

From Zelda to Stanley: Comparing the Integrative Complexity of Six Video Game Genres

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Abstract

Proponents of the walking simulator genre laud it for its complex storytelling. As Gohardani (2017) explains, walking simulators are “about dropping the player into an experience packed with ... a compelling narrative” (para. 5). In order to more fully understand why this genre is so closely associated with storytelling and to provide insight into the underlying psychology of genre in video games, this article linguistically evaluates the narratives of walking simulators. It uses integrative complexity, a linguistic variable with an established research history, to compare the complexity of the writing in walking simulators to the writing in five mainstream video game genres (RPGs, shooters, action/adventure games, fighting games, and strategy games). Randomly sampling dialogue from 30 video games, a one-way ANOVA (analysis of variance) revealed no statistically significant linguistic differences between the genres. These results indicate that compelling and complex writing can be found in any genre and is likely not a function of any individual genre, contrary to popular opinion. This study provides a foundation for future researchers to build upon and continue the linguistic evaluation of walking simulators.

Keywords

Integrative complexity; genre; walking simulators; RPGs; linguistics



Introduction

The purpose of the following experiment is to explore the underlying psychology of walking simulators and video game genres that can be revealed through linguistic analysis. Gohardani (2017) asserts that walking simulators are “about dropping the player into an experience packed with ... a compelling narrative” (para. 5). He argues that walking simulators highly prioritize story, resulting in more complex narratives than seen in other, more conventional genres of video games. Integrative complexity—a linguistic variable that is defined below—provides an insightful look into the nuances and cognitive process of storytelling, narrative, and writing (see McCullough, 2018a; 2018b; McCullough & Conway, 2017; 2018) and, more recently, the variable has been employed in the study of video games (see McCullough, 2019). In this article, the integrative complexity of walking simulators is compared to the integrative complexity of five mainstream, traditional genres of video games (fighting games, strategy games, role-playing games [RPGs], action/adventure games, and shooters¹) to test if there are measurable, quantifiable differences in the inherent structure of their respective narratives and writing.

Walking Simulators: Are They Video Games?

The origin of video games is rooted in the military-industrial complex. As Clark (2017) writes:

The first video games were war games, commissioned and designed by the Department of Defense for the explicit purpose of simulating war with the Soviet Union. Many of the design aspects of video games today still borrow from war games: the use of a “heads up display,” the onslaught of enemy targets, the vast predilection for violence, and even the staggering amount of money the Pentagon spends financing the video gaming world. (para. 2)

However, walking simulators “have extended the definition of games, from physical and mental challenges, to narrative experiences that tease nuanced emotional responses from players” (Campbell, 2017, para. 1), distinguishing themselves from this origin in the military-industrial complex. According to Fullerton (2019), walking simulators can be defined as “exploratory games based on contemplation and environmental narratives” (p. 339). Similarly, Rivera-Dundas (2017) describes walking simulators as games that “eschew puzzles or combat in favor of exploration and discovery” (p. 128), and Şengün (2017) stresses their “lack of action, conflict, fighting, or other forms of excitement” (p. 32) as defining characteristics.

¹ Here, the term “shooter” is used inclusively, encompassing first-person shooters like the *Call of Duty* games (Activision, 2003–) and third-person shooters like the *Splatoon* games (Nintendo, 2015–).

Moreover, walking simulators appear to prioritize story over gameplay (Gohardani, 2017). Their players move “through virtual spaces to discover fragments of narratives that may or may not form a coherent story” (Şengün, 2017, p. 30). These fragments typically come in the form of audio recordings, documents, hand-written letters, or pieces of paper that provide story details. They can also take more abstract forms like “memories, emotions and images” (Marak, 2017, p. 57). Through interaction with these fragments and the larger environment of these games, players navigate and decode the plot. The number of fragments players encounter depends on their choices—how much they explore the environments and how committed they are to discovering the story. Thus, walking simulators “provide the player with a nuanced narrative experience through morally-ambiguous choices, exploration, and immersion” (Gohardani, 2017, para. 2).

Many gamers and video game critics have questioned if walking simulators can even be classified as video games, with some walking simulators originally being labelled with the “not a game” tag on Steam (Şengün, 2017).² However, walking simulators are not without their defenders and fans. For example, Clark (2017) writes that walking simulators “may well be the most artful and innovative genre within video gaming” (para. 20). Similar sentiments are expressed by Campbell (2016), Gohardani (2017), and other online commentators.

Much of disparity in acceptance or rejection of walking simulators appears rooted in individual expectations of audience members. Gohardani (2017) writes:

This expectation to receive a gameplay-based challenge explains the difference between critical and fan reception to [walking simulators] ... While some fans reacted equally enthusiastically, presumably those familiar with genre distinctions in the world of gaming, others lambasted the title for a lack of emphasis on gameplay, and the relative ‘ease’ with which it can be completed. (para. 6)

Despite accusations of walking simulators not being actual video games, walking simulators have firmly established themselves within the video game landscape and are not likely to disappear from the discourse (Clark, 2017). This is highlighted in Steam’s removal of the “not a game” tag from their system (Şengün, 2017) and the acceptance of the genre and its games by many accredited institutions. For example, *The Stanley Parable* (Galactic Café, 2013) won awards at the 2013 National Academy of Video Game Trade Reviewers awards and the 2014

² According to Şengün (2017), “initially the name ‘walking simulator’ was devised as a derogatory term to ridicule those games whose sole interaction was typically exploration of a narrative through movement in space; however, the term was eventually neutralized through widespread adoption” (p. 31).

Independent Games Festival, and was nominated for the “Best Story,” “Best Debut Game,” and “Game Innovation” awards at the 2014 BAFTAs (British Academy of Film and Television Arts awards).

Moreover, walking simulators have been largely embraced as compelling opportunities for engaging scholarship and research by those across various academic communities—the existence of this special issue is a prime example. Other examples include Kagen (2018), who critiques toxic masculinity through a discussion of *Firewatch* (Campo Santo, 2016), and Colthup (2018), who explores the implications of problematic grammar in *Dear Esther* (The Chinese Room, 2012). The latter example is of particular interest because its focus on grammar suggests the applicability of linguistics in the study of walking simulators.

What is Integrative Complexity?

Integrative complexity is a linguistic variable that has proven useful for understanding the underlying psychology of popular culture, fiction, and storytelling. According to Gruenfeld (1995), at the lower levels, the variable analyzes differentiation, “which refers to recognition of multiple perspectives on, or dimensions of, an issue” (p. 5), and at the higher levels, it measures the presence of integration, “which refers to recognition of conceptual relations among differentiated dimensions” (p. 5). This means that a complex speaker/writer both addresses various ideas and perspectives and then meaningfully explains their connections, while a simplistic speaker/writer does neither. Integrative complexity is scored on a scale of one to seven: A score of one indicates a lack of both differentiation and integration, a score of three indicates the presence of only differentiation, and scores of five and above indicate the presence of both differentiation and integration. Scores of two and four represent transitional scores, where differentiation and integration are more implicit and emergent rather than explicit and fully expressed (see Baker-Brown et al., 1992 for a more thorough explanation of scoring).

Integrative complexity has a well-established history as a research variable. While traditionally it has been utilized in research relevant to political psychology (e.g. Conway & Conway, 2011; Suedfeld & Leighton, 2002; Thoemmes & Conway, 2007), more recently, integrative complexity has been applied to the domain of popular culture, including video games. Integrative complexity has primarily been used to explore the perceptions of quality in various different popular culture media: It has been used to predict outcomes during the film award season (McCullough & Conway, 2017), to analyze the success of fanfictions (McCullough, 2018a) and movie critics on YouTube (McCullough, 2018b), and to predict winners at the Spike Video Game awards (McCullough, 2019). But it has also been used to more directly explore storytelling. For example, McCullough and Conway (2018) explored the unique levels of integrative complexity in books, films, television shows,

and video games based on different character roles and types (royalty, terrorists, tyrants, chefs, etc.).

According to the value pluralism model (Tetlock, 1986), higher levels of integrative complexity can be induced when core ideals or beliefs come into conflict, and, as McCullough (2018a) explains, this conflict can occur at the character-level, narrative-level, and thematic-level in works of fiction and writing. As such, integrative complexity is applicable to the study and understanding of popular culture and storytelling because “the measurement provides a unique indicator of psychological process that are not necessarily influenced by overt factors” (McCullough & Conway, 2017, p. 2). These factors include personality inclination, whether a statement is a defense of a topic or a critique, and openness to new information (Conway et al., 2014). As such, it offers “a potential window into the behind-the-scenes psychology of the human experience” (McCullough & Conway, 2018, p. 519). It does not examine what is being said; instead, it examines *how* it is being said. It is a measurement of structure, not content. This mitigates a bias based on content and makes the variable inclusive in terms of applicability to all types of stories and narratives, allowing for an examination of storytelling at one of its most fundamental levels.

This strength of integrative complexity is especially important in the context of the present study. Video game genres go beyond the traditional boundaries of other media genres (films, novels, television shows, etc.) because they also incorporate factors of interactivity and game mechanics—not just story or aesthetic elements (Kirkland, 2005). Because this research is interested in comparisons in terms of underlying story structure (how is the storytelling in walking simulators similar or dissimilar to the storytelling in other video game genres?), integrative complexity’s ability to analyze the narratives in video games separate from their contents and mechanics is of value.

Walking Simulators, Genre, and Integrative Complexity: Expectations and Hypothesis

Do walking simulators exhibit statistically higher or lower levels of integrative complexity than fighting games, RPGs, strategy games, action/adventure games, and shooters? Higher levels of integrative complexity tend to be the result of greater forethought and planning on the part of writers/creators (Baker-Brown et al., 1992). Because of the walking simulator’s prioritization of story, those stories may experience a more robust, extensive creative process than the average story or narrative in a more traditional video game genre. This research was therefore conducted under the hypothesis that walking simulators will score significantly higher in terms of integrative complexity than the other tested genres.

Methods

Sampling Video Games

The present study compares the integrative complexity of walking simulators to five more traditional and mainstream genres: fighting games, strategy games, RPGs, action/adventure games, and shooters.³ These genres, according to the ESA (2016), are “Super Genres,” yielding incredibly high numbers of units (games) sold. For example, RPGs in 2015 accounted for 11.6% of total video games sold and 18.7% of total computer games sold. Shooters accounted for 24.5% of total video games sold and 6.3% of total computer games sold. Within the discourse surrounding walking simulators, there is a trend to juxtapose walking simulators against mainstream genres (for example, see Clark, 2017). As such, it makes sense to use the genres that appear to account for a significant portion of what is considered the mainstream—to use the video game genres most gamers are playing.

A total of five games were randomly sampled from each genre. The games were considered based on (a) the availability of an English-language version, (b) the critical response—a Metacritic score of at least 70 and an IGN score of at least 7, and (c) the accessibility to the researcher. The popularity of the games (sales, approximate number of walkthroughs of the games available on YouTube, approximate number of reviews, etc.) was taken into consideration but was not one of the ultimate determinants.⁴ The final 30 games were then randomly sampled from the resulting population that met these criteria. Each game was assigned a number and an online random number generator

³ As Doll and Faller (1986) explain, “genre functions through a set of codes that are recognized and understood by both the spectator and the [creator] via a ‘common cultural consensus’ or a ‘collective cultural expression’” (p. 89), meaning genre can be considered an interaction between creators and audiences. In video and computer games, genre helps frame gamers’ expectations of the playing experience, but genre boundaries are not entirely rigid and can be bent and overlapped (for a more detailed discussion, see Brey, 2017). In line with this cultural mindset, the genre of individual games was determined collectively through several sources: Steam tags; descriptions and labels provided by creators and used in reviews; award nominations and wins, etc. For example, *Amnesia: A Machine for Pigs* (Frictional Games, 2013), despite being more action-oriented than most walking simulators, is classified under the “walking simulator” tag on Steam and is labelled as such in many reviews and think-pieces (e.g. Penabella, 2015; Turner, 2016). Similarly, *Super Smash Bros. Brawl* (Nintendo, 2008), despite not being limited to one-on-one style fights, is classified as a fighting game by Nintendo. In addition, IGN named it the “Best Fighting Game” in 2008.

⁴ Critical response was prioritized over sales for practical reasons. While scores for all relevant games are readily available from Metacritic and IGN, the sales information, for example, could not be easily found for all relevant games.

made the final determination. For a complete list of sampled video games, see Table 1.

Genre	Video Game	Year
Walking Simulators	<i>Dear Esther</i>	2012
	<i>Amnesia: A Machine for Pigs</i>	2013
	<i>Gone Home</i>	2013
	<i>The Stanley Parable</i>	2013
	<i>Firewatch</i>	2016
RPGs	<i>Final Fantasy VII</i>	1997
	<i>Dragon Age: Origins</i>	2009
	<i>Mass Effect 2</i>	2010
	<i>Skyrim</i>	2011
	<i>Bloodborne</i>	2015
Strategy Games	<i>Command & Conquer: Tiberian Sun</i>	1999
	<i>Civilization V</i>	2010
	<i>Total War: Shogun 2</i>	2011
	<i>Starcraft II: Heart of the Swarm</i>	2013
	<i>Endless Legend</i>	2014
Action/Adventure Games	<i>Grand Theft Auto IV</i>	2004
	<i>Batman: Arkham City</i>	2011
	<i>Assassin's Creed: Blackflag</i>	2013
	<i>The Last of Us</i>	2013
	<i>Legend of Zelda: Breath of the Wild</i>	2017
Fighting Games	<i>Street Fighter Alpha 3</i>	1998
	<i>Super Smash Bros. Brawl</i>	2008
	<i>Mortal Kombat</i>	2011
	<i>Injustice: Gods Among Us</i>	2013
	<i>Dragon Ball Fighter Z</i>	2018
Shooters	<i>Half-Life 2</i>	2004
	<i>Team Fortress 2</i>	2007
	<i>Call of Duty: Black Ops</i>	2010
	<i>Bioshock: Infinite</i>	2013
	<i>Far Cry 5</i>	2018

Table 1. List of sampled video games by genre.

Data Collection and Complexity Scoring

The methods utilized here are based on methods previously used in McCullough (2019) and other works of integrative complexity research on popular culture (McCullough, 2018a; 2018b; McCullough & Conway, 2017, 2018). From each of the sampled video games, a total of 10 pieces of dialogue or in-game prose was randomly sampled, which falls within the parameters of integrative complexity research standards (Baker-Brown et al., 1992; McCullough & Conway, 2018). Each piece needed to be at least

three sentences in length and no longer than a paragraph as defined by grammatical and stylistic conventions. These criteria for length helped create a balance across the sample and mitigate the chance of length acting as a confound by removing overly short or overly long pieces of dialogue and prose. The pieces were not contiguous and were sampled across the entirety of the games' contents and narratives. The same method of random selection (an online random number generator) used to choose the games was used to decide the pieces of dialogue.

All sampled dialogue and prose were then scored for integrative complexity using the Automated Integrative Complexity (AutoIC).⁵ The AutoIC is a computer program that can score any written or transcribed material faster than traditional human coders. The program functions under the same logics used by human scorers, scoring on the same one-to-seven scale and using the same guidelines described in Baker-Brown et al. (1992). It estimates scores by assessing the probability of certain words or phrases being included in a complex passage (Conway et al., 2014; Houck et al., 2014). While the use of certified human scores remains the most popular method to conduct complexity research, the utilization of the AutoIC makes particular sense in the context of this study because it was the method of scoring used in the previously-discussed studies of popular culture (McCullough, 2018a; 2018b; 2019; McCullough & Conway, 2017; 2018).

Results

A one-way ANOVA revealed no significant main effect for genre ($p > .20$). In other words, there were no statistically significant differences between the average integrative complexity scores for each genre (see Figure 1 for mean scores).

⁵ The AutoIC is not the only available computer-based scoring program for integrative complexity; however, it "has been widely validated as a measurement of integrative complexity and shows appreciably higher computer-to-human reliability than other available integrative complexity scoring methods" (McCullough & Conway, 2017, p. 3).

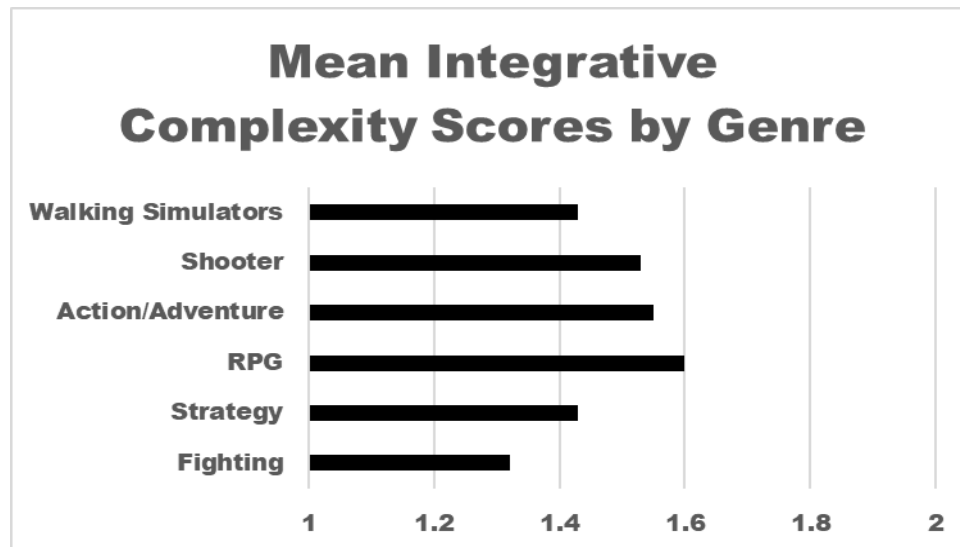


Figure 1. Mean scores for each genre: Fighting $M=1.32$; Strategy $M=1.43$; RPG $M=1.60$; Action/Adventure $M=1.55$; Shooter $M=1.53$; Walking Simulator $M=1.43$

Descriptively-speaking, the RPG genre scored the highest, the fighting genre scored the lowest, and walking simulators tied with the strategy genre for the second lowest. A series of two-way ANOVAs tested if variables such as year of release and the individual games had any significant moderating effect on the results. Ultimately, the two-way ANOVAs revealed no significant interactions and the above variables did not moderate or mitigate the initial findings in any notable manner (p 's > .18).

Discussion

The above findings illustrate that, at the structural level, the narratives of walking simulators are not intrinsically distinct from the narratives of other genres. They are not significantly more or less complex at a fundamental level; rather, well-crafted and dynamic stories can be found in any genre. Below, I discuss some implications and limitations of these findings, and directions for future research.

The Appeal of Walking Simulators

The above findings do not suggest that walking simulators are not unique from other genres in some respects, nor do they discount nor disprove fan enjoyment and approval of the genre. However, these findings do suggest that the uniqueness and appeal of walking simulators may be overly attributed to the genre's writing and narratives as opposed to other factors. For example, the unique appeal of walking simulators may more accurately be the result of the genre's non-violent gameplay (Valentine & Jensen, 2016) or its focus on exploration and environments (Carbo-Mascarell, 2016; Fullerton, 2019; Rivera-Dundas, 2017).⁶

⁶ The non-violent gameplay may also allow players to more easily experience and understand the plot. For example, first-person shooter

There is a distinctive sense of rebellion that pervades walking simulators, transcending the technical, apparent aspects of its writing or any specific plot, character, and story details. Much of the controversy and discourse surrounding walking simulators focuses on the debate about whether certain titles can be considered “proper” video games because they are “lacking the kind of interactivity to which games were accustomed” (Şengün, 2017, p. 32). As discussed previously, this lack distinguishes walking simulators conceptually from the militaristic origin of video games.

Yet, this lack of interactivity may be a more impactful and accurate source of the appeal of walking simulators than the structural specifics of their narratives. Muscat et al. (2013) explain how the lack of traditional obstacles to overcome (such as puzzles or enemies to fight) allows the player to dictate the pace of their individual exploration and experience extended periods of time within the world of the game. As Marak (2017) writes, in “the majority of walking simulators information is supposed to be dispersed in space in a way that encourages the cycle of exploration, discovery, unlocking and more exploration” (p. 57). The use of more abstract elements of interactivity may result in an increased sense of agency that may be perceived favorably by a subset of gamers and disparaged or dismissed by others.

Limitations and Future Research

This is, to my knowledge, the first study to apply integrative complexity to the question of genre in video games. Due to its exploratory nature, this study is not without limitation; however, these limitations present excellent opportunities for future research to build upon the present study. For example, this study does not analyze all genres of video games, and it specifically only looks at games that were critically well-received. There is a chance that the pattern seen here is limited to genres and games that adhere to the constraints of this study. Future studies could explore more genres and expand the range of the games’ acclaim, popularity, and success examined.

Moreover, this study does not analyze all levels of possible linguistic variation. Integrative complexity analyzes structure and not contents. There may be measurable linguistic differences between walking simulators and the other genres at the content-level that are not accounted for here. However, this study illustrates the insightfulness of linguistic analysis regarding the question of genre in video games; thus,

Bioshock Infinite (Irrational Games, 2013) uses many of the methods typically seen in walking simulators (audio recordings) to communicate aspects of its plot; however, it can be difficult to fully comprehend or experience what is being communicated during the game’s many action sequences. Such occurrences do not happen in walking simulators because of the absence of enemies to fight and overcome—because there is an overall lack of violence. Players are more able to fully appreciate and internalize the information being communicated to them. This likely accounts for a portion of the appeal of walking simulators.

it justifies the application of other linguistic variables and coding systems (for example, the LIWC, which in part is more content-focused). As McCullough and Conway (2018) explain, “all research enterprises have to start somewhere” (p. 528).

Concluding Thoughts

The assertion that the writing in walking simulators is more complex than other genres appears to be inaccurate. McCullough (2018a) shows that measurable, significant linguistic differences can be detected between good and bad, successful and unsuccessful, and popular and unpopular works of writing and storytelling. This study only analyzed games that were popular and well-received (“good” games), suggesting that these similar levels of integrative complexity may be indicative of higher levels of quality for video games. Walking simulators may prioritize story and narrative experiences (Campbell, 2016; Gohardani, 2017), but it appears that they are not wholly unique in this regard. Good stories, good writing, and good narratives are simply good, regardless of genre.

References

- Baker-Brown, G., Ballard, E.J., Bluck, S., DeVries, B., Suedfeld, P., & Tetlock, P.E. (1992). The conceptual/integrative complexity scoring manual. In C. P. Smith (Ed.), *Motivation and personality: Handbook of thematic content analysis* (pp. 400–418). Cambridge: Cambridge University Press.
- Brey, B. (2017). “A choice is better than none, Mr. DeWitt. No matter what the outcome”: Remix and genre play in *Bioshock Infinite*. *Journal of Contemporary Rhetoric*, 7(2/3), 104–112.
- Campbell, C. (2016, September 28). The problem with “walking sims”. *Polygon*. Retrieved November 18, 2018 from <https://www.polygon.com/2016/9/28/13076654/the-problem-with-walking-sims>
- Carbo-Mascarell, R. (2016). Walking simulators: The digitisation of an aesthetic practice. Presented at the *First International Joint Conference of DIGRA and FDG*, Dundee, Scotland.
- Clark, N. (2017, November 11). A brief history of the “walking simulator”, gaming’s most detested genre. *Salon*. Retrieved November 18, 2018 from <https://www.salon.com/2017/11/11/a-brief-history-of-the-walking-simulator-gamings-most-detested-genre/>
- Colthup, H. (2018). ‘You were all the world like a beach to me.’ The use of second person address to create multiple story worlds in literary video games: ‘*Dear Esther*’, a case study. *International Journal of Transmedia Literacy*, 4, 117–136.

Conway, L. G., III, & Conway, K. R. (2011). The terrorist rhetorical style and its consequences for understanding terrorist violence. *Dynamics of Asymmetric Conflict*, 4, 175–192.

Conway, L. G., III, Conway, K. R., Gornick, L. J., & Houck, S. C. (2014). Automated integrative complexity. *Political Psychology*, 35, 603–624.

Conway, L. G., III, Gornick, L. J., Burfiend, C., Mandella, P., Kuenzli, A., Houck, S. C., & Fullerton, D. T. (2012). Does simple rhetoric win elections? An integrative complexity analysis of U.S. presidential campaigns. *Political Psychology*, 33, 599–618.

Doll, S., & Faller, G. (1986). *Blade Runner* and genre: Film noir and science fiction. *Literature Film Quarterly*, 14(2), 89–100.

Entertainment Software Association. (2016). *Essential facts about the computer and video game industry*. Washington, DC: Entertainment Software Association.

Fullerton, T. (2019). *Walden, a game*: Reflection. In M. T. Payne & N. B. Huntemann (Eds.), *How to play video games* (pp. 333–340). New York: New York University Press.

Gohardani, D. (2017, November 1). What makes a video game? The case of walking simulators. *OnlySP*. Retrieved November 18, 2018 from <http://onlysp.com/walking-simulators-op-ed/>

Houck, S. C., Conway, L. G., III, & Gornick, L. J. (2014). Automated integrative complexity: Current challenges and future directions. *Political Psychology*, 35, 647–659.

Kagen, M. (2018). Walking, talking and playing with masculinities in *Firewatch*. *Game Studies: The International Journal of Computer Game Research*, 18(2). Retrieved from <http://gamestudies.org/1802/articles/kagen>

Kirkland, E. (2005). Restless dreams in *Silent Hill*: Approaches to video game analysis. *Journal of Media Practices*, 6(3), 167–178.

Marak, K. (2017). Walking through the past: The mechanics and player experience of haunting, obsession and trauma in *Layers of Fear*. *Theoria et Historia Scientiarum*, 14, 55–69.

McCullough, H. (2018a). The diamonds and the dross: A quantitative exploration of integrative complexity in fanfiction. *Psychology of Popular Media Culture*. <http://dx.doi.org/10.1037/ppm0000216>

McCullough, H. (2018b). The new American dream: YouTube, movie review and integrative complexity. Paper presented at the *6th Annual University of Albany – SUNY Institutions & Societies Conference*, Albany, NY.

McCullough, H. (2019). "Hey! Listen!": Video game dialogue, integrative complexity and the perception of quality. *Press Start*, 5(1), 94–107.

McCullough, H., & Conway, L. G., III (2017). "And the Oscar goes to...": Integrative complexity's predictive power in the film industry. *Psychology of Aesthetics, Creativity, and the Arts*.
<http://dx.doi.org/10.1037/aca0000149>

McCullough, H., & Conway, L. G. III (2018). The cognitive complexity of Miss Piggy and Osama Bin Laden: Examining linguistic differences between fiction and reality. *Psychology of Popular Media Culture*, 7(4), 518–532.

Muscat, A., Duckworth, J., Goddard, W., & Holopainen, J. (2016). First-person walkers: Understanding the walking experience through four design themes. Presented at the *First International Joint Conference of DIGRA and FDG*, Dundee, Scotland.

Penabella, M. (2015, October 27). Why are we so afraid to walk? *Kill Screen*. Retrieved April 25, 2019 from
<https://killscreen.com/articles/why-are-we-so-afraid-walk/>

Rivera-Dundas, A. (2017). Ecocritical engagement in a pixelated world. *European Journal of Literature, Culture and Environment*, 8(2), 121–135.

Şengün, S. (2017). Ludic voyeurism and passive spectatorship in *Gone Home* and other "walking simulators." *Video Game Art Reader*, 1(1), 30–45.

Suedfeld, P., & Leighton, D. C. (2002). Early communications in the war against terrorism: An integrative complexity analysis. *Political Psychology*, 23, 585–599.

Tetlock, P. E. (1986). A value pluralism model of ideological reasoning. *Journal of Personality and Social Psychology*, 50, 819–827.

Thoemmes, F., & Conway, L. G., III. (2007). Integrative complexity of 41 U.S. presidents. *Political Psychology*, 28, 193–226.

Turner, J. (2016, November 30). The *Amnesia* collection review, PS4: Essential for console gamers who love horror. *Independent*. Retrieved April 25, 2019 from <https://www.independent.co.uk/life-style/gadgets-and-tech/gaming/the-amnesia-collection-review-ps4-remaster-pc-a7448021.html>

Valentine, K., & Jensen, L. J. (2016). *Examining the evolution of gaming and its impact on social, cultural, and political perspectives*. Hershey, PA: IGI Global.