The Illusive Ludonarrativity and the Problem with Emergent Interactive Storytelling Models in Interactive Movies

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Abstract

Cinematic games are increasingly reaching more audiences and have establish successful formulas able to engage their audience in gameplay. On the other hand, interactive movies remain niche and have not found new formulas able to preserve narrativity and at the same time introduce immersive gameplay. Using a combination of surveys, interviews and observations of 150 university students who were asked to play the interactive movie, The Outbreak, the paper concludes that the problem with interactive movies is the lack of a successful model of an emergent interactive narrative format that can introduce meaningful ludonarrative experiences capable of maintaining the narrative but also successfully introducing meaningful gameplay. The paper recommends that for interactive movies to be more immersive, the experience needs to include non-obstructive interactive mechanisms that are complex enough to create an immersive gaming experience, while fully integrated in the narrative and able to keep the audience suspense within the 'narrativity' structure and flow.

Keywords: Ludonarrative, Interactive Storytelling, Interactive Movies, Narrativity, Ludology

1. Introduction

The rapid increase of digital media consumption over the Internet has resulted in increased popularly and accessibility of long form digital video content. Increasingly, audiences are watching movies online whether on social media or video-on-demand platforms like Netflix and Hulu (Barr, 2011). This increased rate of consumption of high quality HD and 4K videos content on digital platforms and the increased speed of Internet delivery also opened a window for game developers to increase their in-game video content, constantly increasing live-footage cut scenes. This established a new popular gaming genre – Full Motion Video Games (FMV) where the live-footage content gives the game a cinematic visual look. While both on-demand full feature length movies and FMV games share the fact that they are digitally native and reside on digital platforms that allows for both interactivity (ludology) and storytelling (narrativity), neither fully embraces both. Very rarely do Netflix movies utilize the interactive features available and, games, even FMV games with a high ratio of cut scenes, only utilize those scenes as background story or fillers and do not create a narrative structure as such (Neitzel, 2005).

Interactive movies are a genre that tries to find a balance between preserving the narrative structure inherent in traditional movies and introducing interactivity that utilize new digital platform capabilities. This engages users in some form of interactivity and game play without losing the narrativity and suspension of disbelieve. This genre, while it exists, has remained experimental and, at best, has experienced limited success (Mangan, 2017). This paper examines this failure of interactive movies to become mainstream. Key here in this relation is the lack of effective mechanisms in

interactive storytelling where the interactivity and ludology intertwine in such a way that they create an effective ludonarrative experience (Vardi, 1999). In the case of interactive digital media, it is always a tug of war between interactivity and narrativity. For traditional movies, it is zero interactivity and full narrative construction. For traditional games, it is the opposite, zero narrativity and full interactivity; everything else falls in between. The more interactive the movie, the less narrative structure it has until it reaches a stage where it cannot be called a movie and falls within the definition of a game. For example, FMV games, even though they have a high ratio of live-footage cut scenes, remain classified as a game and not an interactive movie. On the other hand, the less the interactivity, the more likely it will be looked at as a simple branching movie. Thus, there lies a major problem in interactive movies in that they fall in the middle – neither being able to engage movie goers in their simple branching nor gamers with meaningful game play – and once they do, they lose too much narrative structure to be classified as interactive movies.

Most ludologists and narratologists agree that there needs to be happy medium where a game and narrative can coexist in such a way that neither take away from the other, thus the impossible task of creating experiences that are truly immersive in their ludology and narrativity. However, strong disagreement exists regarding how much narrative a game can contain before it loses its ludological value and vice versa, how much ludology can a movie have before losing its narrative suspension of disbelieve. The point of disagreement is that neither field is willing to accept that the current known mechanisms need upgrading with entirely new ideas in order for this happy medium to exist. Ludologists Juul and Aarseth argue that you cannot have narrativity and narration at the same time in a gaming environment (Aarseth, 2003; Juul, 2001). The debate continues regarding 1) defining what constitutes a narrative structure in a game; 2) if this narrative interferes with the game play and 3) how to structure the narrative, giving the player enough authoring power without losing the narrative structure (Vardi, 1999). Some argue that it is possible to have both interactivity and narration complementing each other, while others argue that together it will be detrimental to the game play (Ang, 2006; Calleja & Langgaardsvej, 2009). This debate even though does not mean that ludologists 'not love' narratives Frasca, G. (2003) but it does remain hotly debated with many ludologists rejecting the notion of gaming narrativity. The idea that a movie can have game play in harmony with narrative in the form of Ludonarrativity is rejected by ludologists who advocate for experiential gaming (Aarseth, 2012; Ensslin, 2017). This rejection of interactive movies as games has made it difficult to classify them as either full fledged games or an enhanced movie, neither definition would be accurate:

> *"For ludologists like Juul and Aarseth a plot makes a story and rules make a game, and never the twain shall meet. Moreover, ludologists argue that game players do not identify with their avatars in the game world as readers or spectators of a narrative do with the main characters of a story."* (Simons, 2007)

The distinction between a game that has some elements of narrative and a movie that has interactivity is not always clear and certainly there are examples of games that have little narrative structure. Yet somehow, they are classified as interactive movies and vice versa, interactive movies that have very little gaming elements that their creators claim to be games (Cheng, 2007). Most

ludologists of lately are exploring the notion that Ludonarrativity can in fact encompass the structure and artifacts of a game and thus narrativity in games is an integral part of game mechanisms (Koenitz, 2018). The debate about this complex relation between ludology and narrativity and the possibility of having a game that includes narrative as part of its structure is far from over even though most ludologists strongly argue for the existence of a ludonarrative approach (Larsen, & Schoenau-Fog, 2016). The notion that the better the game mechanics the more narrativity can be inferred through the gameplay is at the core of this approach, however this debate is far from over and some would argue that narrativity in its pure form can only be attained by authorship (Myers, 2020; Oliver, 2020). Ludologists in this case seem to appropriate a loose definition of narrative to encompass game mechanics (Dubbelman, 2016). In this paper we are approaching narrativity from a purest definition emphasizing a concerted effort at authorship and thus games that have strong narrative mechanisms don't fall under the category of interactive movie in our definition. In this case, interactive movies must have a strong narrative structure and be scripted, the interactivity in this case is to navigate the narrativity and create alternate stories, albeit within the overall structure of the script, in that sense the author of the story is the creator of the interactive movie (Kromhout & Forceville, 2013). In games, the narration is partly scripted in the form of cut scenes and partly emanated in the form of game play where the player authors part of the story (Calleja & Langgaardsvej, 2009) and or just purely mechanics of the game (Dubbelman, 2016). While the idea of a branching narrative can allow for both an element of game play - albeit basic – and at the same time preserve a narrative structure, the problem is that the branching in interactive movies is often, well, just that, branching. The branching does not integrate in the narrative and or add to the storytelling, thus missing a key component of interactive storytelling in which it is possible for the virtual branching objects to become part of the story. (Cavazza, Lugrin, Pizzi, & Charles, 2007). Interactive movies, as defined in this paper, are the genre of interactive stories that do not include a level of game play that causes it to be classified a game and at the same time are not a traditional movie in the sense that they have interactivity. Therefore, interactive movies fall in a black hole of being neither one nor the other, and, as a result, have not yet found a mainstream audience.

One would argue that not only have they have not found an audience but also the formula of interactive storytelling that preserves both interactivity and storytelling has not solidly materialized. What transpires as a result is a polarity between ludologists understanding of the ludonarrative as the storytelling is added to a game (Aarseth, 2003; Juul, 2001) and the narrativists' lack of understanding of ludology. Narrativists demonstrate a reluctance to design new interactive storytelling formulas that can accommodate for truly engaging interactive narratives, drawing on game theories to establish a balanced ludonarrative approach (Koenitz, 2015). Game theorists feel that the narrative should be in the service of the game play, with some ludologists going as far as to say that narrativity and game play will never intersect (Aarseth, 2003; Juul, 2001). It is important to note that while gamers are mostly resistant to the story in a game, some argue that the problem is not the story versus gameplay ratio, but rather is a question of expectations. For example, if we look at the reviews for the interactive movie *Late Shift*' (Wales Interactive, 2016) which has limited game play, we see mixed reviews with some judging it a resounding failure, especially when reviewed as a FMV game. Those reviewers that

treated it as a game were largely negative in their reviews, citing a lack of sophisticated game play (Diver, 2017). On the other hand, the few reviews that reviewed *Late Shift* as an interactive movie gave it the thumbs up citing its high production values (Jordon, 2010). Key here is that the positive reviews emphasized the movie aspect of *Late Shift* and move away from classifying it as a game – and rightly so, with so little gameplay. The question remains, if it is not a game, then what is the business model and who will pay to interact with such an experience? Gamers complain that interactive movies are boring because they lack complex gameplay, while moviegoers report that the interactive elements distract from the enjoyment of watching a movie (Roth, 2016).

2. Literature Review

With every new technology, we learn new ways to access content, new methods of interactivity and new forms of storytelling. New genres emerge, but old ones remain. Henry Jenkins (2001) notes: "We develop new skills for managing information, new structures for transmitting information across challenges, and new creative genres that exploit the potential of those emerging information structures." What matters here is the relationship between the audience and the medium; with every new technology, we learn new ways to interact with media content but we also keep our old skills to access old media (Jenkins, 2006, 2011). Often, new creative genres become the prominent mode of viewing while old genres using old media remain valid but become niche, as in the example of television replacing the radio. Most people watch the news on TV but will listen to the news on the radio when they cannot access a television, such as when driving. Therefore, radio as a platform becomes niche and loses some of its content and so the platform repurposes rather than becoming obsolete (Jenkins, 2001, 2003). This has not been the case for interactive movie versus traditional movies despite the rapid perforation of online movie content and increased habits of watching long form videos through personal devices and on platforms like Netflix, Apple TV, Google TV and many others, including social media platforms (Barr, 2011). Despite the fact that Internet TV platforms have the capability to include interactivity as part of their technical capabilities, the reality is that IPTV content largely remains traditional and linear, episodic at best with very limited interactivity, and certainly not using the platform's ability to interact with the audience (Kumar, 2017). As a result, IPTV did not help in propagating the case of interactive movies, and while the gaming industry is rapidly gaining momentum, interactive movies are nonexistent in both cinema theatres and homes (Hales, 2015; Pavlik, 2008). Looking back at the early 1990s, with the increase in popularity of personal computers and the introduction of laserdiscs and CD-ROMs along with the early attempts at making interactive movies, most attempts remained experimental in relation to entertainment and were only commercialized in relation to interactive educational material (Mancini, 2005).

Attempts at including interactivity in movies are not new phenomena and the history of movie making is littered with attempts to invite the audience to interact with the narrative; however, those attempts have always been spread out, experimental and never reached a mass audience. One of the first notable attempts at creating an interactive movie goes back as far as the early sixties and was conceived by Radúz Činčera, for the Czechoslovak Pavilion at Expo 67 (Hales, 2005, 2010).

Kinoautomat, a black comedy, played in a cinema where the movie would stop multiple times; asking the audience to make a choice, then a different narrative followed depending on the selection. The ending, however, was the same regardless of the choices made through the screening. *Kinoautomat* was well received by the audience and the press and even dubbed into English, playing in select theatres in the United States. The New Yorker wrote, "The Kinoautomat in the Czechoslovak Pavilion is a guaranteed hit of the World Exposition, and the Czechs should build a monument to the man who conceived the idea, Raduz Cincera" (The World's First Interactive Movie, 2007). There was a wave of film based interactive westerner arcade games that date back from the mid seventies with *Wild Gunman* (1974), then *Dragon's Lair* (1983), *Time Gal* (1985), and concludes in the early nineties with *Night Trap* (1992), and *Mad Dog McCree* (1990) which was designed as an arcade game using laserdisc technology to store the multiple branching live-action videos (Heikkinen, & Reunanen, 2015; Hales, 2010, 2015). Then came Full Motion Videos games like *Heavy Rain* (2010), which had background storytelling with cinematic cut scenes but gave full authoring power of the narrativity to the game player (Quantic Dream, 2010). Interactive movies remain largely restricted to arcade games with very few exceptions like *Her Story* (2015), and Roundabout (2015) which were narrative driven and had commercial success and strong game play but were still classified as Full Motion Games and not interactive movies (Arsenault, & Perron, 2015). Weiberg (2002) laments on the state of interactive movies: "so-called 'interactive film', a film or video projection that can be changed in some way by the audience watching it, has been notable by its absence since the format was successfully premiered with *Kinoautomat'* of 1967".

One interesting aspect of those early experiments, like *Kinoautomat*, is the collaborative aspect of the experience which allowed for communication between viewers, creating a positive collaborative gaming experience in which the audience was interacting with the film and each other creating group dynamics and a positive experience (Admiraal, Huizenga, Akkerman, & Ten Dam, 2011; Kaye, 2016). However, those attempts remained experimental and never reached mainstream viewers. The question is, why has this positive experience not translated into a new mainstream genre? Is it that Hollywood's failure to license the early concepts of interactive movies led to its ultimate failure or is the problem much deeper than that and inherent in the difficulty of writing immersive branching narrative? As far back as the late seventies and then with increased popularity was the advent of interactive arcade games that included videos and interactivity, which were the first examples of commercially successful interactive movies (Shuker, 1996; Wark, 1994). However, only a limited number of live action true interactive movies were created and those mainly revolved around a murder mystery adventure or a shootout western with very basic branching narratives. This basic narrative with minimal branching and predicable endings led to a poor reputation (Edmond, 2015; Edwards, 2003). Interactive moviemakers did not hide this failure in producing compelling interactive narratives. In a print advertisement for the interactive movie *Psychic Detective*, the publishers tried to distance themselves from the interactive movie genre by 1) stating that they are a full-motion video game, and 2) acknowledging that: "Yeah, we know full-motion video games in the past sucked'" (Interactive Movie, n.d.).

There has been a lot of research in the field of interactive storytelling and emergent narratives, however most of those studies seem to look at interactive narratives as a simple break down of narrative with very little attempt at entirely revamping the narrative structure at a deeper conceptual level (Louchart, & Aylett, 2004). The idea that interactive storytelling is achievable by making minor adjustments to the traditional narrative has not yet produced a winning formula (Roth, 2016). This could be either due to a deep conceptual problem that narrativity and ludology is not a good match and that in order for them to be a good match a new model is needed (Hales, Pellinen, & CastrŽn, 2006). The key problem here is how can an audience immerse in an interactive movie when the narrative oscillates between the experimental obscure to the basic branching and in between - only factual interactive movies seem to come close to social realism (Galloway, 2004). Some studies try to differentiate interactive storytelling from traditional storytelling using terms like Interactive Digital Narrative (IDN), Interactive Storytelling (IS) and Emergent Interactive Narratives (Cavazza et al., 2007; Juul, 2001; Koenitz, 2010).

Avid gamers eagerly anticipate new releases of extremely popular games like *Assassins Creed* (Ubisoft, 2017) while interactive movies are often made as an experimental project or as a marketing campaign for a brand, with very few released commercially and if so with little success (Diver, 2017). Some games like *Fahrenheit* (2005) were marketed by its creators as an interactive movie even though in reality it used conventional gaming elements and the narrative was only scripted in part and the dialogue was player driven (Roth, 2016). The question of who authors the story is key to this distinction between a game and an interactive movie. In the case of games, the author of the story is the player while in an interactive movie the author is the filmmaker (Edwards, 2003). Games have complex ludology that requires a learning curve and presents a challenge to advance through the game. This act of engaging in gameplay with complex mechanisms and control over the narrative puts the players in a state of flow. Flow can translate to immersion but it needs difficult tasks and a skilled avid-gamer to navigate those challenges as stipulated in Csikszentmihalyi's flow theory (Csikszentmihalyi, 1975, 1990, 2014; Kaye, 2016). For interactive movies, the conditions for flow are not met because the challenges are not difficult, and the viewer is not assumed to be skilled like an avid-gamer. The skills of avid gamers are not called upon and therefore flow is not achieved. Flow theory could apply to interactive movies if the interactivity were complex enough to present a challenge to the viewer, but the viewer also needs to be skilled enough to navigate those challenges which require a new audience interested in complex gameplay but also willing to lose control of the story to the filmmaker.

The quest to finding the right balance between ludology and narrativity is yet to be solved, the problem is that too much interactivity will weaken the narrative and too little will weaken the gameplay (Crogan, 2002). Therefore, in that sense the jury is still out with some researchers, especially in the game studies field, arguing that it is impossible to create compelling games with high levels of interactivity and at the same time preserve the narrative (Frasca, 2003). Others argue for a combination where the interactivity can drive multiple narratives (Wolf, 2001) or work in harmony with narrative by finding the perfect balance (Jenkins, 2004). Another option less explored by researchers

is the possibility of actually including the interactivity as part of the narrative, not just as a mechanism for the player to navigate through a pre-authored narrative. In this sense, the game play is actually embedded in the narrative, as opposed to simply serving as a branching mechanism through the narrative. For interactivity to be fully embedded, the gamer needs to let go of the role of story author and be a willing participant in the narrative, immersed in the story by the act of interacting with the narrative in a semiotic manner. One company that is trying to create interactive films where the interactivity is actually part of the narrative is Eko, founded by Yoni Bloch who has raised over 40 million dollars in venture funds for new interactive movie technology and is currently collaborating with big Hollywood studios to produce a new generation of seamless interactive movies (Khatchadourian, 2017). Even though this concept is not yet proven, there is already a concerted effort and money to back that effort. Consequently, a possible future for interactive movies enjoyed by a mainstream audience exists.

One promising breakthrough in this emergent new field is the non-conclusive result that seems to suggest that a character-based or driven narrative can work better for interactive storytelling as opposed to the classic plot driven narratives (Aylett et al., 2006). The basic premise of character driven narratives is that they are not abandoning the plot but making it more abstract and relying more on the emotions of the characters:

> *"Fields as diverse as Role-Playing Games, Interactive drama or Improvisational drama also use characters and emotions as essential elements in narrative, often operating outside of the classical theoretical framework. They share a concern with interactivity and dynamic narrative development, locating these within a much more abstract and high-level view of plot"* (Louchart, & Aylett, 2004).

Façade Interactive Drama produced in 2005 (Mateas & Stern, 2005; Rettberg, 2015) was one of the first serious attempts at creating interactive fiction and contributed in establishing a new creative genre (Zambare, 2005); however, the genre of interactive fiction never managed to reach the mainstream audience (Perron, Arsenault, Picard, & Therrien, 2008).

3. Method & Research Question

This paper examines why interactive movies have failed to reach mainstream audiences. The paper attempts to answer a key research question that follows from this which is at the core of the debate about narrativity and ludology: Is it possible for interactive movies to be ludonarrative maintaining narrativity that is able to sustain the suspension of disbelieve similar to what movies do, and at the same time applying high level of interactivity that makes them engaging, ludological? Core to this research question is examining if gamers only seek ludology and moviegoers narrativity, or is the failure of interactive movies to be ludonarrative directly resulted from the interactive moviemakers failure to find a successful formula that can introduce enough ludology without losing the narrativity?

For the purpose of this study we choose to look at one sub-genre of interactive fiction, namely interactive movies, which include live-footage and interactivity allowing the user to choose a different path in the narrative, often with multiple endings (Edmond, 2015). We chose *The Outbreak* (SilkTricky, 2008) because it conforms to our definition of an interactive movie where the interactivity is simple branching, allowing for pauses so the user can choose a path, and based on the choice the narrative continues with multiple possible endings. It was important that the interactive movie we chose for this study has very limited ludology and therefore would not be labeled as a game. It has a clear scripted narrative structure that is also interactive. In addition, being available freely online allowed us to conduct the study in the university labs without the need of specialized computers or a large number of licenses, allowing for the inclusion of a larger number of participants. The study was conducted on 150 participants chosen randomly from 4000 undergraduate students. The participants were asked to watch the *Outbreak* interactive movie, accessible online, with the condition that should complete at least one branch of the interactive movie reaching at least one ending. The students were observed during the interaction to measure flow (Csikszentmihalyi, 1975) and then surveyed about the experience. In addition to the survey the researchers followed up with quantitative questionnaire in the form of interviews conducted after they watched the interactive movie.

In conducting this study, we were interested in looking at the difference between gamers' and non-gamers' responses to interactive movies. The set of question devised for the survey were based on the idea of combining participations reflection via responding to a mixed method qualitative and quantitative survey (Borderie, & Michinov, 2016). We propose that gamers are interested in complex interactivity and do not find interactive movies challenging enough, while non-gamers would find the interactivity distracting. Thus, interactive movies fall within a genre neither desirable to gamers or regular moviegoers. This proposition does not necessarily put interactive movies in the doomed category but highlights a key problem with interactive movies – that they are lost between two distinctive genres, one that needs complex interactivity with little narrative and the other than relies on narrative. Anything in between seems to satisfy neither genres' audiences. So, what is the solution - a new genre with better interactivity that suits a completely new audience or new interactive methods that engages gamers while also contributing to the narrative? In the discussion of the survey results, interviews, and observations we outline the outcomes of this study but also the limitations, and make recommendations based on those findings that can be applied to future research.

4. The Results

This research was conducted by surveying 150 university students who were asked to play the interactive movie, *The Outbreak* (SilkTricky, 2008), which is available online for free. The students were also asked to fill in a questionnaire after completing the interactive movie.

Participants received the questionnaire in an online Google form after completing at least one branch of the interactive movie. The form had nine multiple-choice questions designed to measure playtime, how many endings and deep interaction, flow, immersion, and enjoyment of

the experience. Also, there were two questions to measure if the immersion (or lack of) was due to interactivity or poor narrative. In addition, participants were asked about their earlier gaming experience and movie-watching habits; those questions were important to correlate the experience in relation to gamers vs. non-gamers. The questions were designed using natural language to ensure the data was not affected by the participants' understanding of the questions. For example, "Did you enjoy the experience of watching *The Outbreak*?" a) No, b) It was ok but not interested in repeating it, c) Yes, extremely enjoyed it and interested in watching similar movies, d) It was fun but not interested in repeating it. Participants were also observed while playing the interactive movie to measure their flow. This form of ethnography involved a subset of the total participants and was performed by observing participants' attention to the playing, measuring how many times they checked their mobile phones, or looked away from the game (Borderie, & Michinov, 2016; Bressler, & Bodzin, 2013). The observation data was used as a secondary method to validate the flow and enjoyment questions in the survey. The questionnaire and the observations were also followed by a qualitative interview, in which we asked participants to elaborate on the questionnaire, describing why they enjoyed or did not enjoy the experience, and what part of the experience they liked or disliked, in relation to the interactivity, story and the experience overall. Data from the questionnaire, observations and interviews were compared. The total number of participants in the study was 150 university students. While 150 participants played the game and filled in the survey, only 89 completed the game to the end and filled in the questionnaire correctly. Once the questionnaire data was compared with the observation and interview data, only 77 results were validated with the other 12 results returning contradictory or incomplete responses. The the results of this study and in the discussion below rely on those 77 completed and validated results. The male-female ratio in the validated results was 31 Males, 46 Females. Of the total participants in the validated results, there were 20% avid gamers and 35% movie fans that watched more than five movies a month, noting that those two categories are not mutually exclusive. Table 1 below summarizes the results of the questionnaire.

Table 1 – Summary Results

Response to	Avid Gamers	Movie Fans
Enjoyed Experience	33%	56%
Hated Experience	17%	4%
Had Flow*	17%	52%
Found Interactivity Not Natural	50%	44%

Found Story Boring	33%	15%
Likely to Repeat	33%	33%

Two key results from the analysis of the survey results are: firstly, that avid gamers significantly had less flow (17%) than movie fans (52%), the second key result from the survey data is that both movie fan and avid games indicated that they are not likely to repeat the experience (67%). In addition to the survey results, an analysis of the qualitative interview responses validated the survey results revealing that while some of the participants enjoyed the novelty of trying a new concept, most found the interactivity distracting and even frustrating, with the most common key words used being – boring, distracting, frustrating, unique, words that fall low on Csikszentmihalyi's flow measurement (Csikszentmihalyi, 1990). The most telling result of the post play interview is that even with the participants that clearly engaged with the interactive movie while playing, the reflection on the experience was underwhelming. Here are some samples of participant's responses:

- **Example 1, Avid Gamers #handle 23: "**I found the experience detracting a lot from the whole suspense of the fast-paced course of events leading to the survival of the characters. So me choosing what happens just ruins any form of attachment I can have to a character I don't even know."

- **Example 2, Avid Gamers #handle 45:** "The experience was different and unique, the story was boring and the directing was not good. The interactivity was interesting and the choosing between the scenes added some kind of action and anticipation of what will happen later in the other scenes."

- **Example 3, Movie Fan #handle 56:** "I did not like the movie that much. However, I enjoyed the fact that you could contribute to the ending. This may not be my favorite kind of movie, but I still had fun, even though nothing could beat plain, old-fashioned movies."

- **Example 4, Movie Fan #handle 3:** "It is was ok; however, there were too many choices every 1 or 2 minutes. It would be better to have fewer pauses. Additionally, all decisions were critical. It would be better for some decisions not to have that much weight or at least if they do, they shouldn't all lead to dying as in the case here as it became frustrating at times because every decision I made was a wrong decision."

Worth noting here is the difference in responses between avid gamers and non-gamers. While there was a variation on the degree of immersion, both gamers and non-gamers found the experience frustrating, albeit, for different reasons.

5. Discussion

A key question that emerged from our study based on both qualitative and quantities data is what prevented participants from immersing in the experience of watching interactive movies? In other words, moviegoers are watching a movie so they can immerse and enjoy a movie narrative, lean back and suspend their beliefs, while gamers are playing a game to immerse by attaining a state of flow through challenges that require a lean forward experience and full attention (Crumpton & Murray, 2004). It seems that the interactivity, or any element of ludology for that matter, is an interruption of narrative that takes the viewer from that state of suspension of disbelief. On the other hand, the interactivity that is often at a low level of ludology makes the game play boring and prevents gamers from attaining a state of flow. Based on the observations and interview results from both groups of participants, both gamers and non-gamers found the interactivity frustrating and/or boring. So, a question arises, is it possible to include any ludology and maintain narrative structure and immersion akin to the traditional movie watching experience, making it appealing for audiences that are seeking a movie watching experience, albeit interactive in this case? To a lesser degree, is it possible for a gamer to engage in the interactive movie as such that they feel challenged, attaining flow while still following the narrative and allowing the filmmaker to take them on the movie watching experience?

The question of finding a happy marriage between ludology and narrativity remains elusive and hugely debated and our study concludes that currently there is not a successful model that is able to sustain ludology and narrativity in an immersive way. One possible answer could come from emergent narrative studies looking at how narrative structure can be weaved into the ludology in such way that is capable of giving players the perception of control over the narrative and at the same time allowing the creator of the interactive movie to retain the ability to script a compelling narrative. Janet Murray said in 1997 that interactive narratives require an "active creation of belief" so in that sense as soon as we introduce interactivity, we lose the element of the suspension of disbelief (Murray, 2004). A very high percentage of the participants in this study found the interactivity too simplistic to engage them in gameplay and at the same time too obstructive for them to enjoy the unfolding of the narrative. Looking at our chosen interactive movie for this study, the interactivity only serves to branch the narrative and actually pauses the play until the user chooses a path. For that matter, most interactive movies seem to only use interactivity as an add on and not at all embedded as part of the narrative. Thus, there has been a limited use of ludology within narrative structure that engages the user in both the play and the unfolding of the story. One notable instance goes back to our example of early interactive cinema in 1967 and the interactive movie *Kinoautomat* (Weiberg, 2002) and its use of pre-determinism and making fun of democracy. In this movie the audience voted on each choice but that always lead to the same conclusion. The interactivity is very simple with a branching narrative structure that leads to the next section; the interactivity preserves the narrative and the narrative structure, but at the same time, the interactivity itself is actually part of the narrative in that it tells the story of democracy, no matter what you vote. In the case of *The Outbreak* (SilkTricky, 2008) the creators allowed users to look at a map of what branches they visited to make it easy to watch the

other branches. One problematic consequence of this approach is the embedded message that you need to watch all branches to get the full story, In fact, users should be encouraged to watch once then re-watch from the start if they want an alternative ending so that the repetition does not become mechanical. Watching segments of a whole breaks the narrative and so, by forcing the viewer to go through the movie from start to explore an alternate ending, we are enhancing the value of interactivity, in a sense turning a negative feature of branching narratives into a positive feature of multiple movies. The feedback from participants also validates this premise as they found the map and the process for re-watching to be 'frustrating', 'mechanical' and 'boring'. We propose limiting the user's ability to re-watch segments and treat the branching as a move forward experience. This strategy will only work if 1) the interactivity was part of the narrative as mentioned above; 2) the movie was good in all other aspects such as performance, dialogue, production value and encourages the users to play the movie again. With new technologies like augment and virtual reality, there is a new window of opportunity that such technology will make it necessary for creators to think of new ways to tell stories and encourage audiences to change the mode of viewing and develop an appetite for watching movies that are interactive.

The questionnaire resulted in several key findings. First, gamers were less likely to be immersed in the game while moviegoers were more likely to be immersed. However, they also indicated that they are less likely to play again, especially if they had to pay for it. Second, while gamers found the interactivity easy they also indicated it was not natural and somewhat boring. Surprisingly, non-gamers also found the interactivity easy but not natural and a distraction for the already weak narrative. Finally, both groups indicated they were less likely to seek such games even though they enjoyed it. The reason gamers gave was lack of challenges, while moviegoers were frustrated about having to replay every time they made the wrong choice.

A limitation of our study, in addition to the small sample size, is that it is based on the observations of participants viewing only one interactive movie. This means that there are many factors specific to that case study interactive movie that might affect the data. For example, the quality of the narrative, acting, and production values would greatly affect the responses in regards to enjoyment. Also, the branching mechanisms and the existence of a 'visited branches' map could affect flow and could have contributed to the frustration reported by many participants. Consequently, the findings in this study should be considered in relation to the choice of *The Outbreak* as the case study and cannot be generalized to all interactive movies.

6. Conclusion

In order for an interactive movie to be immersive, it needs to find a balance between ludology and narrativity by ensuring that the interactivity is not only an add-on that interrupts the audience's suspension of disbelief but should be fully integrated in the narrative structure. Furthermore, the interactivity should include a level of complexity that makes the ludology challenging and immersive. Based on the results of our study, both gamers and non-gamers found the interactivity either distracting and disruptive to the narrative or boring and too simplistic to be immersive as ludology. The

paper concludes that the problem with interactive movies is the lack of a successful model of an emergent interactive narrative format that can introduce meaningful ludonarrative experiences capable of maintaining the narrative storytelling but also effectively introducing game play that is both challenging and immersive. The paper recommends that for interactive movies to be more immersive, the experience needs to include non-obstructive interactive mechanisms able to immerse non-gamers in the movie narrative, while at the same time containing complex game play fully integrated in the narrative, able to engage avid gamers in the 'narrativity' while preserving the in-game flow. In the case of basic interactive movies, the low level of challenge would lower the chance of creating a flow for gamers, while the need to replay some segments will take the player - if only momentarily – away from the attention on the viewing, thus lowering their level of immersion (Nordin et al., 2013). Therefore, a very persistent question remains in relation to interactive movies, how can we include interactivity in the narrative that engages gamers but also does not require the user to co-author this narrative to the degree that makes the experience unpleasant or less immersive for non-gamers (Weiberg, 2002).

The problem, we conclude, lies in the definition of interactive movies. Once there is complex interactivity, it is no longer a movie to watch but a game to play, and on the other hand, if the interactivity is too simple, then it is merely a distraction from what otherwise can be a linear movie. The definition of an interactive movie implies a traditional movie with added interactivity; this has not succeeded in forming a clear genre because the type of interactivity has not been well defined, essential to forming a genre.

In conclusion, interactive movies, while technically possible, present a complex challenge in that in order to create an engaging narrative structure that has complex interactivity implemented within the narrative itself requires a new breed of talented screenplay writers able to adapt to the new format; writing screenplays for a new market has yet to prove profitable. The results of our survey showed that most students surveyed had never played an interactive movie before but did enjoy the experience even when the story was not as engaging as they would have liked. At the same time both gamers and non-gamers alike were less likely to seek out interactive movies because they felt the narrative was non-compelling or the interactivity frustrating. Thus, the market is not yet developed, and it will require considerable investment in talented writers and interactive designers to produce a few hit interactive movies before audiences are willing to consume such movies regularly. Netflix recently added interactivity to some of its content and allow users to choose their own path in an unfolding story, a move that might bring interactive movies to mainstream audiences (Mangan, 2017). Notably, Black Mirror Bandersnatch interactive episode was met with big fanfare and positive audience engagement, however those offering remain niche and experimental (Chua, 2019). The idea that games will become movies is problematic no matter how many cut-scenes we add, but the possibility of movies becoming interactive is a more appealing prospect, and it seems that online platforms realize the potential but have to find a powerful mechanism where interactivity is not an add-on but fully integrated into the narrative. This paper argues that a new type of interactivity where

the interactive mechanism is complex enough to generate flow, and where ludology is deeply entwined with narrativity in such a way that the audience experience is that of a dual immersion maintaining the suspension of disbelief while at the same time engaging in such a way that they attain flow. This level of integration between ludology and narrativity could be hard to accomplish with current technologies and using live-footage, thus, the future of interactivity will require major advances both in technology and the ability of writers to write interactive scripts with multiple endings that can both engage in gameplay and the storyline.

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