order to further develop their understanding of the game. Another diegetic implementation of narrative – both primary and secondary – that rewards the type of play performed by Explorers is known as ‘environmental storytelling’: the act of ‘staging player-space with environmental properties’ or objects, characters, and events that ‘[further] the narrative of the game’ (Smith & Worch 2010).

Elements of environmental storytelling in *Rise* reward Explorer-type players with additional information about the narrative by providing contextual clues. These details are important for players who are not necessarily primary-Explorers, as well; Jenkins (2004: 126) suggests that narrative comprehension ‘is an active process’ performed by players, based on ‘information drawn from textual cues and clues’, and without environmental storytelling to provide these clues, players have less to work with when interpreting and constructing the narrative. Additionally, Carson (2000: n.p.) notes that the process of figuring out the nature of things is more rewarding than simply having something explained, and environmental storytelling – or, as Carson puts it, ‘part of the art of game design’ – is the way designers guide players towards the appropriate, desired conclusions without destroying immersion.

(It should be noted that *Rise* can be classified as a ‘walking simulator’, with players engaging with the environment in ways that are similar to games like The Fullbright Company’s *Gone Home* (2013) and Campo Santo’s *Firewatch* (2016); however, engaging with scholarly literature regarding walking simulators is outside the scope of this paper.)

With the quicktime events being the primary vehicle for narrative in *Rise*, I decided some elements of environmental storytelling were necessary to lay the groundwork, ensure immersion, and provide something for the inquisitive player to discover. Some of these elements – such as a desk with laptop, a shelf full of books, and other houses visible from the bedroom window – serve primarily to create and maintain verisimilitude; they help to transform the game space into a believable, ‘real’ world.

Other game objects have been placed within the game space in deliberate ways and serve a more direct narrative purpose. For example, on the desk is a more didactic piece of environmental storytelling: a (fake) book, entitled ‘Finding Balance with CFS’, suggests that the avatar has chronic fatigue syndrome, which is one of many possible explanations for their difficulties. In addition to providing narrative clues to the player, this book also has a personal purpose: its ‘author’ is a friend of mine who was recently diagnosed with chronic fatigue syndrome, and his experiences also helped inspire aspects of *Rise*. By placing the book separate from the others on the bookshelf, I hope to entice Explorer-type players to investigate and learn more about the narrative.

Some objects within the game space of *Rise* also have a purpose beyond narrative guidance. The phone serves two important functions: its alarm is the only indication to the player that the cold open is not, in fact, a bug or crash, and it also provides a believable method of presenting the player with guidance (in the form of a checklist). Without the phone, purely non-diegetic tools would have to be used to prompt the player, restricting the level of immersion possible.

Certain objects were also less straightforward in their implementation. Deciding what to do with the medication was difficult. For some sufferers of chronic health conditions, a large collection of daily medication is a constant reminder of all the negative effects and side effects of having that chronic health condition. With that in mind, I toyed with the idea of making the act of taking medication the most difficult quicktime event. But presenting an overly melodramatic or intense negative experience clashed with my goals; *Rise* is meant to generate empathy, not pity. Instead, taking medication – arguably the most important action the player can perform in *Rise* – is set to a single, simple button press. The visuals of this medication still serve as an important piece of environmental storytelling: three bottles of medicine next to a pill organiser (which, curious Explorer-types may notice, is up to the second day of the week) suggest to players that the events of this vignette are a regular, ongoing occurrence that require a not-insignificant amount of medication to manage.

But as I reached the conclusion of the game development process, I was reminded that not every player is a primary-Explorer type, or has any interest in Explorer-type behaviours. With only abstract quicktime events and behaviour-reliant environmental storytelling to communicate key points of the narrative and player experience goal, I felt it was necessary to provide players with additional guidance. As a result, I added contextualising information at the game's conclusion in text form – essentially the only informative text provided in the game – to ensure that the player is aware of the intended purpose, even if they did not connect with it while playing. It can be considered a (sign of) weakness in design – or at least a lack of confidence in the design. Even so, I was determined to implement this component in the way that was most conducive to the player experience goals: this text arrives only at the end, allowing players to piece together the narrative themselves during play before having those conclusions validated at its climax.

The narrative in *Rise* is a negotiation between the designer and the player, specifically crafted to support the player experience goals. As the designer, I have provided abstract quicktime events, environmental elements, significant game objects, and narrative text for players to interact with, which they can then interpret in their own ways; this act of interpretation is the player's contribution to the narrative. Although I could have chosen not to give the player additional text – and in doing so, could have produced a 'purely' environmental storytelling experience – I chose to supplement my experimental approach to narrative to ensure the intent was understood by the player. This increases my authorial influence on the story, while still providing space for players to create their own stories: how easy or difficult they find challenges, how easily they navigate the game space, how much they choose to explore, what they choose to wear, and how they feel during each of the quicktime events and their outcomes – these all contribute to a personalised experience when playing *Rise*.

Rise demonstrates the *possibility* of creating such a game space and the potential for creating interactive stories that lean into the collaborative designer-player relationship, relying solely on the player's interpretation of audio-visual cues rather than the explicit use of text.

Works cited

- Barker, D 2017 *Rise* PC: Dakoda Barker
- Bartle, R 1996 'Hearts, Clubs, Diamonds, Spades: Players Who Suit Muds' *Journal of MUD Research* 1 (1), 19
- BioWare 2007 *Mass Effect* Xbox 360: Electronic Arts
- Bruckheimer, H 2009 'String Theory: The Illusion of Videogame Interactivity' *The Escapist*, at http://www.escapistmagazine.com/articles/view/video-games/issues/issue_195/5910-String-Theory-The-Illusion-of-Videogame-Interactivity (accessed 9 June 2017)
- Campo Santo 2016 *Firewatch* PC: Campo Santo
- Carson, D 2000 'Environmental Storytelling: Creating Immersive 3d Worlds Using Lessons Learned from the Theme Park Industry' *Gamasutra*, at http://www.gamasutra.com/view/feature/131594/environmental_storytelling_.php (accessed 9 June 2017)
- Frasca, G 2001 'Rethinking Agency and Immersion: Video Games as a Means of Consciousness-Raising' *Digital Creativity* 12 (3), 167-74
- 2003 'Ludologists Love Stories, Too: Notes from a Debate That Never Took Place' *Proceedings of the 2003 DiGRA International Conference*
- The Fullbright Company 2013 *Gone Home* PC: The Fullbright Company
- Fullerton, T 2014 *Game Design Workshop: A Playcentric Approach to Creating Innovative Games* Boca Raton, FL: CRC Press
- Huxel, AC 2013 'Authentic Montessori: The Teacher Makes the Difference' *Montessori Life: A Publication of the American Montessori Society* 25 (2), 32-4
- Jenkins, H 2004 'Game Design as Narrative Architecture' in Wardrip-Fruin N and Harrigan, P (eds) *First Person: New Media as Story, Performance, and Game* Cambridge, MA: The MIT Press
- Keogh, B 2018 *A Play of Bodies: How We Perceive Videogames* Cambridge, MA: The MIT Press
- Kojima Productions 2008 *Metal Gear Solid 4: Guns of the Patriots* PlayStation 3: Konami
- MacCallum-Stewart, E and Parsler, J 2007 'Illusory Agency in Vampire: The Masquerade—Bloodlines' *Dichtung Digital* 37
- Mateas, M and Stern, A 2006 'Interaction and Narrative' *The game design reader: A rules of play anthology* 1, 642-69
- Maxis 2000 *The Sims* PC: Maxis
- Miserandino, C 2015 'The Spoon Theory' *But You Don't Look Sick*, at <http://www.butyoudontlooksick.com/articles/written-by-christine/the-spoon-theory/> (accessed 9 September 2015)
- Murray, JH 2005 'The Last Word on Ludology V Narratology in Game Studies' in *Proceedings of the 2005 DiGRA International Conference*
- 2016 *Hamlet on the Holodeck* New York: Simon and Schuster
- Papale, L 2014 'Beyond Identification: Defining the Relationships between Player and Avatar' *Journal of Games Criticism* 1 (2), 1-12
- Quinn, Z 2013 *Depression Quest* Web Browser: Zoe Quinn, at <http://www.depressionquest.com/dqfinal.html>
- Riedl, M, Saretto, CJ and Young, RM 2003 'Managing Interaction between Users and Agents in a Multi-Agent Storytelling Environment' in *Proceedings of the Second International Joint Conference on Autonomous Agents and Multiagent Systems*, 741-8
- Smith, H and Worch, M 2010 'What Happened Here?' *Environmental Storytelling* GDC Vault

- Squire, K 2005 'Changing the Game: What Happens When Video Games Enter the Classroom?' *Innovate: Journal of Online Education* 1 (6), 5
- Tanenbaum, J & Tanenbaum, K 2008 'Improvisation and Performance as Models for Interacting with Stories' in *Joint International Conference on Interactive Digital Storytelling*, 250-63
- 2010 'Agency as Commitment to Meaning: Communicative Competence in Games' *Digital Creativity* 21 (1), 11-7
- Thomas, N 2006 'Video Games as Moral Universes' *TOPIA: Canadian Journal of Cultural Studies* 11, 101-15
- Wardrip-Fruin, N, Mateas, M, Dow, S and Sali, S 2009 'Agency Reconsidered' *Proceedings of the 2009 DiGRA International Conference* 5