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Alexander John Liederman 22 March 2020

Black Mirror: Bandersnatch

A Study on the Illusion of Control and the Potential of Interactive Film

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Abstract

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By Alexander John Liederman

The world of media is changing. In an era of saturated interactive content, the Netflix film *Black Mirror: Bandersnatch* (David Slade, 2018) marks an important reflection on the convolution of media and the immense business potentials for new types of interactive content. In this thesis I seek to analyze *Black Mirror: Bandersnatch* and its use of interactivity in relation to the self-reflexive, meta-referential themes while also addressing the history and theoretical foundations of interactive film and speculate on the business potential of interactive content. I argue that *Bandersnatch* interweaves the illusion of control for viewers through a symbiosis of narrative themes and interface. This potential for combining the function of the interface into a direct theme within the narrative marks an important storytelling potential for interactive film. To fully unlock the potential of this type of content, I argue that interactive film should be understood as its own medium rather than a sub-genre of film or video games. Understanding it as a unique medium allows for further development of monetization and hence additional production of interactive film. I argue that the existing metrics of user analytics can used by Netflix and other companies to further progress commercial potential. Interactive film is an exciting new frontier into the possibilities of storytelling and further enhanced monetization, but risks being discarded as another cinematic gimmick. Further understanding of interactive film as its own medium and development of existing commercial metrics will allow for further production of compelling new interactive content.

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For much of this thesis, I began to feel Stefan's frustration in managing the organization of all the various threads of my argument. Thankfully, with the help of my parents, friends and my mentors in the Film and Media Studies Department I managed to achieve what seemed an impossible challenge. Thank you to my mother for guiding me in this project and continuing to support me. Thank you to Dr. Bernstein for sparking my passion for film and continuing to push me academically. Thank you to Dr. Reynolds for your mentorship during this project, I would not have been able to do this without you.

And thank you to *you*, the reader. I hope this provides you with a greater idea as to the potentials of interactive film or even just something that can kill a couple of hours. Whatever value this holds, I thank you for taking the time to read my work.

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Introduction

The history of film has a number of landmarks that have fundamentally progressed the potential and foundational characteristics of the medium. We are currently living in the development of arguably the most influential period in film history; the rise of Netflix and the streaming service. Streaming services have catapulted film into the era of portability from the confines and selective limitations of the theatre, allowing viewers to choose what, when, how and where they want to watch. Now, with Netflix's interactive film *Black Mirror: Bandersnatch* (David Slade, 2018), film is transforming once again. For a majority of viewers, *Bandersnatch* will be the very first interactive film experience and its release is so important to the history of media as its resurgence highlights the lack of any significant scholarly studies on interactive film; a medium which transforms the viewer from a passive observer to an active participant.

In the context of 21st century media through streaming services, viewers are no longer as focused on the content as they once were. The rise of smartphones and streaming services have drastically changed the way viewers engage with media as they tend to watch their respective programs while constantly multitasking. We have all experienced levels of this multitasking. For younger audiences, "watching Netflix" is really just hanging out together and checking other feeds on their smartphones while a show plays in the background. Many times, viewers will have no idea or even interest in the program but simply leave it on to have background noise. For a majority, there is no longer a purely undistracted engagement with the program. In a study measuring in-home eye-tracking, Facebook IQ determined that 94% of participants kept a smartphone on hand while watching and that viewers focused on the content for just 53% of the time (Facebook IQ, 2017). Another study found that multitasking during a program occurred almost 40% of the time when people were watching, with most multitasking occurring during the

program rather than during intervals. Additionally, 36% of those multitasking spent their time on another device (Shokrpour and Darnell, 2017, 11). What these findings indicate is that film and television programming are no longer the sole focus of attention for viewers. Streaming services have created an environment in which programming is a catalyst for multitasking and the smartphone contributes to constant levels of distraction throughout the program. The theoretical implications of this remain to be seen, but what is clear is that film and television are no longer the primary focus of the viewer. Interactive film, within the context of 21st century media, is more engaging than traditional film and television as interactive film demands a high level of engagement through quick decision making based on narrative comprehension. In this regard, traditional film and television are comparatively "passive."

In this thesis I seek to analyze *Black Mirror: Bandersnatch* and its use of interactivity in relation to the self-reflexive, meta-referential themes while also addressing the history and theoretical foundations of interactive film and speculate on the business potential of interactive television and film. Chapter 1 is focused on *Bandersnatch* itself. In section 1.1 I outline a brief history and the prevalent themes in both the *Black Mirror* television series created by Charlie Brooker and *Bandersnatch.* 1.2 will outline the mechanics of the decision-based interface in *Bandersnatch* outlining the display, format and theoretical construction using Marie Laure Ryan's architectural theories of "The Network" and "The Tree." Since *Bandersnatch* is built on narrative permutations, 1.3 will outline the plot of the film, tracking only the major decision-branches and then moving into a summary of the five possible endings. Following the general narrative thread and multiple branching pathways is difficult to follow simply with text, so please refer to the provided *Bandersnatch* decision-branching pathway map (Figure 1). 1.4 will discuss the main themes in *Bandersnatch* which are inherently symbiotic to the interface. I argue

that the self-reflexive, meta-referential moments in the film work in conjunction with the intersecting realities present in the film and the interface to highlight the theme of the illusion of control. 1.5 highlights the critical and general public reception of *Bandersnatch* after its 2018 release, and in particular, discusses effectiveness through public perception of the interface in relation to the narrative.

Since interactive film incorporates interactive elements from video games, chapter 2 discusses the definition, history and theoretical aspects of interactive film in order to provide more clarity as to the characteristics of the medium. 2.1 provides a premise for the categorization of interactive film outlining the vague scholarly landscape and the issues that come with it. 2.2 delves into the history of interactive film tracking the development of the interface with William Castle's 1961 film, *Mr. Sardonicus* (William Castle, 1961), to *Kinoautomat* in 1967 (Radúz Činčera, 1967) and with the beginning of media convergence with Full Motion Video in the early 1980's, the rise of interactive film in the 1990's and narrative driven, decision based video games like *Heavy Rain* (Quantic Dream, 2010) at the start of the 2010's. 2.3 will finally outline some of the theoretical definitions of video games in comparison to film; here I propose that interactive film ideally would be understood as its own medium rather than a convergence between film and video games. I end with a preliminary definition that is intended to provide a foundational understanding of the defining characteristics of interactive film open to further research and discussion.

Chapter 3 discusses the business potential of interactive film given the success of *Bandersnatch*. Considering Netflix's lack of transparency about its business plan for interactive film, chapter 3 is not intended to be taken as a road map but a prospectus into commercial potential. 3.1 outlines the current business landscape for Netflix highlighting the range of

competition while also showing the adoption of interactive film into other products using Tinder's *Swipe Night* (Evans, 2019) as an example of further monetization. 3.2 discusses Netflix's use of user analytics and analyses the way that interactive film could enhance the effectiveness of this data. 3.3 highlights the state of product placement speculating that interactive film could adopt virtual product placement for further monetization, albeit with certain ethical and legal ramifications.

Interactive film is still relatively new and Netflix's investment in interactive content marks a renewal of the medium into the public eye. For interactive film to be fully understood, it should be studied in depth as its own medium rather than a media convergence of film and video games. The aim of this thesis is primarily to analyze *Bandersnatch,* outlining the symbiosis between interface and narrative, propose that interactive film should be understood as its own medium and prospect on the business potential through user analytics and product placement. As of 2020, interactive film is still relatively new and is in a phase of uncertainty as companies decide whether to invest in the medium or to let it erode away as another cinematic gimmick.

1. *Black Mirror: Bandersnatch*

1.1. *Black Mirror* and *Bandersnatch*: A Brief History

Black Mirror is a British anthology series created by Charlie Brooker and produced by Annabel Jones which tells dystopian, intersecting stories of technology and its negative effects on humanity. First premiered by the British distributor Channel 4 in December 2011, Netflix acquired the rights to the series in 2015 after two seasons of the show and commissioned a further twelve episodes split into two seasons of six episodes, in 2015 and 2016 respectively. As of 2020, there are twenty-two episodes split into five seasons with *Bandersnatch* being the only standalone film. Brooker's inspiration for the series came from the use of science-fiction to highlight controversial contemporary themes in Rod Serling's *The Twilight Zone* (1959-1964), where human and societal self-reflexivity was able to be furthered explored when set in a fictional, yet metaphorical universe parallel to our own (Brooker, 2011, *The Guardian*). In a 2011 interview with *The Guardian* newspaper, Brooker explained that the purpose of his show was to explore the addictive nature of technology and its potential side-affects, "this area – between delight and discomfort…The 'black mirror of the title is the one you'll find on every wall, on every desk, in the palm of every hand: the cold, shiny screen of a TV, a monitor, a smartphone'" (Brooker, 2011, *The Guardian*). The episodes generally explore a specific type of technology prevalent in our society today and elevate its impact into a dystopian social commentary. They address themes of surveillance, control and societal overreliance on technology as an extension of our body and brain in a mixture of settings ranging from contemporary realities to futuristic dystopias.

The first episode of season one, "The National Anthem" (Otto Bathurst, 2011), is a perfect example of an episode that takes place in a contemporary reality. The episode sees the

British Prime Minister, Michael Callow (Rory Kinnear), forced – both by his cabinet and public scrutiny – to have sexual intercourse with a pig on live national television in order to save a member of the Royal family, Princess Susannah (Lydia Wilson) from execution. The episode does not feature any radical futuristic technological innovations, nor does it portray the world as a dystopia; it is a direct parallel to our contemporary world grounded in realism with an exaggerated societal reaction to a complex problem. As the Prime Minister engages in the act, it is revealed that Princess Susannah was released thirty minutes prior, but since the nation had shut down to watch, no one was aware of her release. It is also revealed that her abduction was the work of an avant-garde artist, Carlton Bloom, and not a presumed terrorist cell. Inspired by the super-injunctions and out-of-control paranoia that strikes with current media frenzy, the episode explores the power that an individual has to manipulate social media in order to completely dominate an entire country's ability to reason and function.

In comparison to "The National Anthem," episode one of season three, "Nosedive" (Joe Wright, 2016), takes place in a pastel-colored dystopian world where people rate each other from one to five stars based on every social interaction they have with each other using their smartphones. Similar to a dystopian credit score and parallel to China's Social Credit System, ratings in "Nosedive" completely determine one's socioeconomic status; having a low social rating can lead to one getting fired, not being able to travel and unable to purchase property. Considering the life changing impact of the star rating system, citizens of "Nosedive" carefully approach each social encounter to ensure that no party is offended, confronted or questioned, thus creating a veneer of artifice where people no longer say what they mean, only say what they know needs to be heard. The episode follows Lacie (Bryce Dallas Howard) who seeks to raise her 4.2-star rating to 4.5 in order to purchase a luxury apartment. When her childhood friend

Naomi (Alice Eve), who has a 4.8-star rating, asks her to be maid of honour at her wedding, Lacie sees an opportunity to dramatically boost her star rating and climb the socio-economic ladder. During her journey to the wedding, a series of social confrontations – what would be considered meaningless in our society but are life changing in the world of "Nosedive" – progressively decrease Lacie's rating until she is eventually arrested after ruining the wedding ceremony. The episode is a critique of the judgmental perception, influence and stature of social media rating systems over our society, affecting the way we interact with each other simply based on digital reputation. While there is much more to discuss in later episodes and in consequent seasons, it is critical to note the thematic construction of the episodes and their fascination with exploring the sociocultural side-effects of an already prevalent or high concept technology, regardless of setting and context.

Black Mirror: Bandersnatch (David Slade, 2018) is a stand-alone interactive film following a young computer programmer, Stefan Butler (Fionn Whitehead), as he races to successfully adapt the fictional choose-your-own-adventure novel, *Bandersnatch* by Jerome F. Davies (Jeff Minter), into a decision-based video game in 1984. *Bandersnatch* is the fifth interactive title released by Netflix and as of early 2020, it remains the only adult interactive film available on the platform. Due to the narrative permutations, run-time for the film fluctuates between 90 minutes to over 2 hours. Interactivity is incorporated in the film with non-linear branching narrative pathways through binary decision junctions given at specific times in the story. During these decision junctions, viewers will be forced to choose between two options that affect the narrative. With over 30 decisions to be made by viewers, 5 possible endings and 1 trillion possible permutations of the story, no two viewings of *Bandersnatch* will be the same (Butler, 2018, *The Washington Post*). Regardless of these permutations, the plot follows Stefan's

eventual descent into insanity as he struggles to manage and program all the possible branching decisions in time with his release deadline. Stefan is hired by Mohan Thakur (Asim Chaudhry), the head of video game distributor Tuckersoft, to develop the game before the November holiday release under the guidance of veteran programmer Colin Ritman (Will Poulter). As Stefan becomes more enveloped and increasingly frustrated with his project, his father Peter Butler (Craig Parkinson) aims to support him by bringing him to a psychiatrist, Dr. Haynes (Alice Lowe). Although the film does not highlight a specific type of technology gone awry, Brooker evolves his concept to highlight the illusion of control that technology possesses over Stefan and the viewer. This is accomplished through the symbiosis of the interface and the non-linearity of time with intersecting temporalities that govern the universe of *Bandersnatch*.

In 2017, Brooker and Jones were approached by Carla Engelbrecht, the director of product innovation at Netflix and Todd Yellin, the head of product at Netflix, to write a *Black Mirror* interactive title specifically marketed to adults (Rubin, 2018, Wired). Other interactive titles on Netflix are animated and specifically marketed to a younger audience; including, for example, the Telltale Games adapted television series *Minecraft: Story Mode* (Telltale Games, 2015) and *Puss in Book: Trapped in an Epic Tale* (Roy Burdine and Johnny Castuciano, 2017). The interface is the same for all interactive titles, displaying two possible options per decision junction, but in comparison to *Bandersnatch* these titles lack thematic complexity. Engelbrecht and Yellin were determined to develop a live-action interactive film significantly more mature and complex than the other interactive titles on Netflix. Brooker and Jones were initially not interested in the project due to technical concerns with the development of interactive content and translation of trademark *Black Mirror* themes of dystopian technology into the medium. However, they were finally drawn to the concept of a videogame designer in the 1980's trying to

adapt a choose-your-own adventure novel while slowly losing his sanity. They came to the realization that telling this story could only be accomplished through an interactive medium. This concept would become one of Brooker's and Jones's most challenging projects, as Jones reflects, "If we'd have known how difficult it was going to be, we might not have done it" (Jones qtd. in McHenry, 2019, *Vulture*).

In total, the film took 18 months to produce, delaying the release of season five with Brooker comparing the total effort to developing four episodes of *Black Mirror* (Strause, Mar. 2020, *The Hollywood Reporter*). *Bandersnatch* required a significant amount of planning and technological innovations unlike the production of a traditional film. The team began planning out the branching narrative pathways by connecting plot points with Post-It notes on a whiteboard. However, they realized that managing the exponentially increasing outcomes would require a more complex tool. Instead of a script, the production team developed an unconventional "vast, sprawling outline written in the videogame programming language Twine," a language most commonly used for telling interactive, nonlinear stories (Rubin, 2018, *Wired*). Twine allows creators to construct links between separate blocks of action and text, also giving the freedom to move around these blocks and links while managing narrative coherence. For Brooker, this was the only way to freely plan and explore the intra-linked story points without the restrictive linearity of a traditional film script: "Every time I had an idea I put it in a box, and you can move them around. It's a bit like making a giant patchwork quilt" (Brooker qtd. in Rubin, 2018, *Wired*). To deal with the exponential growth of so many possible outcomes and decisions, Netflix developed a new type of internal writing tool called the "Branch Manager" (also used in other Netflix interactive content) which allowed hybridization of a decision tree and film script to be incorporated as an understandable language of input and output (Shieber, 2019,

TechCrunch). Netflix also developed an entirely new technology for the project called "State Tracking", allowing viewer decisions to be dynamically tracked and logged in order to deploy the impact of the decision later on in the film. This contributes to a more personalized experience as viewer decisions will actually have an impact on the narrative, rather than simply showing a different scene and then progressing to the same outcome.

Filming was considerably less taxing for the team but still posed its own problems with the maintenance of diegetic consistencies and general direction for director David Slade. To maintain clarity throughout the project and to take into account all the possible reactions for the characters, the film was shot in chronological order over 35 days in a seven-week shoot with the cast only being given two weeks to prep for their roles. In terms of directing all the possible decisions and outcomes, Slade was given a handbook which chronicled all the 250 segments of footage necessary to cover all scenes and variations (Strause, Feb. 2020, *The Hollywood Reporter*). Slade had to film each segment while constantly switching between different versions of scenes to take account for all the possible outcomes and alternate variations on the narrative based on previous decisions. Fionn Whitehead (Stefan Butler) and Will Poulter (Colin Ritman) were challenged by the quick changes to their characters as they had to consistently film back to back scenes while taking into account varying levels of knowledge or emotion (Welsh, 2019, *The Huffington Post*). The total footage for the film culminated in 312 minutes (over 5 hours) of footage, but much of it was cut due to editing difficulties with the software and the essential need to maintain narrative coherence.

Editing the project became another technical challenge for the production team as scenes could not be easily rearranged or cut without altering the flow of the narrative. Segments of action and reaction are tied together, and the addition or removal of scenes would create a

domino effect putting the cohesion of the story at risk and often causing software crashes (Desowitz, 2019, *IndieWire*). Additionally, the editing team realized that certain scenes would be impossible to reach no matter the combination of choices and that certain branches of the story would be seen significantly less than others (Clarke, 2019, *Variety*). Even after release, not even the *Bandersnatch* team is confident about the number of decisions or endings in the final product possible for viewers (Strause, Feb. 2020, *The Hollywood Reporter*). The entire process, from planning, to filming, and finally to editing was a delicate balancing act between what was planned and what was feasible with the tools available.

1.2. Interactivity and the Interface

Before summarizing the plot, it is important to first understand how interactivity is incorporated into the film. As briefly mentioned, interactivity in *Bandersnatch* utilizes a binary decision-based interface that gives viewers a 10-second window to decide between 2 different choices. This decision interface allows for viewers to interact with the film and is displayed as a black rectangle which moves up from the bottom of the screen filling up the lower portion and presenting two possible options (Figure 2). These options are displayed in a concise manner, usually no more than 4 words (for example: “Accept”, “Refuse”, “Throw Tea Over Computer”, “Shout at Dad” etc.) and only express the action that Stefan will perform rather than highlighting the resulting outcome. If the viewer is using a handheld device or game-controller, the device will vibrate to indicate the start of a decision. A white time limit bar on the top of the black rectangle shrinks inwards and at the end plays the corresponding scene based on the viewer’s decision. During this timer shrinkage, the camera will cut between reaction shots of the characters and to different stimuli representative of different options available to viewers in the

respective decision. Decision options do not display any level of consequence, meaning that viewers must determine the consequences of each decision and the most likely outcome based on intuition and previous information given earlier in the film. When a viewer makes a decision, the impact of their outcome will be immediately shown with further consequences explored later in a variety of different story branches, leading to entirely different endings and scenes. It is important to note that if the viewer selects a decision before the timer expires, the film will make the viewer wait until the time completely expires to see the impact of the decision. It is also important to note that *not* selecting a decision option before the timer runs out will prompt the film to play a programmed default decision path independent of where the cursor may lie.

The construction of these branching decisions is parallel to Marie Laure Ryan's theoretical work on the various constructions of branching pathways in hypertext. Hypertext is non-linear text linking one set of data to another set of data serving as the foundation of digital language and the internet. In cyberspace and in digital media, hypertext consists of hyperlinks which connect series of data to nodes (data destinations) through links (pathways of travel). This connection between nodes and links are called branches and allow for the non-linear extensions of a narrative. Ryan argues that "the narrative potential of an interactive text is a function of its underlying structure", the structure being hypertext and the linking of nodes (Ryan, 2015, 294). This kind of language is a purely interactive experience for the user during which they will determine the unfolding of the narrative through the selection of nodes provided by hyperlinks through conscious decisions. Since every segment has several hyperlinks, every user will produce a different permutation of the text and the user of an "interactive text thus participates in the construction of the text as a visible display of signs" (Ryan, 2015, 22). In *Bandersnatch* viewers will engage with the title through a specific internal type of interactivity, "when the user

of an interactive text plays the role of an individuated member of the story world" where "the actions of the user correspond to events in the history of the world" (Ryan, 2015, 294).

As for the architectural structure of branches, Ryan highlights six types of interactive structures – "The Vector," "The Complete Graph," "The Network," "The Tree," "The Database" and "The Maze." The most applicable to *Bandersnatch* is a streamlined limitation of "The Network" (Figure 3) and a more fluid adaptation of "The Tree" (Figure 4). In "The Network," the user will navigate the diegetic world through nodes by links. The formal characteristic of "The Network" is that it contains circuits which allows for nodes to be accessed through different routes creating a non-linear exploration; there is no specific way to reach a specific node and the user may choose a variety of different pathways to reach a specific outcome. Consequently, the author of an interactive title using "The Network" will be unable to control the duration or the course of narrative progression for the user, creating fragmented narrative cohesion. For example, viewers may witness a character death in one node and then later return to a node in which the character is still alive disrupting the linearity of narrative coherence. This type of interactive structure is best suited for analogical connections or for the exploration of multiple alternatives rather than linear stories (Ryan, 2015, 332).

"The Tree" differs from "The Network's" relative freedom of navigation for the user as it does not allow circuits and once a branch has been taken, there is no return to previous nodes. Since branches are isolated from others, this interactive structure controls the user's progression of the story making it easy to "guarantee that choices will always result in a well-formed story" (Ryan, 2015, 333). Consequently, "The Tree's" isolated branches can lead to infinite permutations of the story as the number of decision points grow exponentially. For instance, it could take "sixteen different plots, with thirty-one different fragments, to ensure four decision

points" (Ryan, 2015, 333). This can be restricted through the merging of pathways lowering the number of possible outcomes and permutations while still maintaining narrative coherence. The branching pathways prevalent in *Bandersnatch*

will adopt the underlying structure of "The Tree" but will also allow for viewers to return to specific nodes in which specific outcomes that previously happened will no longer have happened, accomplished with "The Network". *Bandersnatch* uses a level of circuitry to allow for viewers to go back to previous timelines. The risk of narrative incoherence is bypassed by a thematical construction of the universe in *Bandersnatch,* where characters in the diegesis are affected by multiple intersecting realities and can time travel.

To maintain narrative coherence amidst the circuitry of "The Network", certain story branches in *Bandersnatch* will force a viewer to select a specific outcome without providing any option to return to the start of a major branching pathway. These forced decisions provide an illusion of control for viewers as they believe that they have a decision in choosing between two different options that will lead to differing outcomes. However, choosing the "wrong" decision at these junctions will return viewers to their previous choice and they will be prompted to make the "correct" decision. The choice for both options is still available, but to progress the narrative the film forces viewers to select the other option. These types of forced decisions are classified as "Dead Ends." These Dead Ends will always show a montage of what has previously happened in the story and take the viewer back to the original decision, often times with variations in dialogue or even with different options in decision choices representing the merging of intersecting realities. Once a major story path is chosen, the viewer will be pushed towards certain decisions in order to complete the narrative without the option to return to a previous branch. Although these decisions appear to grant the viewers a certain autonomy over the actual

outcome of the narrative, they are not entirely in control and these junctions act more as artificial decision points where the film presents two decisions when in fact there is only one possible decision and outcome. This means that many other scenes and narrative developments - let alone other endings - will not be seen by the viewer unless the film is restarted, and the viewer makes different choices.

1.3. Film Summary

Although the film has many possible permutations, there is a consistent narrative that is followed and must be laid out to understand the dynamic between the overarching themes of illusion of control. In this plot summary, I will briefly explain the outcome of different branching paths, but the implications of these decisions will further be explored in the discussion of themes and interactivity. Due to the considerable amount of decisions and branching pathways, this summary will not explain the impact of every decision and will only cover key junctions in the story where decisions have a direct purpose to the narrative. In order to fully understand the complexity of the film while also preserving time that would otherwise be dedicated to explaining the entire story, an *IGN* flowchart of every decision and outcome has been provided for reference (Figure 1). Please refer to the decision flow chart as a way to track the flow of the narrative and the structure and impact of each decision.

The film opens in an undefined room with a clearly dated analogue TV playing the intro theme of *Black Mirror,* which then presents the viewers with a tutorial of the interface and explaining the function of interactivity in the film. After the tutorial, the film opens in England on July 1984 and we are introduced to a young video game programmer, Stefan Butler who lives with his father, Peter Butler. He hopes to successfully adapt his deceased mother's (Fleur Keith)

favorite choose-your-own-adventure-book, *Bandersnatch,* into a decision-based video game. We learn that the author of *Bandersnatch,* Jerome F. Davies (Jeff Minter), lost his grasp on reality trying to organize all the possible branching decision paths and murdered his wife by decapitation, leading to his arrest and the development of an infamous cult status. The viewer's very first decision for Stefan takes place when Peter asks him whether he would like to eat either "Sugar Puffs" or "Frosties" for breakfast. This decision has no major impact on the film (the chosen cereal will reappear as an advertisement before the Jerome F. Davies documentary) and primarily serves as an extension of the interface tutorial.

The second choice is similar to the first one in its insignificant impact on the story's major plot points and only allows the viewer to get accustomed with the interface while providing a slight diegetic change, in this case a prop or soundtrack change. While on a bus to Tuckersoft, viewers will choose for Stefan to listen to either "Thompson Twins" or "Now 2". This will determine the soundtrack that both Stefan and the viewer will listen to on the bus ride. Sharp-eyed viewers will notice a billboard that has a graffitied branching pathway symbol (Figure 5) next to the words "No Future," which foreshadows the impact of the symbol's decision on Stefan's journey. We learn four things from these opening scenes about Stefan and his domestic life, but also how to approach the film and its presentation of decisions. We learn early on that Stefan takes an unknown medication, his father locks a door indicating a lack of trust and/or secrets within the family, he has a questionable relationship with his father, and we learn that a neighborhood dog invades the family's garden and digs up their flowerbed. It is not clear at first for the viewer, however, that all these factors – the pills, the locked door, the dog and the branching pathway symbol- will be key pieces of information that foreshadow the impact of certain decision aiding the viewers ability to better assess the consequences of their decisions.

The entire opening sequence acts as a tutorial for the viewer while providing additional information that will be useful in assessing the impact of certain decisions and outcomes as the narrative progresses. It is clear that the director demands the viewer to take note of these highlighted stimuli and use them to best inform which decision will lead to the most desirable outcome.

Stefan meets with the head of the video game publisher Tuckersoft, Mohan Thakur, who has agreed to look at a preview of the game. Stefan also meets his idol Colin Ritman, a legendary video game developer for Tuckersoft. After a successful demo for Mohan and Colin, Stefan is offered the opportunity to finish the game at Tuckersoft and can either choose to "Accept" or "Refuse". If the viewer chooses to "Accept", Colin will tell Stefan "Sorry mate, wrong choice" and bring the viewer to the film's very first Dead End, which sees Stefan complete the game and receive a 0/5 stars review by notable video-game reviewer, Robin (Paul Bradley). Certain endings and Dead Ends will see *Bandersnatch* reviewed by Robin; the goal for Stefan – and the viewer – is to earn a five-star review. This is the first of many Dead Ends forcing the viewer to "Reject" the offer and instead work on the video game from his bedroom at home. After selecting "Accept", the viewer sees a quick montage of what has previously happened in the story and is returned to the moment where Stefan introduces himself to Colin discussing his new game "Nohzdyve". In this first introduction Colin explains to Stefan that his new game has a bug with the rendering engine, but when the viewer is returned to this junction for the second time, there are some differences in their interaction. First, Colin asks Stefan if they have met before, hinting at Colin's awareness of previous events in different realities. Secondly, Stefan correctly identifies the rendering bug before Colin does. This sets the precedent that Dead Ends do not erase the impact of the viewer's previous decisions and establishes the fact that events in one

reality will affect the outcome of other realities. Mohan gives Stefan a September deadline so that the company can publish the game in time for the Christmas sales.

After being forced to "Refuse" the offer to work at Tuckersoft, Stefan speaks with Dr. Haynes about his project and is asked if he is willing to talk about his mother's death. If viewers choose "No", Dr. Haynes will ask again. Once again, the viewer will have the choice to either choose "No" or "Yes". Choosing "No" will progress along the same path, however choosing "Yes" will lead to other available decision options later in the film impossible to obtain without speaking about his mother at this decision junction. When choosing "Yes", the viewer will learn the backstory about his mother's death. When Stefan was five years old, his father confiscated Stefan's favorite toy, a stuffed rabbit, because he was concerned that his son was playing with dolls. Because of this, Stefan refused to leave for a train without his rabbit, forcing his mother to take a later train which consequently derailed and killed her in the accident. This conversation reveals Stefan's resentment towards his father, that he feels responsible for his mother's death and that his *Bandersnatch* adaptation represents for him a redemptive tribute for his mother. After the therapy session, Stefan will go to W.H. Smith (a British newsagent still in business today) to buy a vinyl record. Once again, viewers will have the choice to choose between "The Bermuda Triangle" or "Phaedra" which will play during a game development montage.

As Stefan starts to work on the game, he encounters a variety of software bugs and he becomes increasingly stressed about the project. Viewers are forced to choose "Shout at Dad" rather than "Throw Tea Over Computer", which will lead to a Dead End. After a hostile confrontation with his father, Peter decides to take him to Dr. Haynes for another therapy session. Before entering the clinic, Stefan sees Colin on the street and viewers are given the choice to "Visit Dr. Haynes" or "Follow Colin". If viewers choose to "Visit Dr. Haynes", Stefan

will reveal that he is overly stressed about managing the decisions into branching narrative pathways and feels a lack of control over his decisions. Believing Stefan is beginning to slip into a state of psychosis, Dr. Haynes decides to prescribe him an increased dosage of his medication. As she writes out a doctor's note, viewers are given the choice for Stefan to "Bite Nails" or "Pull Earlobe". Whichever is selected, Stefan will physically restrain himself from doing so, marking a fight against the viewer's autonomy.

If the viewer chooses to "Follow Colin", they will be brought to a different narrative branch which can only be reached by choosing to "Follow Colin". Stefan will follow him up to his apartment where he meets Colin's girlfriend, Kitty (Tallulah Haddon) and their baby daughter, Pearl. Stefan explains to Colin that he is struggling to finish the game in time for the September deadline. Colin will offer him LSD as a solution to his problems. Regardless if users choose to accept or reject, Colin will spike Stefan's tea leading to the same outcome. When the hallucinogen kicks in, Colin explains to Stefan that time is a construct and that there are multiple realities and what happens in one reality will affect other realities as well. Time travel can be accomplished with mirrors, which let one move through time. In an allegory to *Pac-Man*, Colin also claims that free-will is an illusion and that the government has secret mind-control programs called P.A.C. (Program and Control) that have paid actors impersonate relatives which drug and monitor subjects. Colin also claims that the universe has a cosmic flowchart that dictates where one can and cannot go. To prove these theories to Stefan, Colin asks Stefan to jump off the balcony. If viewer chooses "Stefan" to jump, he dies and *Bandersnatch* is finished abruptly and released to poor reviews, once again signifying another Dead End where viewers are forced to choose "Colin" to jump. When Colin jumps, Stefan wakes up in his bed believing that the whole encounter was just a nightmare; however, Colin will be missing for the rest of the film and other

characters will question his whereabouts. For example, on deadline day when Stefan asks for more time, if viewers had previously chosen the “Follow Colin” option leading to his death, an intern will hand Stefan a VHS tape claiming it is from Colin. If users chose not to “Follow Colin”, he will still be alive and instead give Stefan the tape directly.

This narrative branch will return viewers to the second visit with Dr. Haynes. After the session, viewers are given three possible options to determine what to do with his medication. “Flush Pills” down the toilet will remain a permanent option, however “Throw Pills in Trash” will only be an option if viewers decide to follow Colin and return back to the psychiatrist later on in the film. “Take Pills” will only be available if viewers decide not to follow Colin and choosing this option will lead to a Dead End in which *Bandersnatch* is released and gets another poor review from Robin.

As the deadline approaches, Stefan begins to encounter increasingly detrimental software errors and begins to feel as if he is being controlled by an external force and has no free-will over his actions. Watching the documentary about Jerome F. Davies given to him by Colin, Stefan begins to see similarities to Davies’s story and his own trajectory. During the writing of his book, Davies became increasingly obsessed with the branching pathway symbol which he believed signified multiple realities being split into two. He believed that the demon from his book, Pax, was in control of his free will. His daily consumption of hallucinogens and paranoid delusions that his wife was drugging him led to a mental breakdown, culminating in the decapitation of his wife in order to finish the book.

After another software crash, viewers will be forced to choose “Hit Desk” rather than “Destroy Computer” in another Dead End. Viewers will then choose an item for Stefan to take to bed, either a “Book” about programming decisions into a video game or a “Family Photo” of

Stefan, Peter and Fleur. This decision will lead to 2 separate narrative branches. Choosing "Book" will have Stefan take Peter's keys to his office while he is sleeping to discover a locked safe. Viewers will be prompted to enter a 3-letter password; however, three of the four available options – "JFD," "PACS" and "TOY" – are completely dependent on previous decisions. However, "PAX," "JFD" and "PACS" will both lead to the same outcome in which Stefan will wake as if the whole encounter was a nightmare and continue working on the game. "PAX" will always be an available option and viewers will see Pax, the demon from *Bandersnatch,* lunge towards Stefan. If Stefan did not follow Colin outside the psychiatrist, "JFD" will be an available option in which Davies will appear instead of Pax. If users chose for Stefan to follow Colin, "PACS" will be an available decision and will reveal that the secret government agency, P.A.C.S., has been experimenting on Stefan since he was a small child. It is revealed that his house is actually a constructed set in an underground laboratory and that Peter is a scientist drugging Stefan through his prescribed medication and by spiking his food and drink with a mysterious liquid. It is also revealed that Fleur's death was staged.

Alternately, if viewers choose "Family Photo", Stefan will go to his bathroom mirror. If viewers did not choose to talk about his mother with his psychiatrist, the mirror will break when Stefan tries to crawl through it, returning viewers to the path as "PAX", "JFD" and "PACS". If viewers did talk about his mother with his psychiatrist, another narrative branch will open, and Stefan will crawl through his mirror – now a fluid membrane – and emerge on the other side as a five-year-old version of himself. Stefan will re-live the moment where he looks for his stuffed rabbit before his mother goes on the train and will then return viewers to the same branch as the other three possibilities. This will unlock the ability to return to the safe later in the film and input "TOY," unlocking an alternate ending.

Regardless of previous choices, viewers will progress to the final major decision branch of the film. After waking from his nightmares, Stefan will encounter another software error and be prompted to either “Destroy Computer” or “Throw Tea Over Computer”. Once a common choice for the viewer ending in a Dead End, choosing either will see Stefan physically resist the decision and instead call out “Who’s there?”. From here, the viewer can choose a series of explanations that display on Stefan’s computer screen which will vary based on previous decisions. This junction is a critical part of the film which will determine 4 out of the 5 possible endings for the viewer, specifically “Film” Ending, “Netflix Action Sequence” Ending, “Jail” Ending and “History Repeats Itself” Ending. From this junction, 4 of the 5 endings can be achieved, 3 of these endings being more significant and consequently “true” to the plot. When an ending is reached, the viewer is always presented with the option to return and make different choices or exit to the credits. Although neither Brooker nor Netflix have established the true ending, the film utilizes the ratings given by Robin as an indicator to the best ending: the main “true ending” seeing Robin give the game a perfect five-star review. Each ending will be labelled to maintain coherence through the analysis.

The first two subsidiary endings stem from the same decision branch where Stefan will demand to know who is controlling him. Viewers are given the choice to either select the branching pathway “Symbol”, “Netflix” or “PACS”. The “Symbol” will always be an available choice; however, “Netflix” will only be available if Stefan did not see the P.A.C.S. conspiracy or if the P.A.C.S. has already been watched. “PACS” will only be available if Stefan saw the P.A.C.S. conspiracy in Peter’s safe. The “Jail” Ending and the “History Repeats Itself” Ending are triggered from choosing to display the “Symbol,” however the “Jail” Ending can be triggered by choosing to display “PACS” on Stefan’s computer. Triggering the junction for these two

endings is accomplished by choosing the branching pathway symbol which will lead to Stefan running downstairs claiming that he is not in control of his decisions. As Peter tries to console Stefan, the viewer will be given the option to either “Back Off” or “Kill Dad”. If viewers choose “Back Off”, Stefan will collapse into Peter’s arms leading to a Dead End which returns viewers back to the computer decision. If viewers go through the process again and choose “Back Off” again, viewers will unlock the “TOY” option for unlocking Peter’s cabinet. If viewers choose “Kill Dad”, Stefan will smash an ashtray over Peter’s head killing him instantly. From then the viewer will be prompted either to “Bury Him” or “Chop Up His Body”, with each decision leading to each respective ending. The “Jail” Ending is triggered by choosing “Bury Him” which will see Stefan bury the body and then receive a call from Mohan asking if Stefan can deliver the game by the end of the day. From here, a series of different narrative branches will be available based on previous decisions: for example, if viewers chose not to “Follow Colin”, Colin will show up to the front door where viewers will be given the choice to kill him or let him leave. These can be explored in the decision flowchart as, regardless of what occurs, they will all lead to the “Jail” Ending. The film ends showing Stefan burying his father and successfully completing the game while the neighbor’s dog digs up Peter’s body. We later see Stefan in a jail cell scrawling the branching pathway symbol into the walls of his cell while a TV in the background shows Robin giving a poor review of the game.

The “History Repeats Itself” Ending is triggered by choosing to “Chop Up His Body” and will see Stefan carve up his father’s body in a montage sequence where he explains to Dr. Haynes that his father decided to go on holiday allowing him to successfully finish the game. This ending is a direct allusion to Davies’s fate and will also see Stefan in jail carving the branching pathway symbols; however, in this ending Robin gives the game a perfect 5-star

review. We find out that the game was pulled from shelves when the murder of Stefan's father was discovered, leading to Tuckersoft going bankrupt. Jumping forward to the present day, a grown-up Pearl Ritman (Laura Evelyn) explains in an interview that she is currently doing a remake of Stefan's story for a rumored-to-be Netflix special. After the interview, Pearl starts the film – which is in fact the very beginning of this film – but the software crashes. The viewer is then given the choice to either have Pearl "Throw Tea Over Computer" or "Destroy Computer". Either decision will end the film, suggesting that Pearl will undergo the same fate as both Davies and Stefan.

Choosing "Netflix" will lead to two separate endings. The computer monitor will explain to Stefan that he is being controlled by viewers from a streaming platform in the 21st century for their entertainment. After Stefan breaks down, convinced that he is not control of his own actions, Peter takes him to Dr. Haynes where Stefan explains that all of his decisions are determined by Netflix. Questioning this logic, Dr. Haynes argues that if this were the case, there would surely be more action in his life. From here a fight scene will breakout between Stefan and Dr. Haynes giving the viewer the option to either "Leap Through Window" or "Fight Her". Choosing to "Leap Through Window" will trigger the "Film" Ending, revealing that Stefan is in fact an actor named Mike on a movie set. The director comes up to a very confused Stefan claiming that he was not supposed to climb out of the window and was instead meant to fight Dr. Haynes. The film ends with the director calling for a medic. Choosing "Fight Her" will trigger the "Netflix Action Sequence" Ending and will see Stefan fight Dr. Haynes in a deliberately over-the top fight scene until his father intervenes, dragging him out of the clinic as Stefan screams about Netflix. These two endings are considered official as they both present the option to exit to credits or return back to previous decisions, but they are considerably less substantial

than the other three endings. In addition to not presenting any finality to the narrative, *Bandersnatch* is never shown to be released, making these two endings more of an inside joke than anything substantial. Viewers will be returned to the previous decision in determining what to show Stefan on his monitor.

The last ending to be discussed, the "Death" Ending, is considered to be the hardest ending to unlock and requires a specific set of decision prerequisites to be met. After being forced to "Hit Desk" after watching the Davies documentary, viewers must choose for Stefan to take the "Family Photo". In order to travel through the mirror, viewers must have chosen for Stefan to talk about his mother at the first therapy meeting with Dr. Haynes. After re-living the past, Stefan will wake up as if from a nightmare and the film will continue on the same path as the previous 4 endings. When Stefan is prompted to kill his father, the viewer must choose for Stefan to "Back Off" twice. Although this is a Dead End, selecting it twice will give the viewer the option to input "TOY" into his father's cabinet. Inputting "TOY" will replay the 5-year-old Stefan sequence about his mother's death and the stuffed rabbit, but in this reality, Stefan will find the rabbit and be given the option to join his mother on the train. Choosing "No" will return viewers back to the branch where he wakes up from a nightmare. Choosing "Yes" will unlock the ending and see five-year-old Stefan be killed on the train with his mother. After this sequence, the film cuts to present day in which it is revealed that the present-day Stefan has dropped dead in his chair during the very first therapy session with Dr. Haynes. The film will end without Bandersnatch being released. This is clearly not a preferred ending.

1.4. Themes

Unlike traditional film, *Bandersnatch* does not offer any definitive narrative facts due to the 1 trillion possible permutations. When analyzing or critiquing a film there is a clear formula that one abides to form subjective interpretations; selection of an objective fact – whether that be a plot point a detail in misé-en-scene or character actions – and a subjective interpretation of how that objective detail fits into one's interpretation. Admittedly there is a set narrative progression for each viewing, however the different story branches and endings available to the viewer complicate this level of narrative consistency by presenting alternate realities. One viewer may discover that Stefan is being controlled by P.A.C.S. and kill Peter, however another viewer may instead completely change the timeline of events by travelling back in time and having five-year-old Stefan die along with his mother. These wildly differing realities complicate consistent thematical analysis. Utilizing interactivity through branching pathways neutralizes any form of traditional film analysis and forces the viewer to look past small details and grasp the larger picture and how these themes come into play with the individualized experience that they have chosen.

Interspersed throughout *Bandersnatch* are moments of self-reflexivity and meta-reference. Self-reflexivity in film is defined as "any device which reminds the audience that they are watching a film" (Wolf et al., 2009, 391). This can be accomplished in a variety of methods like looking into the camera and addressing the audience or making a film about making a film, however the unifying factor for these different methods is making the audience aware that they are watching a film. This pairs with the theory of meta-reference in which a specific media text will make references to other media artefacts, its medium or hierarchy of knowledge available to the viewer (Carla Taban, 2013, 188). The viewer transcends preoccupation with the diegesis

itself and "becomes conscious of both the medial (or 'fictional' in the sense of artificial and, sometimes in addition, 'invented') status of the work under discussion and the fact that media-related phenomena are at issue, rather than (hetero-) references to the world outside the media" (Wolf et. al, 2009, 31). These two theories will combine to create the primary theme of the illusion of control that viewers have over Stefan and the diegesis by illuminating the presence and function of the medium.

There are a number of moments where *Bandersnatch* uses self-reflexivity by directly addressing the viewer's control over the diegesis and having characters hint at the function of the interface. The most obvious moment of self-reflexivity is when viewers are presented with the option to choose "Netflix" as a response to Stefan's query as to who he is being controlled by. Having Stefan be aware of a greater force controlling his free will is sufficient enough to make audiences aware that they are watching a film, but *Bandersnatch* takes it further by directly addressing the presence of Netflix and the function of the interface to the viewer. Choosing the "Netflix" option will explain to Stefan that every decision he has made, and will make, is being controlled by viewers on a 21st century streaming entertainment platform; this is the viewer, this is a reference to *us*. This reference to our current actions while watching the film allows for the world of the fiction and our reality to converge**.** In short, self-reflexivity is accomplished by addressing the level of control the viewer has on the characters. Self-reflexive revelations like this do not disregard the level of control the viewer has over Stefan, and instead make it seem as if the viewer is directly interacting with him rather than just observing his actions as a passive spectator. It is an extremely effective mix of interface and diegesis to heighten the level of control the viewer has over Stefan and the outcome of the narrative.

In addition to referencing Netflix, *Bandersnatch* meta-references other episodes of *Black Mirror.* There is a plethora of meta-references – for example, Colin's game "Nohzdyve" referencing episode one of season one, "Nosedive" – however the most meta-referential is the branching pathway symbol which is clearly a direct allusion to "White Bear" (Carl Tibbetts, 2013), episode two season two. In this episode, Victoria (Lenora Crichlow) wakes up in a mysterious town where almost everyone is mind controlled by a television signal and fixated on filming Victoria with their phones. While being hunted by mysterious killers wearing balaclavas with the branching pathway symbol – coined as the "White Bear" –, Victoria must find a way to stop the "White Bear" mind control transmission before she is caught by the hunters. It is revealed at the end of the episode that Victoria is actually subject to a form of amnesia-based torture at the White Bear Justice Park after being found complicit with her fiancés, Iain Rannoch (Nick Ofield), abduction and murder of Jemima (Imani Jackman), a small girl. For her punishment, Victoria is held captive in a type of human zoo where attendees will watch Victoria's "journey" to turn off the transmitter. After she succeeds, she is publicly humiliated and reminded of her crimes and then she will then have her memory wiped and have the day restart. The "White Bear" symbol is revealed to actually be her fiancé's neck tattoo, but also functions as a symbol for the mind control transmitter.

This is no coincidence that both the "White Bear" symbol and the branching pathway symbol in *Bandersnatch* represent a level of mind control and lack of free will. In both titles, characters progress through the narrative convinced of the reality of their situation. Victoria believes that she is being hunted by killers and the world has fallen to a mind control device and Stefan believes he is in control of his free will. In both of the climaxes, the characters undergo a reality shifting revelation where their free will is revealed to be entirely controlled by a greater

entity. Victoria is under the control of the captors in White Bear Justice Park destined to re-live the same day for the rest of her life, and it is revealed that Stefan's free will is under the control of greater force, the branching pathway symbol, PACS or Netflix, depending on the reality option the viewers choose. In addition to connecting the *Black Mirror* universe, meta-references like this further remind the viewer that they are watching a film. Additionally, this meta-referential address directly connects Stefan and the viewer together by transcending the barrier of fiction and reality; our choices in reality have autonomy over the outcome of fiction. *Bandersnatch* evolves this level of interaction by addressing the impact the viewer has on the diegesis implicating the viewer as complicit in Stefan's mental breakdown – especially pronounced if viewers decide to kill Peter – while also affirming the real agency viewers have over the story.

Other characters will hint at the mechanics of the interface further referencing the presence and function of the medium over the diegesis. Throughout the film, Colin is a character that is in touch with the rules of the universe and consequently with the interface itself. This is first explored in Stefan's meeting with Mohan and Colin where the viewer is given the decision to either "Accept" or "Refuse" the offer to work on the game at Tuckersoft. Colin's awareness of the "right path" affirms his knowledge of different realities and the mechanics of the medium. The LSD sequence with Stefan and Colin further affirms Colin's role as a guide to the interface for the viewer. This entire interaction acts as a subtle tutorial for the viewer on how interactivity plays into the outcomes of the diegesis, essentially disguising the technical limitations of the film as mechanics of how the *Bandersnatch* universe functions which gives "a setting that not only helps the player frame her actions, but is also engaging enough that is has some value in itself" (Egenfeldt-Nielsen, 2020, 305). Colin's explanation of multiple realities and the cosmic

flowchart which dictates where one can and cannot go, are simply just other ways to explain the function of Dead Ends not as a technical limitation, but as a characteristic of this universe. Dead Ends are disguised as mechanics of the diegesis with the inclusion of alternate endings to Bandersnatch's outcomes and variations in dialogue and action with previous scenes, however they are clearly a cinematic equivocation to force the viewer into specific paths and consequently specific outcomes to the story. This is Colin's definition of the cosmic flowchart which determines where one can and cannot go; essentially the limitations of the interface.

In addition to referencing the software's function within the diegesis, these junctions further explore the possibility of how intersecting temporalities can further expand on previous viewer decisions and tie into the deeper themes of illusion of control. This is best explored when Stefan uncovers his father's secret cabinet and is prompted to input a 3-letter passcode. "PAX" and "JFD" do not have much effect on the actual narrative and serve the same function to reinforcing the whole sequence as a nightmare; however, "PACS" and "TOY" directly influence the state of Stefan's reality. When choosing "PACS", Stefan will find out that Peter is actually a government scientist that has been experimenting on Stefan since he was born, staging his entire reality. Stefan will wake up as if from a nightmare, but if the viewer decides to choose "PACS" when Stefan asks who's there, he will automatically kill his father and then end up with the "Jail" Ending. As discussed previously, choosing "TOY" will see Stefan travel back in time and die with his mother on the train in the "Death" Ending. It is clear that this universe is inherently ambiguous in its manifestation of outcome and temporality, and only our decisions establish the materialization of this world. Similar to the Schrödinger's cat theory, everything and anything is possible but only made material when the viewers chooses to do so.

It is clear that the viewer has the power to control which reality Stefan will experience making the viewer an omniscient being further reinforcing the control they have over the diegesis. This degree of autonomy is shattered for viewers when Stefan begins to resist our commands. *Bandersnatch* directly gives us the illusion of control through its interface, making it seem as if the viewer has complete autonomy of the characters and the eventual outcome of the story. One of the fundamental tricks for any illusionist is equivocation. It can be used in a variety of tricks ranging from simple card tricks to complex mentalism. In its most basic form, equivocation is the illusion of control given to the spectator. For example, an illusionist may deal two cards on a table giving the spectator the option to choose one. Assume that the illusionist wants the spectator to choose the card on the right. If the spectator chooses the card on the right, then the illusionist is successful and progresses with the trick. However, if the spectator chooses the card on the left, the illusionist can easily discard it and choose the card on the right, claiming that the card the spectator chose is the one he or she will eliminate. Since there is no previous specification of what the illusionist will do with the card chosen by the spectator, the illusionist will always ensure that the spectator "chooses" their desired outcome. With equivocation, the illusionist essentially tricks the spectator into thinking that they have a choice, but in reality, any decision made by the spectator will lead to the same pre-determined outcome. The TV series explores this illusion of control through the impact that technology has on the characters in the story. However, *Bandersnatch* takes this concept further and expands the illusion of control both to Stefan *and* to the viewer in the context of intersecting temporalities and multiple realities through self-reflexive and meta-referential revelations. *Bandersnatch* is equivocation in plain sight, Brooker and Netflix the illusionist and viewers the spectators fooled by the illusion of control.

When first choosing to play *Bandersnatch,* the film opens with a clearly dated analogue TV playing the intro theme for *Black Mirror,* which then presents us with a tutorial for the interface explaining exactly how interactivity will impact the character's decisions. Instead of just displaying the tutorial on our screen, the viewer is watching a TV from the diegesis play the intro for the film they are about to watch. This is not further distancing from the diegesis, rather it is a further level of interaction that Brooker asserts. The viewer is paralleled to another character in the diegesis specifically of the 1980's, in which *Bandersnatch* is set, likening him or her as in control of an avatar in a role-playing video game; we are not just controlling Stefan, but we are also controlling a parallel version of ourselves. The effect of this introduction is subtle at first, but as one progresses through the story and finally reaches its conclusion, the viewer will be pulled back to the same television screen playing the credits instead of a tutorial. It is a further reminder that we have been controlling a parallel version of ourselves, who has been controlling a fictional character on a diegetic television set.

This creates a degree of separation between the control of the viewer and the actual diegesis. Despite the levels of control the viewer has over their avatar and Stefan, this degree of separation truly prevents the viewer from being totally autonomous to Stefan's fate, as our parallel avatar acts as a barrier between the viewer and the diegesis. Despite this apparent control the viewer possess over the narrative, Netflix and Brooker are in fact the ones in control of the viewer and the interactive interface is simply a façade for the illusion of control and meta commentaries. Throughout the entire film, the viewer has been provided a high degree of agency over the diegesis made especially pronounced with Stefan's acknowledgment of the viewer's control over his free will. This illusion of control begins to reveal itself when coming to terms with three revelations which Nada Elnahla highlights in her essay, "*Black Mirror: Bandersnatch*

and how Netflix manipulates us, the new gods". Unlike the agency given to viewers with non-interactive film and television, *Bandersnatch* does not allow the viewer to rewind or fast-forward the film, forcing the viewer to follow Netflix's flowchart of possible choices. The interactive nature of the film subverts the viewer's idea that "the film-makers have the final say over how the film progresses, giving the viewer the illusion that he or she has control over the storyline by making decisions on Stefan's behalf, and watching the consequences of those decisions unfold" (Elnahla, 2019, 4). Looking at the flow chart, we can see that Dead Ends all have the same function in eliminating a decision which effectively removes any agency the viewer has as there is only one possible decision to make and in this regard, Dead Ends can be perceived as nothing more than an elaborate timed play/pause button. Most importantly, Netflix steers viewers to the "right" decision with all six Dead Ends that force the viewer to choose the opposite choice to progress the narrative and reveal the illusion of control to the viewers. This also pairs with the timed decision interface in which indecisive viewers will find themselves watching Netflix make the decisions for them.

There are also moments in the story where Stefan and the viewer will be defied by external forces in the film and make a certain outcome inevitable regardless of what is chosen by the viewer. Moment's like this can be considered hybridized Dead Ends considering that they force the viewer into an inevitable outcome further highlighting the illusion of control. Before the Colin LSD sequence, Stefan is given the choice to take LSD. The viewer is presented with either "Yes" or "No". If the viewer selects "No", the LSD sequence will happen regardless as it is revealed that Colin spikes Stefan's tea with the drug. Neither the viewer nor Stefan in this situation has any control over what will happen. There is only one path available; to take LSD regardless if viewers to accept or refuse.

The "History Repeats Itself" Ending also explores the inevitability of certain events. Considering that Stefan follows the same trajectory as Davies by losing his mind and killing his father, the diegesis further suggests that once a path has been chosen there can only be one outcome. This is further explored at the very end of the film when Pearl is given the choice to "Throw Tea Over Computer" or "Destroy Computer" just like Stefan before her, hinting that she will undergo the same fate. This further expands the theory that adapting Bandersnatch in itself is actually the cause of this inevitable downward spiral and no matter the series of events or decisions the user makes, it is simply out of our control. These insights reveal that the viewer "is being controlled and surveyed by Netflix, making Stefan's life a reflection of real life" (Elnahla, 2019, 4). Just like Stefan, we believe we are in control of the diegesis and just like Stefan, we slowly uncover the truth of the mechanics realizing that the interface is just disguised to present us with the illusion of control. In reality we are given a series of choices that will show us pre-determined sequences and our only choice is what we choose to see, and, in the end, it is Netflix that is truly in control of us.

1.5. Critical Reception

Bandersnatch has been generally well-received by both critics and audiences with many praising the connection of the interface and themes of the film, however a majority of the concerns address the in-effectiveness of interactive film. At the 71st Emmy awards on September 22nd, 2019, the film won the Emmy awards for Outstanding Creative Achievement in Interactive Media Within a Scripted Program and Outstanding Television Movie. Critical and public reviews for the film are generally favorable and currently, the film stands at 7.2/10 on *IMDb* with over 100,000 reviews ("Black Mirror: Bandersnatch", *IMDb*). The film also received a 72%

critical rating on *Rotten Tomatoes* with the critical consensus reading, "While *Bandersnatch* marks an innovative step forward for interactive content, its meta narrative can't quite sustain interest over multiple viewings – though it provides enough trademark *Black Mirror* tech horror to warrant at least one watch" ("Black Mirror: Bandersnatch", *Rotten Tomatoes*). Although these reviews are somewhat positive, opinions on the execution of the interface and its incorporation into the story are extremely divergent for both film and video game reviewers and provide the most controversial points of discussion for every publication. Significantly, there is no consensus to the definition of *Bandersnatch* as either a video game, a film, or an interactive film. What is clear between all reviewers is that there is an acknowledgment of the presence of video game elements.

The New York Times review for the film is a compilation of three critics – Aisha Harris, Margaret Lyons and Maureen Ryan - and the opinions on the version they received on their respective paths. All three of these reviews are considerably un-impressed by the film's balance between narrative and incorporation of meaningful choices. Both Harris and Ryan commented on the illusion of control that the viewer has when confronted with forced paths claiming that the incorporation of decisions in these sections is meaningless interruption of narrative flow. Harris specifically brings up the decision when Stefan is prompted to work for Tuckersoft, claiming that the inclusion of two decisions when only one is feasible was an irritating revelation "that if I didn't follow a specific bread crumb, the adventure would be over" (Harris et al., 2019, *The New York Times*). Ryan also questioned the inclusion of unaffecting decisions claiming that "few decisions within this mechanical creation felt momentous" eliminating any emotional connection to Stefan or motivation to care about the story (Ryan qtd. in Harris et al., 2019, *The New York Times*). Unlike Harris, Ryan was significantly more critical of the film's themes arguing that

Bandersnatch is so invested in the incorporation of the interface that it disregards any meaningful development for deeper revelations apart from "the relentless flogging of its least subtle theme: We have little or no control over our lives and our individual choices don't matter in the grand scheme of things" (Ryan qtd. in Harris et al., 2019, *The New York Times*). Lyons was significantly more forgiving and fascinated by the film but had many of the same critiques, especially about the emotional impact of unaffecting decisions. Decisions were not only unaffecting, but also did not provide a significant range of control, since if there were any autonomy for the viewer there would be more choices available allowing a range of reactions: "Sure, I told Stefan to "yell at Dad," but if I were really controlling him, I would also have told him what to yell…I didn't want just to declare the outcomes, I wanted to influence the motivations" (Lyons qtd. in, Harris et al., 2019, *The New York Times*). Clearly the consensus for each of these reviews is that the interactive decisions in fact displaying an illusion of control for the viewer leading to an overall underwhelming experience as a lackluster extension of *Black Mirror* universe. Brian Tallerico's review for *Roger Ebert* was also pessimistic about the execution of the concept and the actual impact and utility of the interface for the viewer. He writes that *Bandersnatch* is neither a game nor a film leading to underdeveloped themes and abrupt endings to maintain interactivity, making it "simply not as well-written or involving as the best episodes of "Black Mirror" (Tallerico, 2018, *Roger Ebert*)

On the other hand, many other publications praised the incorporation of interactivity claiming that it was the start of a compelling new medium. Lucy Mangan for *The Guardian* was particularly positive about the film giving it a 4/5-star review praising the technical execution and optimistic about a new genre "that will get better, and more sophisticated and doubtless acquire emotional heft" (Mangan, 2019, *The Guardian*). David Griffin for the gaming review

website *IGN* gave the film a much more positive review giving it an 8/10 claiming that "Bandersnatch takes the best aspects of video games and movies to create a compelling experience" (Griffin, 2018, *IGN*). Griffin specifically noted that the film was more similar to the Telltale (*The Walking Dead*) and Quantic Dreams (*Detroit Become Human*) video games which mix basic gameplay with a decision driven narrative, rather than an "interactive film". Although Griffin noted that it was not Brooker's best work for *Black Mirror,* he praised the incorporation of interactivity claiming that the viewer was in fact the dystopian technology emblematic of the series. Interestingly, Griffin was uncertain about the interface's incorporation into other Netflix series, hoping that "Netflix won't make every big franchise embrace this storytelling technique" (Griffin, 2018, *IGN*).

Austen Goslin for Polygon, another gaming review website, was less favorable to the interactive element of the film claiming that "*Bandersnatch* is caught somewhere between a video game and a movie without ever committing to one direction" (Goslin, 2018, *Polygon*). One of the main concerns among poorly developed characters and an un-interesting story was that the film sacrificed narrative coherence in favor of the decision interface, which acted more as a benign interruption rather than a catalyzing connective element. For Goslin, these decisions degraded from interesting narrative changes to clear breaks in the technical seams of the predetermined paths that form *Bandersnatch* making them practically meaningless: "the story is less like a tree full of branching paths and more like a cleverly disguised straight line with three or four distinctive forks that affect which of the endings you get" (Goslin, 2018, *Polygon*).

On many internet web forums like *IMDb* and *Reddit*, the general public expressed equally mixed reactions with many complaining about the film in general but also the lack of agency for the viewer and gimmicky nature of the interface. However, many also praised the technical

execution of the film claiming that it created an engaging experience and even heightened the emotional connection to both Stefan and the outcome of the narrative. What is especially clear about those who were engaged by the film was the high rate of post-literary engagement with the film. Since its release, many fans of the series and the film have proposed extensive theories about the deeper themes of the film, uncovering references to other *Black Mirror* episodes and unlocking hidden scenes. For example, in one hidden post-credit scene Stefan rides the same bus as in the opening sequence of the film but instead listens to a cassette titled "Bandersnatch by Stefan Butler" which plays a series of beeps and then divulges into static. Internet sleuths uncovered that importing the audio file into a ZX Spectrum Tape Output would produce a QR code with the "White Bear"/branching pathway symbol in the centre. Scanning this QR code would open a website for Tuckersoft showing off covers and summaries for the various games seen in the film, including "Bandersnatch" and "Nohzdyve" (Owen et. Al, 2019, *The Wrap*). Netflix's inclusion of these hidden secrets has fueled post-literary discussion even further allowing viewers to further interact with the title and progressing the theories of self-reflexivity and meta-reference to merge the worlds of the diegesis and viewer's reality together.

In regard to the effectiveness of the branching pathways, many users on website forums complained about the forced demise of Stefan and the lack of any positive outcomes to the film. On the Black Mirror Episode Discussion thread in the Black Mirror subreddit, user hodorito on the thread commented "Netflix really pushing me to *kill dad* a bit excessively" which received 4.8 thousand upvotes (hodorito, 2018, *Reddit*). Many others responded in agreement about the forced decision. Another comment on the same thread by DynastyNA with 966 upvotes reads "I JUST WANT TO FINISH THE GAME AND MAKE IT SUCCESSFUL but instead im [sic] ruining this kids life" (DynastyNA, 2018, *Reddit*). Under this comment thread many users

complained about the decisions and their negative consequences for Stefan without any option to achieve a happy ending. User jessexpress wrote in agreement writing, “I was trying to give him all the sensible options! Going to his therapist, talking about his mum, taking his meds! But it made me go back in time and stop being so boring” (jessexpress, 2018, *Reddit*). Users on *IMDb* were equally conflicted about the effectiveness of the film with others claiming the lack of control available to the viewer was an intentional message from the writers rather than a negative aspect. The two most helpfully rated responses on the User Reviews page on *IMDb* both give the film a 9/10 asserting that the lack of control given to the viewer is an enhancing artistic element to the film (“Black Mirror: Bandersnatch”, *IMDb*). However, the next two most helpfully rated responses are a 6/10 and a 3/10 respectively both arguing that the film became too repetitive and complaining about Netflix’s predetermined path that the viewer must follow. What is striking about public reception to the film on internet forums is the number of complaints about the viewer’s lack of agency, especially about not having any options to give Stefan a positive outcome. More interestingly is how perceptive viewers are with the forced branching pathways with many seeing through the seams that keep the film from breaking apart.

“Bandersnatch, Yea or Nay? Reception and User Experience of an Interactive Digital Narrative Video” by Christian Roth and Hartmut Koenitz, is a scientific study conducted on the user response to interactivity in the film. The study was conducted with the students at the University of the Arts Utrecht. The study evaluated 32 students who were watching *Bandersnatch* for the first time, with a variety of questions that evaluated the amount of time spent with the film (or if they had even completed it), the effectance of the film (meaning the desire for effective interaction with environment), autonomy, enjoyment and general confusion or coherence with the film among other variables. The results show a generally positive rating of

the system and its usability in addition to its effectance. Interestingly, the results showed an almost neutral rating on the actual autonomy of the user, especially when users were asked if they tried to find a way to avoid killing Peter. Many users claimed that they lost interest/agency when they realized that the film was effectively forcing them down that path. Many users claimed that the rewinding or looping scenes in the movie were major sources of disinterest. In general, "perceived meaningfulness, positive affect, and global effectance were significant predictors of enjoyment" with a majority of subjects responding positively to the film (Roth and Koenitz, 2019, 253). In their discussion, the two bring up the question of whether *Bandersnatch* should be considered a game or an interactive movie, and the implications that either one carry for the audiences: "framing an interactive experience as an iteration of an established non-interactive TV series is thus a questionable strategy" (Roth and Koenitz, 2019, 253). The study concludes with a rather pessimistic view on the future of interactive film, claiming that Netflix's current technology does not allow full user agency. Clearly for critics, casual viewers and even students studying media theory, *Bandersnatch* fails to completely disguise this illusion of control in forcing viewers to travel down specific narrative branches.

2. Interactive Film

2.1. Definition

Interactive film currently stands in a grey zone. Considering this medium is still developing, there are a variety of problems that combine to create a sparse scholarly landscape amidst contentions of its similarities to video games. Firstly, there is a lack of consistent terminology for the medium with definitions of "interactive film" ranging from the cultural interaction of media to decision-based video games. Secondly, no film apart from *Bandersnatch* has truly received widespread acclaim or public recognition contributing to this lack of consistent terminology or fervent analysis. Thirdly, the interface constantly evolves, and few titles use the same type of interface leading to a difficulty in determining how to analyze modern interactive films. Many characterize interactive film as a type of video game, however when analyzing *Bandersnatch,* simply using video game theory is inadequate to truly grasp the way interactivity is embedded into the narrative. Finally, interactive film blurs the line between traditional film and video games as it utilizes interactivity but does not grant the user full autonomy. In an age of media convergence especially between film and video games, interactive film is a further complication into the differences between each respective medium. To fully understand *Bandersnatch,* interactive film should be understood as its own medium with elements of video game theory rather than a hybrid of the two separate mediums. Although interactive film has a variety of differing characteristics and definitions, the foundation of the medium is user interaction through non-linear narratives with limitations to gameplay as theorized by Tanine Allison (Allison, 2018, 28).

2.2. Historical Overview

To further define interactive film as its own medium, it is important to retrace its historical evolution. The history of interactive film has two distinct stages, the first being the early development of the medium in the 1960's when directors experimented with providing audiences decisions that would impact the outcome of characters and the plot. The second stage occurred during the 1990's where the term "interactive film" became popularized with Full Motion Video (FMV) – a type of video game with pre-recorded filmed sequences mixed into segments of interactivity – and interactive films seen in theatres.

The very first recorded "interactive film" was *Mr. Sardonicus* (William Castle, 1961). The film follows Baron Sardonicus (Guy Rolfe), a man whose face freezes into a horrible grimace after searching for a winning lottery ticket in his deceased father's grave. Before the film's climax, viewers were presented the option to determine the fate of Sardonicus through a majority "punishment poll" determining whether Sardonicus would live or die in a "punishment" or "merciful" ending (Brottman, 1997, 5). The "punishment" had Sardonicus starve to death whereas the "merciful" ending saw Sardonicus cured and allowed to live. Viewers would vote on their chosen option using a provided glow-in-the dark card with an image of a thumb, which could either be oriented as a thumbs up or thumbs down. The majority vote determined which ending was played, however according to Castle's autobiography, he had only filmed the "punishment" ending making the punishment poll a marketing gimmick rather than a functioning interactive element of the film (Law qtd. in Hales, 2017, 38). Despite its lack of functioning interactivity, the concept of having viewers directly engage with the diegesis through a decision interface to determine the final outcome was a fundamental foundation for the basis of interactive film. Although the interface was never truly functional, it marks an important

understanding of the illusion of control in which viewers are presented with the impression of autonomy over the diegesis, but in reality, are simply abiding by the pre-determined rules of the director. This is a key concept to understand in analyzing the symbiosis of interface and themes prevalent in *Bandersnatch*.

Interactive film truly began in 1967 with the Czechoslovakian film, *Kinoautomat* (Radúz Činčera, 1967) also known as *One Man and His House)*. The film was first premiered at the 1967 International and Universal Exposition (Expo '67) held in Montreal, Canada; a Canadian rendition of the World Fair with a variety of amenities including a number of film screenings. The film follows Pan Novak (Miroslav Horníček) as he recounts a variety of moral dilemmas before his apartment burns down. At five decision junctions, a moderator would appear on stage and present two different options for the presented moral dilemma; the first decision had viewers decide whether Novak should either let in or turn away a half-naked woman who has confronted him at the door of his apartment claiming that she has been locked out of hers (Stanton, 1997, Westland). The 124 viewers in attendance would choose between options using red and green buttons built into the seats, and unlike *Mr. Sardonicus,* different outcomes were actually recorded and displayed on-screen based on the majority vote (Činčerová, 2010, Kinoautomat). The film displayed both possibilities on screen through two synchronized projectors, with the chosen decision playing while the other was paused. Viewers could press these buttons four additional times throughout the film, however these were not narrative changing decisions and only used to express opinion. In addition to presenting the possible decisions for Novak, the moderators also had their own script and directly engaged with the characters on screen in a final sequence dialogue between the stage and film actors (Hales, 2005, 56). Initially the film was planned to have 32 endings, however considering the great technical complications and risk of

de-synchronization of changing reels for two synchronized projectors, all decisions led to the same eventual outcome. Decision junctions had to "recombine to form exactly the same situation: from which a further two choices [were] offered to the audience" creating a more limited version of non-linear storytelling (Hales, 2005, 57). Although audiences were impressed, critical reception regarding the interface was mixed. Judith Shatnoff wrote about Expo 67 and *Kinoautomat* in the Autumn 1967 issue of *Film Quarterly*, claiming that the film's use of interactivity for "32 possible plot complications" was not engaging as an art mixture (Shatnoff, 1967, 12). D'Arcy Hayman praised the film's use of interactivity in the 1968 edition of "Leonardo", writing "the *Kinoautomat*…extends its dimension to vast audience participation in the actual creation and direction of the story or plot of the programme" (Hayman, 1968, 442). The film has since faded into obscurity.

The interface was a notable evolution from *Mr. Sardonicus* as viewers no longer control the outcome of the story but control a specific character; Mr. Novak. Having viewers control an actual character was a key development in understanding the gradual evolution of interactive content. Although this does grant the viewer more interactivity than *Mr. Sardonicus*, there is still a play with the illusion of control, as "presented with just the 5 effective binary choices the audience must have left the cinema having calculated that they saw one out of a possible 32 endings, the film itself having been constructed out of (up to) 63 filmic units," when in reality the film was only made of 12 segments (Hales, 2005, 56-57). Interactivity is more akin to choosing between scenes rather than outcomes, considering that every decision would converge on the same outcome. Despite the apparent autonomy given to the viewer there is still a barrier between the guise and stakes of viewer interactivity to the characters in the diegesis and technical limitations. Without any advancement in the technology, the concept was

overshadowed by the LaserDisc in 1978 which allowed interactive film to bypass the technical limitations of reel projection (Hales, 2017, 38).

LaserDisc allowed for greater storage and higher-quality video and audio and although the LaserDisc never experienced widespread use in North America, it allowed for the development of Full Motion Video (FMV). In the 1980's video games were limited in their gameplay, graphical fidelity and storytelling. Popular games like *Pac-Man* (Namco, 1980), *Mario Bros.* (Nintendo, 1983) and *Tetris* (The Tetris Company, 1984) were all graphically basic consisting of basic pixel blocks and limited to a single gameplay objective without any true narrative development. FMV was a solution to these technical limitations to provide greater graphical fidelity and combine basic gameplay with a basic narrative through pre-recorded live action cutscenes (Miltra, 2010, 15). FMV first emerged as arcade games in 1983 and specifically used laserdisc which allowed creators to "control exactly which segments are seen and in what order, design their own uses of the videodisc segments, and have access to additional related images and materials on the computer" (Cates, 1993, 324). The very first FMV was *Astron Belt* (Sega, 1983) which allowed players to control a spacecraft using a joystick and buttons to shoot down other enemy fighters while avoiding obstacles in a series of wave-based levels. The game used computer graphics overlaid with 25 minutes of video footage borrowed from a variety of Paramount Pictures films (Horowitz, 2018, 72).

Although the laserdisc finally allowed for players to experience a variation on interactive film progressing interactivity from simply making a decision between two set options for actually controlling a character, FMV fell into obscurity due to technical issues and high costs of play. This gave rise to other superior mediums like the DVD, CD-ROM, the internet and digital playback services like QuickTime. These technologies combined with faster hard drives and

larger storage mediums brought digital video directly to viewers with cheaper home consoles instead of having to visit an arcade or a cinema. Interactive filmmakers were no longer burdened by the technical limitations of the LaserDisc and "one could film with a domestic camcorder, digitize the sequences, manipulate and edit them with commercially available video editing software, and add interactivity/nonlinearity using multimedia authoring software" which allowed for further experimentation and number of titles produced (Hales, 2017, 43). During the late 80's to mid 90's FMV and interactive films began to enter into the mainstream. Games like the 1993 FMV mystery game, *7th Guest* (Trilobyte, 1993) further evolved the medium, incorporating progressively complex narratives into gameplay. In *7th Guest,* gameplay consists of players traversing a 3D animated mansion solving a variety of different logic puzzles of increasing difficulty. At the end of each puzzle, players were shown a live action video clip further progressing the narrative.

FMV games like this followed the same general formula of combining segments of basic gameplay with live action recorded sequences meant to progress the narrative. Although the two were combined into the same medium, they were noticeably separated from each other in application. In addition to FMV games, interactive films began to see a rise in popularity. *Mr. Payback* (Bob Gale and Charles Croughwell, 1995) was shown at 44 specially equipped U.S. theatres with built-in joysticks with three buttons – yellow, red and green - attached to the armrest. Much like *Kinoautomat,* the audience would be presented with a series of decisions throughout the film and players would vote by pressing the respective button. The film was panned by critics and despite the level of interactivity, many criticized the poor acting and direction. Burr wrote in his *Entertainment Weekly* review, "no one…is going to interactive movies if they remain as horribly written, dreadfully acted, and cretinously plotted as *Mr.*

Payback (Burr, 1995, *Entertainment Weekly*). The interface was also criticized for its inclusion of increasingly derogatory choices. The audience could vote on the suitable payback for each villain, with options ranging from paddling or whipping, to humiliation having the villain dress up in "S&M doggy bondage gear and led around on a leash" (Burr, 1995, *Entertainment Weekly*). Additionally, Burr highlights that "multiple votes count, as does trying to sway your fellow voters by yelling at the top of your lungs" creating an unpleasant viewing experience (Burr, 1995, *Entertainment Weekly*). Roger Ebert wrote in his 1995 review of the film, "I never believe I was in control. If I had been in control, I would have ended the projection…while an interactive movie might in theory be an entertaining experience, 'Mr. Payback' was so offensive and yokel-brained" (Ebert, 1995, *Roger Ebert*). Other interactive film were released, like *Tender Loving Care* (David Wheeler, 1998) – which divided story episodes between a navigated 3D animated house in which players are asked a series of questions in response to specific visual stimulus leading to alternate scenes and endings dependent on their decision – however by the early 2000's interactive film was not considered a quality form of storytelling. As Bernanrd Perron says, "interactive movies came to have a very bad reputation due to the limited possibilities of their branching structures, their lack of interactivity the bad acting of their cast, and, in the case of the earlier interactive movies, their low resolution pictures and the dismal quality of their playback" (Perron qtd. in Marsh, 2014*, The Dissolve*). Interactive films were stuck in a grey area between video games and films without any defining characteristic to make them an appealing medium. The history of interactive film illuminates the uncertainty of the form as its own medium. FMV's were considered primarily interactive video game films, and interactive films like *Mr. Payback* were not directly considered their own medium but films that

adopted a form of interactivity to draw in audiences similar to cinematic gimmicks like 4-D and Smell-O-Vision.

Amidst the massive widespread popularity of video games on both consoles and PC's in the mid 2000's, *Heavy Rain* (Quantic Dream, 2010) marked a change in formula to the video game medium and further adopted cinematic storytelling devices in conjunction with decision-based gameplay. The game features four protagonists as they try to uncover the mystery of the Origami killer. In contrast to video games with a heavy emphasis on gameplay and a disregard to narrative story, *Heavy Rain* instead used gameplay to serve the narrative giving players the power to change the course of the story and fate of the characters. Players control characters in the third person with gameplay being primarily focused on basic movement within an environment, interaction with objects, QuickTime events and decisions. The intricate branching paths of the plot led to significant permutations in the story with each playable character having at least three possible distinct endings, each with the possibility of permanent death. In addition to this revolution in gameplay and non-linear storytelling, the game used motion capture for photorealistic characters (Wilkinson, 2016, *Vice*). In a *Destructoid* interview with the co-CEO David Cage of Quantic Dream, Cage reflects that *Heavy Rain* is not an interactive film, yet breaks with the traditions of video game design conventions claiming that "*Heavy Rain* is not a videogame anymore in my mind because it breaks with most of the traditional paradigms, but it's fully interactive" suggesting that a new definition needs to be developed for this type of game (Cage qtd. in Chester, 2009, *Destructoid*). Since *Heavy Rain,* Quantic Dream has continued their innovations in decision-based impact video games with *Beyond: Two Souls* (Quantic Dream, 2013) and *Detroit: Become Human* (2018). Other companies, like Telltale Games and Supermassive Games' *Until Dawn* (Supermassive Games, 2015) have adopted the same narrative

strategies using gameplay as a means to progress the narrative. Despite the interface, all these types of video games put an emphasis on players controlling a third-person character with the emphasis on making decisions to creating a non-linear narrative with branching pathways and alternative outcomes.

2.3 Theories

Using a theoretical analysis, *Bandersnatch* blurs the line between interactive film and video game. When analyzing interactive film today, there is a clear difference between *Bandersnatch, Heavy Rain* and other FMV titles*,* making a comparison to the level of interactivity in either title inappropriate for in-depth analysis. To accurately analyze *Bandersnatch* in a theoretical lens, interactive film ideally is best understood as its own medium rather than a media convergence of traditional film and video games. Due to the sparse and dated literary and scholarly landscape, theories on interactive film medium specificity are unclear, yet present opportunities to understand interactive film through an analysis of certain aspects of video games. Considering its level of interactivity, solely using theories of inherent interactivity in film today and video game theory is inadequate and rather demands a new definition of exactly what differentiates interactive film from video games.

Alexander R. Galloway differentiates video games from films claiming that the differentiating factor is action, "without the active participation of players and machines, video games exist only as static computer code. Video games come into being when the machine is powered up and the software is executed; they exist when enacted" (Galloway, 2010, 2). Galloway cites the controller as an enabler of action, rather than the camera which passively observes, allowing the player to directly communicate with the software and hardware of the

machine. Others theorize that it is not actions that differentiate film from video game, rather it is the act of making decisions and player choice that distinguishes a video game from a film. Marie Laure Ryan writes in *Narrative Across Media: The Languages of Storytelling* that "in a game everything revolves around the player's ability to make choices" (Ryan, 2004, 366). In this perspective, however, the interface of modern streaming services may be considered a video game as players directly use an input device to communicate with the software allowing a level of action and hence a greater level of interaction. Contemporary methods of consuming media inherently demand a level of action and decision from the player when choosing a title.

This inherent level of interactivity present in media today provides further complications to defining the characteristics of film. Anne Friedberg writes in "The End of Cinema: Multimedia and Technological Change" that technological innovations have changed cinema by giving further levels of control to the viewer. This has consequently blended the passive nature of the film medium where the once passive spectator transforms into an active "montagiste" with the power of the interface (Friedberg, 2009, 803-804). Integration with different mediums has no longer created a clear way to exhibit film; instead the identity of cinema is a fluid organism constantly changing and evolving. As with media convergence, film adopts new technologies inhabiting computer screens, television screens, smartphone screens. This has moved the viewing of the film outside the set time of a communal theatre and allowed for on-demand portability. Spectators are no longer passive observers, but active players complete with interfaces of remotes, controllers, headsets and keyboards. Friedberg speaks about the impact of this new inherent level of interactivity, claiming that the identity of cinema has been changed by these new technologies and our preconceived notion of cinema "is being displaced by systems of circulation and transmission which abolish the projection screen and begin to link the video

screens of the computer and television with the dialogic interactivity of the telephone" (Friedberg, 2009, 804).

The entire identity of cinema as a passive medium has been changed into an interactive engagement achieved through the exportation of film onto different devices. One of the major technological innovations responsible for this displacement of identity and integration of interactivity is the video cassette recorder (VCR). Friedberg claims that it functioned as a bridge to the digital revolution and provided viewers with the ability to "time shift" granting the viewer the power to record live broadcasts, allow repeat viewings of film, and most importantly granting the viewer the power to "zip" through content (Friedberg, 2009, 805). Combined with the influence of VCR, Friedberg also highlights the impact of the remote control in making the viewer a montagiste and therefore actively editing with the use of fast-forwarding, muting, or pausing (Friedberg, 2009, 810). The interface of streaming platforms today offers an extension of the level of interactivity accomplished with the VCR and the remote control but – depending on the device – allowing players to directly use their body as a controller. Using fingers on touchscreen devices, voice control on compatible devices like the Amazon Alexa or Apple TV, in addition to using motion activated trackers like the Xbox Kinect or even virtual reality headsets like the Oculus Rift, the interface now *physically* connects the user to the respective medium bypassing the middleman of remote controls.

If decision and action are no longer applicable in differentiating modern film from video games, then analyzing the goal in video games provides greater clarity. Video games diverge from film in their incorporation of a set goal. Players must work towards something under a set of rules that govern the potential. The book *Storyplaying: Agency and Narrative in Video Games* by Sebastian Domsch discusses video games narratives and the interaction the player has on the

multiple possibilities in the gameplay construction. Video games adopt these nodes around a system of rules considering whether the player has a choice and thus the consequences of actualizing these options. Elaborating upon Marie Laure Ryan's discussion of the nodal system prevalent in digital interactive narratives, Domsch defines choice as a selection between two different options and most importantly, choice is dependent on the player possessing some form of motivation and interest in the outcome and therefore expecting one outcome to be better than the other. This is further developed by the hierarchy of objectives in video games, considering that players have to balance and choose between main and side objectives. It is still important to note that what connects these different objectives is still the desire for the viewer to find the "right" path with the desired outcome. Unlike film, video games all have a certain objective combined with a level of interactivity which govern the ability of the player under a set of rules.

Bandersnatch abides by this foundation as viewers are given a clear objective under a set of rules. Although not explicitly stated in the tutorial, getting a five-star review from Robin is a clear objective for viewers. When viewers encounter a Dead-End, they will be greeted with a poor review of the video game and returned back to their previous decision. This has the same function as a game-over screen in video games as players have no other option but to either quit the game and conclude the narrative without a clear resolution, or to return back to a set checkpoint and try again. In *Bandersnatch,* viewers can easily decide to quit and end the narrative without any resolution, however these Dead Ends encourage a different approach. Like any video game, *Bandersnatch* also has a set of rules that govern the ability of the player within the diegesis. The most obvious is the interface; viewers must make a decision before the time limit expires. This is the core gameplay mechanic which abides by the strict rule that whatever

the viewer picks will be the outcome and if the viewer does not pick a decision within the time limit, a pre-determined decision will be picked instead.

However, *Bandersnatch* embeds more rules governing the function of decisions with the themes of intersecting temporalities. Colin's whole monologue during the LSD sequence acts as an extended tutorial into the rules of the universe and the impact that viewer decisions will have on the diegesis. Since decisions do not have clearly labelled outcomes, viewers must use their knowledge of previous stimuli to inform the most likely outcome of a decision. This is first explored in the opening Breakfast scene of the film. Much later, after Stefan kills Peter, viewers will have the choice to either "Chop Up" or "Bury" the body. During the timer, the camera will shift between showing the body, Stefan and the garden. Sharp-eyed viewers will remember in the beginning of the film that the neighbor's dog digs up their garden; exactly the one that was showed in both the beginning of the film but also during the timer of the decision. This informs viewers that burying Peter in the garden may lead to the discovery of his body if the dog decides to dig up the garden. Sure enough, if viewers choose to "Bury" the body Stefan will inevitably be arrested leading to the "Jail" ending. Returning to Colin's monologue, he explicitly states that mirrors can be used as a form of time travel. Stefan will later be able to crawl through his mirror and return back to his past 5-year-old self effectively providing viewers with another specific rule. Paired with the knowledge that decisions from interesting realities will have an impact throughout the universe and that time travel is possible, viewers can use this information to unlock the "Death" ending where Stefan will return to his 5-year-old self and be killed with his mother on the derailing train. *Bandersnatch* clearly adopts a level of objective within its gameplay by having viewers choose a decision that will provide the best outcome for Stefan.

This concept is also explored in “Interactivity in Fiction Series as Part of Its Transmedia Universe: The Case of Black Mirror: Bandersnatch” by Begoña Ivars-Nicolas and Francisco Julian Martinez-Cano. The two analyze the film in relation to its transmediality; elements of fiction that get dispersed across multiple delivery channels for the purpose of creating a unified and coordinated entertainment experience, with each medium making their own unique contributions to the unfolding of the story” (Jenkins qtd in Begoña and Martinez-Cano, 2019, 3). The journal acknowledges that the 21st viewer has evolved to demand to personalized and participatory content through a variety of devices, which stimulates interactivity. The challenge for media innovators is a way to tell stories that break narrative linearity and stimulate interactivity through selection of how and what is told in the story. *Bandersnatch* extends this transmedia universe by relying on its interactive user-face and the apparent collaboration with its viewer who ultimately decide how the story is told in a semi-autonomous experience. For the viewers that want to further develop control over the result, the domain of information becomes the uncovering of all the endings and/or scenes, which integrates the video game medium even more into the film.

These theories of choice would primarily distinguish *Bandersnatch* as a videogame, as the whole experience revolves around viewers trying to accomplish an objective. However, there is a clear differentiation between the range of interactivity viewers have with video games in comparison to that in *Bandersnatch.* Considering that *Bandersnatch* has only one gameplay mechanic, categorizing it as a video game seems inappropriate in 2020 with games possessing a wide array of gameplay mechanics. Certain video games that have been characterized as interactive films provide more clarity in differentiating interactive film from video game. Narrative driven games like *Heavy Rain* that use gameplay to serve the development of the

narrative have consistently fluctuated between categorization of interactive film and video game. *Until Dawn* (Supermassive Games, 2015) and all of the Telltale Games are often touted as interactive films; however. in comparison to *Bandersnatch,* they employ a wider array of gameplay mechanics. As established, interactive films consist of lengthy cutscenes which are broken up with sequences of gameplay. Much like *Bandersnatch,* players navigate the narrative in both *Until Dawn* and the Telltale Games by making decisions at specific decision junctions. For both, the player will decide between four possible options mapped to buttons respective to the console. However, unlike *Bandersnatch,* these two games employ other types of gameplay mechanics in addition to the decision junctions. In the PS4 version of *Until Dawn,* players are able to move the character around specific environments with the left analogue stick and control the camera and interact with objects with the right analogue stick, in addition to other forms of gameplay mechanic inputs. Telltale games also allow players to control characters in certain environments with the left analogue stick, in addition to pressing specific mapped buttons to perform an action during quick-time-events.

As Tanine Allison highlights in her article "Losing Control: *Until Dawn* as Interactive Movie, "video games like *Until Dawn* have been labelled 'interactive movies' because their limited gameplay enacts a loss of control for the player" (Allison, 2018, 28). This definition is the most appropriate in terms of thinking about *Bandersnatch* as it provides a level of interactivity that traditional film does not, but also strips down gameplay to serve the narrative, effectively limiting the range of how players interact with the diegetic world. In *Bandersnatch,* viewers are only provided one level of interaction with the title through the decision options and are not allowed to control the camera, the character, nor engage in any other level of interactivity. In comparison to video games touted as interactive film, *Bandersnatch* and modern

interactive film are divergent from video games due to the inclusion of only one type of gameplay mechanic. Considering the likely evolution of interactive film during the coming years, a consistent lexicon of what make it unique as its own medium should be determined. If this is not accomplished, the risk of media convolution arises. Amidst the saturation of interactive content in the 21st century, almost anything can be considered interactive film if it has a cinematic aspect and a level of interaction provided to the viewer; one could even consider YouTube and even Tik Tok a form of interactive film. Each of these social media platforms involves the viewer/user to directly interact with the content by leaving comments, liking or disliking and sharing to other platforms. There is a clear difference between *Bandersnatch* and the interactive films on Netflix in comparison to these examples. In order to progress the medium's potential for storytelling, commercialization and even regulation, there should be a universal understanding and ontology that define and distinguish interactive film from other forms of media.

3. Business Potential

3.1. Current Landscape

As with any new medium, new methods of commercialization become available to creators and companies. Reflecting on the previous two chapters, it is clear that *Bandersnatch* has garnered a significant amount of attention from critics and the public. Understanding interactive film as its own medium allows for creators and companies to unlock the full commercial potentials of interactive film and allow the further production of more interactive content. The success of *Bandersnatch* presents new business opportunities with the utility of viewer analytics and marketing with targeted product placement. Netflix has already released six other interactive titles in addition to *Bandersnatch,* including *Puss in Book: Trapped in an Epic Tale* (2017) Bear Grylls' *You vs. Wild* (2019) and *Captain Underpants Epic Choice-O-Rama* (2020). These series and films have been notably less well-received and lack the diegetic complexity of *Bandersnatch* considering that they are primarily marketed to a niche audience of children. Although it is almost impossible to determine Netflix's business plans regarding interactive film and television, the company has promised to release a variety of new interactive content over the next few years– including an interactive episode of *Unbreakable Kimmy Schmidt* (2015-2019) slated for a 2020 release – with vice president of content, Todd Yellin in March 2019 saying, "We're doubling down on that [interactive storytelling]. So, expect over the next year or two to see more interactive storytelling" (Yellin qtd. in Shieber, 2019, *TechCrunch*). Considering the relatively new resurgence of interactive content there has not been a significant amount of talk of production or release by other media companies. The only other notable interactive content released by another company, has been by the dating app Tinder, with their October premier of *Swipe Night* (Karena Evans, 2019). Although *HBO* released *Mosaic* (Steven

Soderbergh, 2017) as an interactive television series played with a smartphone app, the app is no longer available, and the series is only accessible as a non-interactive linear series on *HBO*'s streaming service. This lack of interactive film production may be due to the high costs and difficulty of production or even perceived lack of interest from viewers. In the age of subscription-based media models, the high cost of producing interactive content may not present compelling reasons for companies to explore these options. Interactive film is still in the process of primordial experimentation and without proven outlets of additional income, interactive film and television is on the cusp of a revolutionary form of storytelling and business potential or another niche product destined to fizzle out.

The immense success of Disney +, the recent release of Apple TV + and Amazon Prime's further investment in their production of original content, have all been factors in Netflix's recent value decline. Netflix has counter-acted the loss of massive intellectual properties like "The Office", Star Wars and Marvel cinematic properties with the purchase of Sony's "Seinfeld." however in such an expensive and saturated market the purchase of previously produced content is not enough to draw in new and keep existing customers. Since 2012, Netflix has seen a stagnation in their profits, with revenue growth being 50% slower than expenditure growth, even despite a $2 increase in subscription cost for the most popular plans (Mcbride, 2019, *New Constructs*). The secret to success for Netflix is their dedication to a diverse array of original productions which have received critical acclaim and Academy Awards along with blockbuster success. Netflix received 24 Oscar Nominations at the 2020 Academy Awards; more than any other major media company or Hollywood studio (Whitten, 2020, *CNBC*).

According to Parrot Analytics, Netflix's original series "The Witcher" topped Disney's new Star Wars series, "The Mandalorian" (which had previously dethroned Netflix's "Stranger

Things") as the top show in the world from December 22nd to 28th (*Parrot Analytics*, 30 Dec. 2019). The release of the "Stranger Things 4" trailer on February 14th 2020, caused a spike in viewer demand for *Stranger Things,* beating out Disney's "The Mandalorian", "Star Wars: The Clone Wars" and DC Universe's "Harley Quinn" for the week of February 16th – 22nd 2020 (*Parrot Analytics*, 24 Feb 2019). According to a 2019 poll from *The Wall Street Journal*, 30% of 2,018 respondents claimed that they were likely to cancel their Netflix subscription and move to another streaming service, with 35% of those claiming that their desired titles were available elsewhere (Sharma and Flint, 2019, *The Wall Street Journal*). It is interesting to note that 53% of all respondents claimed that original titles made them more likely to subscribe to a service keeping Netflix in the battle with their domination of popular and critically acclaimed titles. For the time being, interactive content is one of the few differentiating factors that Netflix has over other media streaming companies. Netflix's commitment to developing more interactive content may provide the key draw for consumers to stick with and/or join the streaming giant.

Tinder *Swipe Night* is the most comparable product to *Bandersnatch* and marks direct monetization of the medium. Tinder is a dating app available on all smartphone platforms using anonymous swiping to like or dislike other nearby profiles based on photos, bio and common interests. Once matched, users can then communicate through Tinder's messaging service. Tinder is free to use for its base access, but limits users to a limited number of swipes and locks off matchmaking booster features. In 2015, Tinder introduced their paid subscription service, Tinder Plus, for $19.99 per month giving users access to unlimited swipes and other premium features (Hern, 2015, *The Guardian*). With over 50 million users worldwide, the app brought in $1.2 billion dollars exclusively through in-app purchases in 2019 alone marking a 43% increase from 2018 making it one of the most popular dating services on the planet (*Match*, 2020, Match

Group Reports Fourth Quarter and Full Year 2019 Results). On October 6th, 2019, Tinder released their debut interactive series "Tinder *Swipe Night*", a first-person apocalyptic adventure with user determined decision junctions affecting the outcome of the story. North American users tuned in for four 5-minute long episodes each releasing every Sunday at 6pm local time where users would then be invited to swipe on profiles. Similar to the binary decision tree in *Bandersnatch*, users would swipe between two possible options leading to branching outcomes and eight possible different endings. Each decision chosen by the viewer would be added onto their respective profile providing for additional talking points with the intention of having users be more informed about interests of potential matches.

Neither the cinematic merit of the show or the impact of user decisions in regard to immersion are relevant to discussion here as the show has much more significant business implications. According to Tinder in their 2019 Q3 earnings report, the show was a success leading to a "20% to 25% increase in 'likes' and a 30% increase in matches" with elevated conversation levels days after each episode had aired (Perez, 6 Nov. 2019, *TechCrunch*). Now Tinder plans to launch *Swipe Night* globally in early 2020. As companies continue to produce original content, *Swipe Night* marks an incredibly significant moment both for the company, but more importantly for the potential of decision based interactive content as its success proves its business potential. Now that a non-media company has adopted interactive film into their business plan, the potential for continued adoption by other companies and increased monetization are not too far-fetched. To accurately determine what will be commercially possible for interactive film, two metrics that are already commonly used will be applied to interactive film; user analytics and product placement. With their incorporation into interactive

film, I show that these metrics do not need to be entirely re-worked specific to the medium, rather just re-contextualized for data granularity.

3.2. User Analytics

It is no surprise that Netflix values user data, however the question of what the company currently does with that data and the possible business potentials of these user analytics are crucial to analyze. One of Netflix's key developments for the service was their recommendation algorithm which created a personalized home page for viewers highlighting titles that were likely to match with viewer preferences based on a variety of tracked factors. Netflix's Help Center provides a useful summary for how the recommendation system works (Netflix Help Center). The algorithm takes into account viewer interaction with Netflix (viewing history and rating of titles), other user preferences and basic information about titles including genre, actors, release year, etc. It also tracks the time of day users watch content, the devices Netflix is watched on and length of time watching but notably does not take into account demographic information, like age or gender. Netflix is able to determine the engagement rate of users with titles through a series of variables including completion rate and user rating.

At the 2012 Hadoop Summit, ex-Netflix Senior Data Scientist Mohammad Sabah described a variety of data analytics the company collects including: user interaction with a title (every time you rewind, pause etc.), ratings, searches, geo-location data, device information, date and time, metadata from third party companies like Nielsen, social media data and content characteristics to determine what viewers like (Harris, 2012, *Giagaom*). All of this data is used to encourage continued viewing and engagement with the service and considering that approximately 75% of viewer activity is driven by recommendation, the algorithms and use of

data analytics is successful and constantly evolving (Vanderbilt, 2018, *Wired*). When presenting rows of titles into separate categories, Netflix takes into account three layers of personalization; the choice of row (for example, Continue Watching, Trending Now, Comedies etc.), which titles will appear in the row and the ranking of those specific titles. Based on the algorithmic, the most strongly recommended rows go to the top starting from left to right. Before 2016, recommendations were initially limited to geographical location; users would be recommended titles based on what was popular in their respective region of the globe. This regional recommendation system was used as a bypass solution for region locked content, as what may be available in North America may not be available in Europe. On the 6th of January 2016, the algorithm was adapted to provide individual recommendations on a global scale, and combined with the large influx of original content, it provided a major draw for investors proving that Netflix was a global media distributor (Ben Popper, 2016, *Verge*).

In the 2015 article, "The Netflix Recommender System: Algorithms, Business Value, and Innovation", Carlos A. Gomez-Uribe, the previous Vice President of Product Innovation for Personalization Algorithms and Neil Hunt, the previous Chief Product Officer, explain the companies' perceived business value for the recommendation algorithm. The algorithm allows for Netflix to win user *"moments-of truth*…when a member starts a session and we help that member find something engaging within a few seconds, preventing abandonment of our service for an alternative entertainment option" (Uribe and Hunt, 2015, 6). This is an extension of Raymond Williams's concept of television programming flow, in which channels and networks retain audience attention with a careful balance between content and commercial interruptions. This construction results in a continued decrease in the duration of the film segments with progressively more commercial breaks in between; for example "we are normally given some

twenty or twenty-five minutes of film, to get us interested in it; then four minutes of commercials, then about fifteen more minutes of the film; some commercials again; and so on to steadily decreased lengths of the film, with commercials between them, or them between the commercials, since by this time it is assumed that we are interested and will watch the film to the end" (Williams, 2013, 195). This type of flow is used as a competitive advantage in keeping viewers on the same channel.

Netflix has adopted this practice to encourage binge watching through a type of insulated flow which excludes any exterior type of interruption connecting viewers with a flow of pure text (Jenner, 2019, 126). Rather than selecting a new title after the end of an episode, Netflix will play the following episode after a short timer while also providing viewers with the option to skip the intro. This creates an insular flow of purely the show and "nudges viewers toward binge-watching" (Jenner, 2019, 126). On top of finding audiences for more niche titles, individualization recommendation also provides a 4x increase in the range of viewer watched titles in comparison to a non-personalized system and a significant boost to user take-rate in engaging with titles saving Netflix an estimated $1 billion per year. This type of personalization acts as an entrance flow for viewers, "as it guarantees viewers 'stay tuned' after finishing a series rather than just signing up for one month…and cancelling their subscription immediately afterwards" (Jenner, 2019, 127).

On top of the use of data analytics in conjunction with Netflix's recommendation algorithm, user analytics are used to determine which licensed shows should be purchased from studios. In terms of the larger implications, this allows for Netflix to gain a greater understanding of what viewers want to see and helps Netflix to appropriately tailor their production of original content to ensure that an audience will always be found. These analytics have driven the

purchase of licensed content and determined the purchase for the immensely successful television series, *House of Cards* (2013-2018). Netflix executives revealed that the decision to purchase the $100 million dollar show was determined with analysis of user data: "Netflix's data indicated that the same subscribers who loved the original BBC production also gobbled down movies starring Kevin Spacey or directed by David Fincher…a remake of the BBC drama with Spacey and Fincher attached was a no-brainer" (Leonard, 2013, *Salon*). 3 months after the release of *House of Cards* in 2013, Netflix added 2 million U.S. subscribers and 1 million international subscribers earning an estimated $72 million – almost paying back the investment in the series in a quarter of a year (Greenfield, 2013, *The Atlantic*). Both the high volume of subscribers and the recommendation algorithm ensure that the series will always have an audience. As former VP of Netflix Product Engineering John Ciancutti writes, "Netflix seeks the most efficient content - Efficient here meaning content that will achieve the maximum happiness per dollar spent" (Ciancutti, 2012, *Quora*). Jenny McCabe, the former Netflix Director of Global Media Relations says, "We look for those titles that deliver the biggest viewership relative to the licensing cost. This also means that we'll forgo or choose not to renew some titles that aren't watched enough relative to their cost. We always use our in-depth knowledge about what our members love to watch to decide what's available on Netflix…If you keep watching, we'll keep adding more of what you love" (McCabe, 2013, 0:51 – 1:20).

The company also saves significant costs on marketing as titles can be promoted on their own website. *Bright* (David Ayer, 2017), one of Netflix's first major original blockbuster production with a budget of $90 million, was primarily marketed through Netflix itself and was found to be significantly more effective than traditional marketing methods and further allows for long-term marketing (Etherington, 2017, *TechCrunch*). The fantasy-action film casts Will

Smith as Daryl Ward, a human detective who must work with Joel Edgerton's character, Nick Jakoby, an orc, to find a powerful wand before evil forces recover it. *Bright* was initially teased on the Netflix homepage with clips and trailers promoted to targeted existing users for experimentation, however a few weeks before release *Bright* was mass marketed to users with a history of action and fantasy viewings. Thanks to the algorithm system, the film used individualized marketing for maximum engagement. The system algorithmically determined what clips, trailers and artworks were best suited for users: "someone who watches a lot of fantasy shows might get a *Bright* thumbnail that features Lucy Fry's elf character…while fans of director David Ayer may see one emphasizing Smith and Edgerton's characters in their LAPD uniforms" (Bishop, 2017, *The Verge*). Eerily, mass conglomeration of user data without significant transparency over how it is being used, represents a similar illusion of control as present in *Bandersnatch.* The ethical ramifications of Netflix essentially being in control of what we see and what we watch remain to be investigated. The function of the recommendation algorithm and the personalization of film titles, as evidenced by *Bright,* further develop the theory that Netflix is fundamentally in control of what is available to the viewer, and not vice versa; we may think we have a choice in choosing what we want to watch, but in reality Netflix determines that for us.

Another main benefit of marketing with Netflix and their recommendation algorithm is that it provides long-term promotion long after the release of a title capitalizing on an era with heightened media discussion. The challenge to marketing on Netflix is to ensure that amidst an ever-growing catalogue, users are aware that a title exists. Along with existing and new subscribers, the algorithm can effectively determine which audiences a title will have most engagement by tracking which types of users will watch the film after its premier. As more data

is compiled Netflix can more precisely determine which users to market to and create an infinite cycle of promotion targeting entirely new audiences (Bishop, 2017, *The Verge*). This enables Netflix to better determine what kind of original content is most successful and ensure that viewers are always aware of what content is available to them. Despite poor critical reviews, at the time of release Netflix claimed that the film had become the most viewed original film it had ever produced for its first week (Fleming Jr., 2018, *Deadline*). Although the true impact of this marketing technique on the film's success is impossible to determine, it provides compelling evidence for the power of the recommendation algorithm in other avenues. After the release of *Bandersnatch,* the Netflix and Black Mirror *Twitter* accounts tweeted a variety of user analytics made by viewers in the film. On January 17th of 2019, the Black Mirror account tweeted "On the biggest day of Stefan's life, over 60% of his friends from the future fed him Frosties" (@blackmirror, 2019, *Twitter*). On the same day, the Netflix UK & Ireland account replied that "Brits were *****less***** likely to waste a good cup of tea…Bandersnatchers in Britain chose "throw tea" only 52.9% of the time. The rest of the world do so 55.9% of the time" (@NetflixUK, 2019, *Twitter*). These tweets provide relatively benign data; however, their implications provide monumental developments in the utility of their gathered analytics which cover percentage of user decisions with geographical specificity. Although the exact motive of the cereal decision is unclear (whether it is simply part of the diegesis or is included for marketing purposes), it presents potentials for significantly more effective and profitable product placement.

Bandersnatch features a wide array of product placement, notably with Quaker Sugar Puffs (which was rebranded as Honey Monster Sugar Puffs in 2014), Kellogg's Frosted Flakes, Sony, Philips and Mitsubishi monitors, Sony Cassette Decks, the British newspaper *The Sun* and the British newsagent W.H. Smith. Considering their minimal presence in the film and feature of

outdated products, it is likely that these featured brands are simply part of the diegetic world meant to enhance a greater sense of 1980's nostalgia and not blatant attempts at product placement. Netflix has famously been secretive about viewer analytics, but these tweets offer a small glimpse of what is possible and sparks serious speculation about the potential of this medium.

Bandersnatch's interface now develops the recommendation algorithm and provides more business opportunities for data analytics and marketing. The project-specific algorithms "Branch Manager" and "Slate Tracking" - which allows viewer decisions to be dynamically tracked and logged effectively enabling the entire sequence – can work in conjunction with the recommendation algorithm for a variety of business potentials. However, finding all data analytics for viewer tracking in *Bandersnatch* is made difficult with Netflix's notorious lack of data transparency and determining their business plans for use of this technology is made even harder. Michael Veale, a prominent technology policy researcher at University College London, has provided a greater understanding of what is being tracked and consequently how it is being used for business. By utilizing the General Data Protection Regulation (GDPR), which grants EU citizens a right to request on individualized data a company possesses, Veale was able to obtain clarity on the use of his raw data from his viewing of *Bandersnatch*.

On February 11th of 2019, Veale revealed on *Twitter* that Netflix keeps track and stores every single decision made in *Bandersnatch* by the viewer along with the platform, date, hour and whether the viewer had watched the segments before. Netflix did not reveal how long user analytics were stored for. Choices are classified by code names and user decisions are logged in correspondence to increasingly complex codes; for example, the cereal decisions are classified as 1D for Frosties and 1E for Sugar Puffs whereas inputting PAC into Peter's safe is classified as

3AF with additional numerical permutations. The document reveals variations on codes based on the same decisions – "Pick Up Family Photo" has a minimum of seven distinct codes -, presumably differentiating between certain outcomes based on previous decisions. Another document released by Veale from Netflix reveals the function of their "Branch Manager" and "Slate Tracking" systems but also reveals the function of tracking user engagement with all titles: "with all of the titles on our service, we track at an *aggregated* level the interactions with a title (such as total number of views) to help us perform a range of business analysis operations. We do the same thing for choices made as part of a branching narrative, again at an *aggregated* level – for example to determine how to improve this model of storytelling in the context of a show or movie" (@mikarv, 2019, *Twitter*). This information is not to be taken at face value, although combined with previous evidence of Netflix's business practices it is feasible to believe that *Bandersnatch* offers another level of business efficiency through user analytics to better tailor the quality and method of storytelling through their original titles.

Netflix's success is clearly not completely dependent on the titles on offer; rather it is the analysis of user analytics to determine what will be the most effective content investment and the production of increasingly viewer tailored shows that allow the company to continue growing. User analytics from decisions made in *Bandersnatch* – along with the usual data collected - will provide Netflix with increasingly more accurate data about what users enjoyed allowing for increasingly more tailored viewer content. The film is the first step in expanding the effectiveness of their data analytics for more cost-effective titles. Netflix's ultimate plan for these analytics is impossible to predict, but the business potential for the use of this data is seemingly infinite; selling data for the most cost effective film or television series to major production

studios, licensing the technology for other streaming giants to use, promotional tie-ins with other companies and more effective product placement all mark lucrative opportunities.

The various forms of monetization for this medium are seemingly endless. With possibilities for licensing, to sale of user data and product placement, it is impossible to accurately predict what will be monetized. Tinder already has a number of promotional tie-ins with other companies - notably the music streaming giant Spotify which allow users to display music choices on their profile – but also with music festivals and celebrities. Through a partnership with entertainment companies AEG Worldwide and Live Nation, Tinder 'Festival Mode' directly connects users attending the same music festival (Perez, 2 May 2019, *TechCrunch*). On top of advertisements which are incorporated as user profiles (swiping right will open a link to the advertisement), Laura Bradley for *Vanity Fair* reflects on the expansive possibilities, speculating "if Tinder sold the technology to match people through content to Netflix, which could in turn produce some kind of 'Netflix and Chill' -branded product of its own" (Bradley, 2019, *Vanity Fair*). Considering that user decisions are tracked and directly displayed on their respective profile, it is reasonable to predict the sale of increasingly valuable user analytics which not only cover the data of the individual user but also the perception of that user to other users.

3.3. Product Placement

Considering the lack of any research on the effect of product placement in interactive television and film, this section will determine the effectiveness of product placement of interactive film through theories and effectiveness of product placement in traditional film and television and video games. Product placement is the marketing practice of incorporating a

specific brand or product into a work of media for deliberate compensation and or promotional intent (Lehu, 2009, 1-2). In the climate of streaming services there are primarily three practices of product placement. A more traditional form of product placement occurs when a company will supply products to a production in order to offset production costs. Brand integration is a more common approach and occurs when companies will pay a fee for a production to feature their brand and or product guaranteeing "a close-up shot of a product logo or a mention of the product by name". Copromotional marketing is most common with film and television in which a company will help advertise the production in exchange for promotional placement (Stacy Jones qtd. in Newman, 2019, *Fast Company*). With the lack of traditional advertising practices with commercials in television, Netflix has incorporated a variety of different product placements throughout their original productions, especially with season 3 of "Stranger Things". Concave Brand Tracking recorded over 100 brands from nearly 45 different products across the season, calculating "the total amount for product placement advertising value at over 15 million dollars" (*Concave*, 2019). As of September 30th, 2019 Netflix, reported $12.43 billion in debt up from $10.36 billion at the end of 2018 (Spangler, 2019, *Variety*). With new modes of consuming media, Generation Z has a more positive perception on product placements and consider it to be a viable mode of communication and preferred replacement for traditional commercials (Olson, 2018, 73).

A survey by the Audience Project revealed that 54% of North American Netflix viewers would stop watching if traditional commercials were incorporated into the service. Even more alarming, 42% of North American respondents claimed they would still stop watching content on Netflix if commercials were introduced while lowering the subscription price, a similar model used by Hulu (Werliin, 2019, *Audience Project*). Although *Statista* has projected $11.44 billion

spending on product placement in 2019 for the United States, up from $4.75 in spending from 2012, product placement is still not considered to be more profitable than traditional TV commercials – an estimated $70.83 billion spent in 2019 (Statista Research Department, 2019, *Statista*). With available data, U.S. product placement revenue in 2017 was $15.68 billion with TV ad revenue in 2019 being $70.6 billion dollars (Statista Research Department, 2019, *Statista*).

Due to the interactive nature of video games, product placement is much more engaging for the viewer than film and television and provides an alternative route of monetization without the negative consequences of traditional television commercials. This level of interactivity increases user engagement both physically and mentally over that of traditional media, especially when applied to product placement. A study conducted by Zachary Glass deemed that participants generally had a positive perception of in-game brand product placement when compared to out-of-game assets. Glass notes that a significant majority of participants admitted that they did not realize that there was any product placement, meaning "brands registered with their subconscious, and…participants registered these brands as good in their minds because of their positive experience while playing the game" (Glass, 2007, 29). The main conclusion Glass makes is that if consumers have a positive experience with a certain product, they are much more likely to have positive feelings towards it; consumer attitudes to product placement are largely shaped by the experience the consumer has on the outlet promoting it. Combined with video games and interactive content being a much more engaging medium with a higher rate of positive consumer reception to product placement, Netflix has compelling business potential in the form of product placement in interactive content.

In her 2004 study, Escalas concludes that active mental simulation with a target product leads to a higher evaluation on the product as well as to the respective advertisement. This is primarily because participants experiencing mental in simulation "engage in narrative processing, which transports attention away from critical thoughts and generates positive affect, resulting in more favorable ad attitudes and brand evaluations" (Escalas, 2004, 46). Additionally, the study finds that participants not engaged in mental simulation – passive product placement – engage in analytical thought processes which in turn leads to more critical thoughts and fewer positive emotions. Considering the mental simulation required for video games, players likely experience a lack of analytical thinking and are more involved with narrative processing. Garretson and Niedrich also conclude that the impact of positively perceived spokescharacters engaging in product placement have a more positive effect on consumers' attitude towards the brand (Garretson and Niedrich, 2004, 33). The implications of these results for video games are especially valuable as players directly control a character – often having a significant play in their customization and development - creating even stronger connections to the brand. As Lehu writes, "the player generally pays much closer attention than the viewer" through greater commitment to understanding the game world, greater duration to the content and more control (Lehu, 2009, 181).

Product placement is most positively received by viewers when it is incorporated in a subtle way without breaking the flow of narrative, logic of the diegetic universe or taking up too much screen time. The most common example of the in-game banners and advertisements are in sports game like the FIFA and NBA 2K series which feature advertisements on the side of the playing fields, or branded clothing available for in-game purchase. Product placement like this is deemed to be less intrusive to the game world as it is considered to be an authentic recreation of

what is prominent in these sports. A less common practice is brand company tie-in video games, like *Doritos Crash Course* or *Hooters Road Trip* (2002) which are notoriously poorly received. With this high level of engagement comes the risk of blatant product placement disrupting the authenticity of the world or the flow of gameplay. The open world role playing game *Death Stranding* (Kojima Productions, 2019) was criticized for its aggressive incorporation of Monster Energy, which players and critics deemed incoherent in the setting of the bleak, dystopian world. Players control Sam Bridges (Norman Reedus), a delivery man in a post-apocalyptic fractured America roamed by destructive creatures in-between the realm of life and death. Cans of Monster Energy drinks are always available in Sam's room – a hub setting where players can recover from missions – and can be drunk at any time offering boosts to stamina. The game offers no explanation for their existence in the world. As Colin Campbell writers for *Polygon*, "This is product placement at its most sensational and incoherent… *Death Stranding* is a sparsely populated world where branded products are almost non-existent. It is a place of scarcity and need. But if you want to guzzle a branded energy drink, it's as free as air" (Campell, 2019, *Polygon*). For product placement to be effective it must be incorporated into the logic of the diegesis without directly intruding on a user's engagement with a title.

Using the cereal decision in *Bandersnatch* as an example, giving viewers the choice to choose between two different products provides a heightened level of engagement as viewers actively choose instead of being shown a product. Using the tweets from the Netflix and Black Mirror *Twitter* accounts, product placement in interactive media could also provide companies with direct insight as to which product viewers choose along with geographical demographics. The music decision between "Thompson Twins" or "Now 2" allows viewers to choose which soundtrack they hear during that sequence, a choice previously determined exclusively by the

director. By giving the choice for viewers to choose diegetic permutations in the form of prop and soundtrack changes, Netflix is also directly asking for choice between products. Netflix has a direct record of what product users have chosen in correlation with location, exact time and platform providing extremely detailed information for marketers allowing for even more targeted advertising. Knowing that, for example, a majority of viewers chose Frosted Flakes over Sugar Puffs on a smartphone, at 9PM, in North America in February provides valuable data for companies to more effectively target advertisements.

Additionally, product placement could evolve into an analysis of competitor products in correlation with user demographics, seeing how one companies' product compares to another competitor in that field and which product specific viewers chose. As Jesse Damiani speculates in her *Verge* article, "Black Mirror: Bandersnatch Could Become Netflix's Secret Marketing Weapon", Netflix "could pave the way to data-mining deals with the likes of Spotify or Apple Music, which could be made during pre-production or even earlier. It's not too far-fetched to imagine Netflix designing entire shows around a particularly useful or lucrative contract to determine, say, whether teenagers will be more engaged by music on 'Rap Caviar' or 'Chips & Salsa' playlists" (Damiani, 2019, *The Verge*).

One of the most important developments in product placement marketing is virtual product placement; computer-generated imagery technology allowing virtual generation of product placement in editing. This allows for fluidity of advertised products tailoring to different markets allowing for changes in products based on geographical locations, but also allowing the resale of product placements in previous content: "that Coke can shown in the refrigerator of an original show can be bought by Pepsi for rerun syndication, and sold again to 7-Up for foreign markets" (Galician and Varley, 2013, 120). Discourse around this technology has been prevalent

since the early 2000's, however it is only until present that the technology has begun to infiltrate the market. Companies like Mirriad, Ryff, SynthEyes and all offer virtual product placement services, however, has not been used with major Hollywood pictures and has primarily been used with smaller television broadcasters and company commercials.

On top of ethical implications of the over-commercialization of reality, lack of meaningful incorporation with major media productions is likely due to the legal implications and contentions of this technology for artists: "one is the vexatious issue of rights, particularly how to reimburse the creators and producers of series if their work is changed. Even though virtual ads represent a new source of revenue for the Hollywood studios that produce TV programming, many describe the rights issue as a drawback that will impede the widespread appearance of virtual ads" (Elliott, 1999, *The New York Times*). Much like the themes of control in *Bandersnatch,* virtual product placement runs the risk of allowing companies to alter reality for further commercialization. This presents the risk of fundamentally breaking down objectivity. Although this type of technology has minor changes to the film, it still is a generated reality specific to each viewer determined by an algorithm for maximum commercialization. Just as evidenced in *Bandersnatch* and in the user analytics gathered by Netflix, the viewer remains a spectator to their own decisions as the illusion of control hides the fact that everything is being chosen for us.

As Brandon D. Almond writes in the Washington and Lee Law Review, these virtual product placements can create implied celebrity endorsements and cannot be easily disputed through contract which may be considered a breach in the right of publicity (Almond, 2007, 642) This risks a breach in intellectual property law in which a celebrity may be falsely endorsing a product that was never intended to be in the final cut of the finished title. Combined with the

decision-making process in interactive content which informs advertisers as to which types of users choose their product, companies can effectively determine the perfect product placement in correlation for each respective viewer. Considering the negative implications of Netflix incorporating commercials into their service and the rising cost of production costs, product placement alone will not be enough to compensate. The key differential for Netflix will be the evolution of more effective and personalized product placement for viewers through user analytics gathered from the recommendation algorithm, interactive content and exploration of virtual product placement.

Conclusion

In *Black Mirror: Bandersnatch,* interactive film has resurged into the 21st century bringing with it new methods of storytelling, theoretical ambiguity and compelling business potentials. At the heart of *Bandersnatch* is the theme of the illusion of control over Stefan and the viewer. Brooker and Jones use self-reflexive and meta-referential moments throughout the film in conjunction with the interface to develop this theme. Over the course of the narrative, the viewer is believed to have complete autonomy over Stefan's actions. As Stefan begins to resist the viewer's autonomy by not performing chosen actions, the viewer begins to understand that their story is paralleled to Stefan's. By realizing the limited interface structure of Dead Ends and forced narrative branches, the viewer is brought to the harsh realization that nothing is truly in their control. The interface provides a level of interactivity; however, it does not provide control over the diegesis as initially assumed, shattering any preconceived notion of autonomy. As the credits roll, Netflix reveals itself to be the puppet master, actually controlling the viewer through these forced narrative branches; this level of interactivity is not a direct control over the diegesis, rather a selection method of choosing what scenes will be shown to the viewer. Analyzing critical and public reception, audiences are aware of this illusion of control in regard to a limited incorporation of interactivity despite any lack of clear consensus regarding the effectiveness of the interface.

What is also clear from this reception is that interactive film is still considered a hybridized combination of film and video games instead of its own medium. Tracking the history of interactive film, it is clear that the medium has constantly adopted different technologies and incorporated different elements of film and video games. This makes the medium volatile and subject to change due to a lack of consistent characteristics, notably the interface. Additionally,

the literary and scholarly landscape for interactive film is unfortunately quite sparse and dated. For interactive film to evolve past a cinematic niche, I argue that it should be understood as its own medium to prevent further media convergence. While media convergence is not entirely detrimental, it does hinder the growth of interactive film by prohibiting any theoretical developments discussing interactive film as its own medium. For the medium to grow, more interactive films should be produced with additional theoretical developments defining its characteristics and potentials in storytelling. Truly understanding all these vectors of interactive film demands more time for further production and development of new content in addition to a dedicated lexicon and consistent definitions of interactive film.

Netflix currently is at the forefront of this medium and as of 2020, interactive film still remains a niche product not entirely adopted by the masses. Currently Netflix only has six interactive titles available for viewers, however the company has vowed to double down on producing more in late 2020. The business potentials of interactive film are practically endless, however finding which opportunities will be explored by Netflix can only be accomplished through speculation by cross-referencing what the company does, and what is possible with the medium. With Netflix's use of the recommendation algorithm and user analytics to determine what shows are the most cost efficient, interactive film can provide even more enhanced data allow. By having viewers directly interact with a film and cross reference the most chosen decisions and the demographics of each viewer, Netflix can effectively determine what narrative branches are the most enticing for viewers.

This information can be used for development of even more successful original content or can even be sold to other media producers to determine exactly what narratives, visuals, actors, directors, settings etc. will attract the biggest audience. Interactive film can also enhance

the effectiveness of product placement by incorporating branded products in certain decision junctions. The engagement rate of viewers and positive perception of product placement are both proven to be higher for interactive content rather than traditional film and television. Having viewers choosing between two products in a decision junction in correlation with Netflix's in-depth user analytics enables companies to have a more engaging form of product placement, determine how to out-sell competitors and also determine the market of a certain product. Additionally, virtual product placement can be incorporated into interactive film allowing the algorithm to change the product advertised in correlation to the demographics of the viewer enhancing the effectiveness of product placement. Interactive film offers plenty of additional business opportunities and these two are only examples of what can be possible with what is already being accomplished.

Images

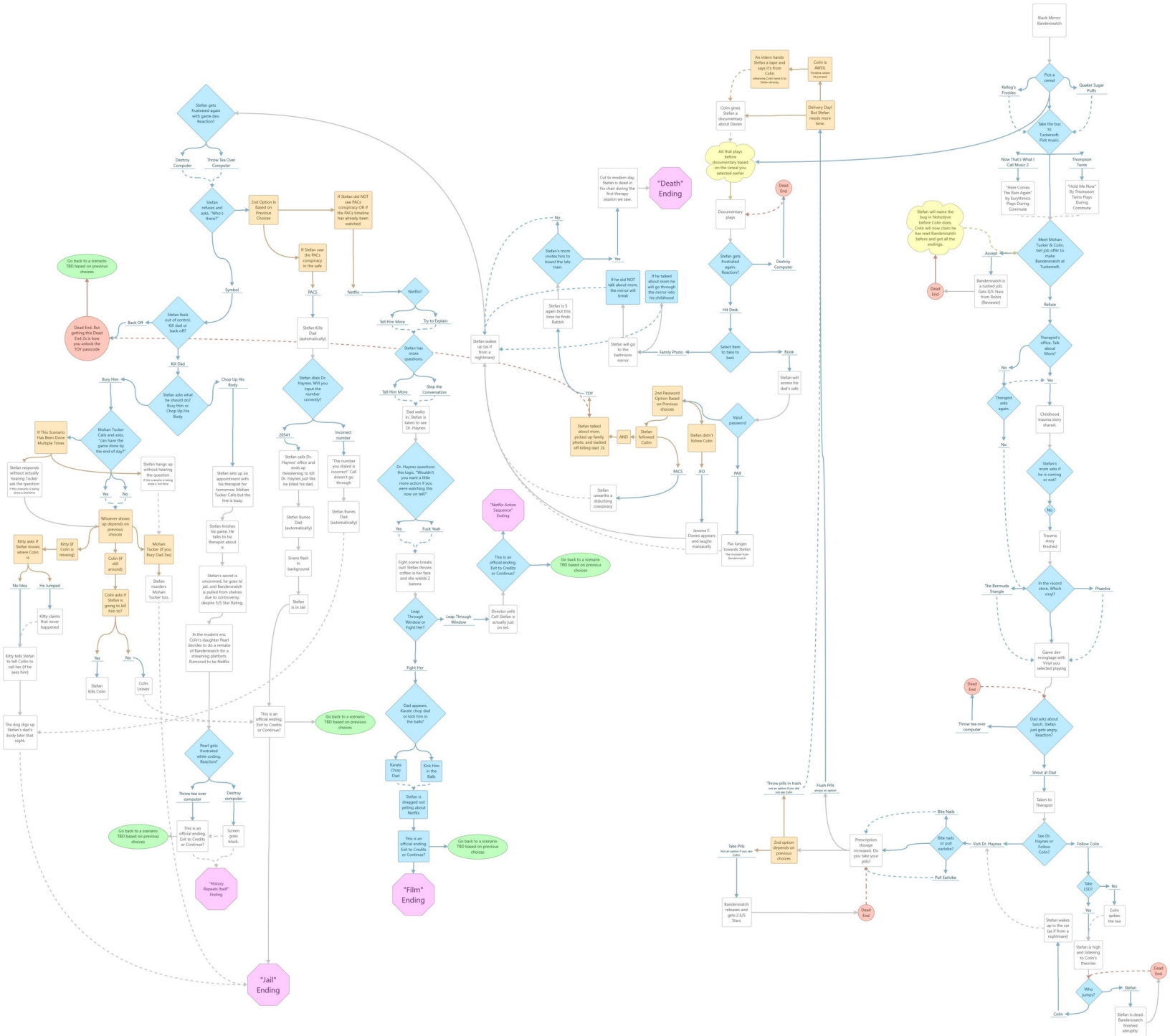

Figure 1: The *Bandersnatch* branching decision pathways flowchart.

Source: IGN. "Bandersnatch Choices Map." *IGN*, IGN, 10 Jan. 2019.

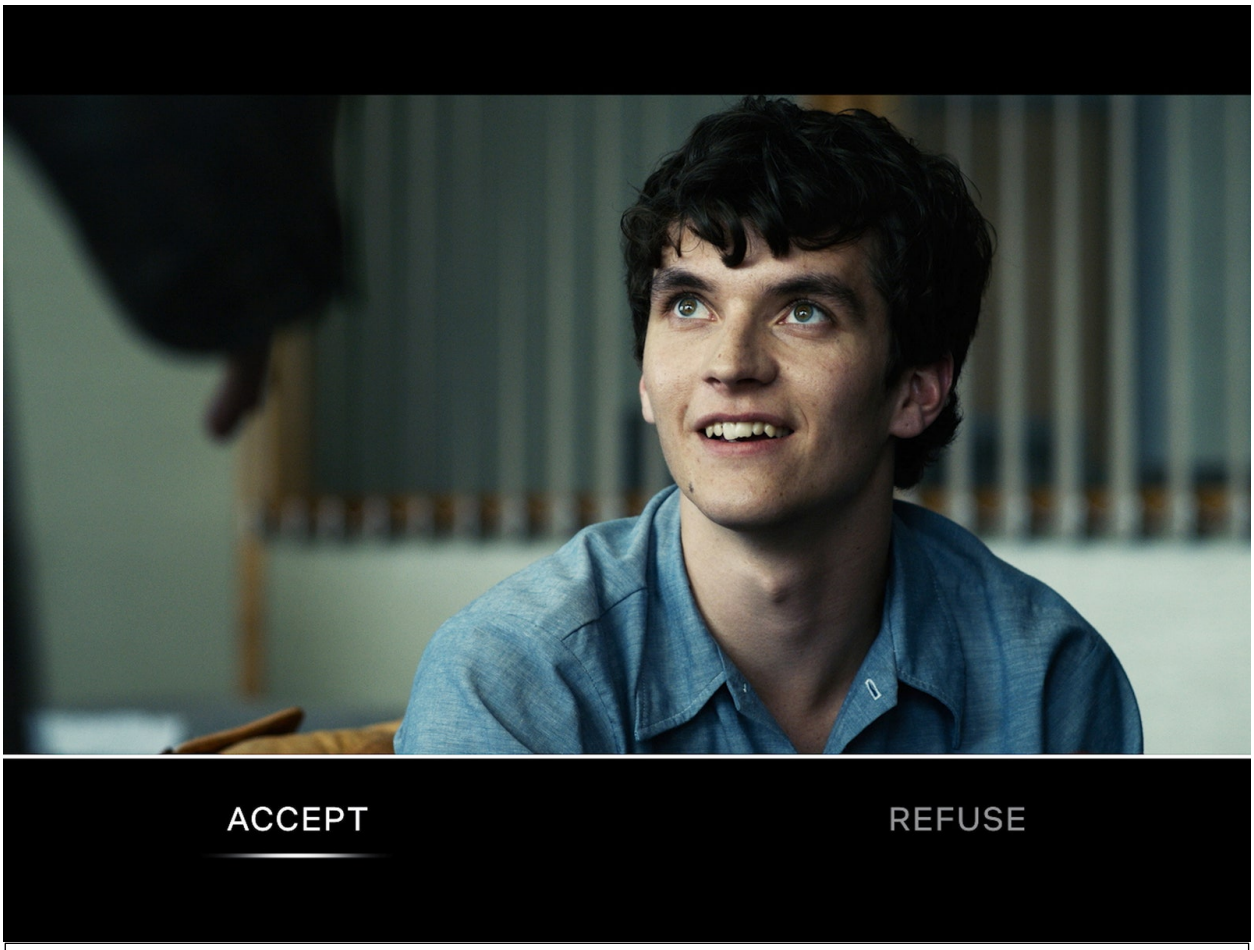

Figure 2: The *Bandersnatch* decision interface.

Source: Slade, David, director. *Black Mirror: Bandersnatch*. *Netflix*, Netflix, 28 Dec. 2018.

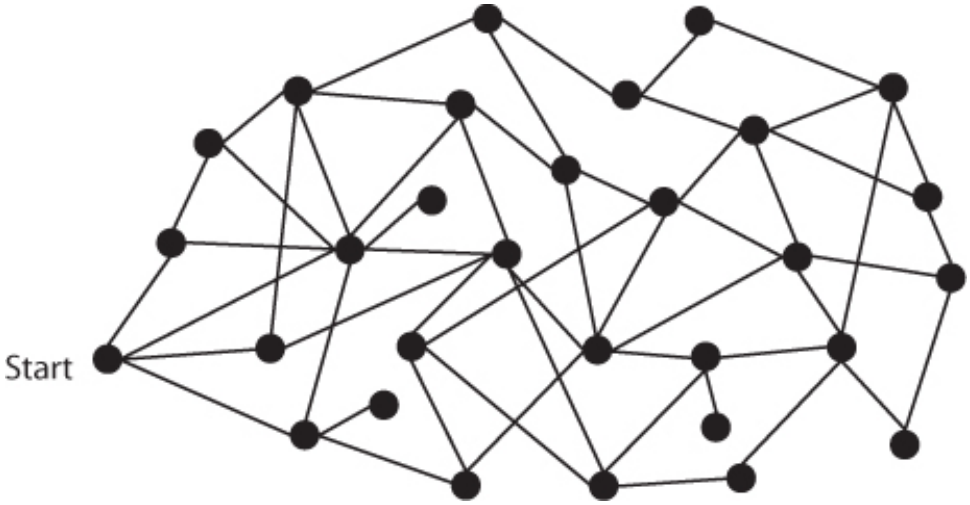

Figure 3: “The Network” interactive architectural structure.

Source: Ryan, Marie-Laure. *Narrative as Virtual Reality 2: Revisiting Immersion and Interactivity in Literature and Electronic Media*. Johns Hopkins University Press, 2015, pp. 314

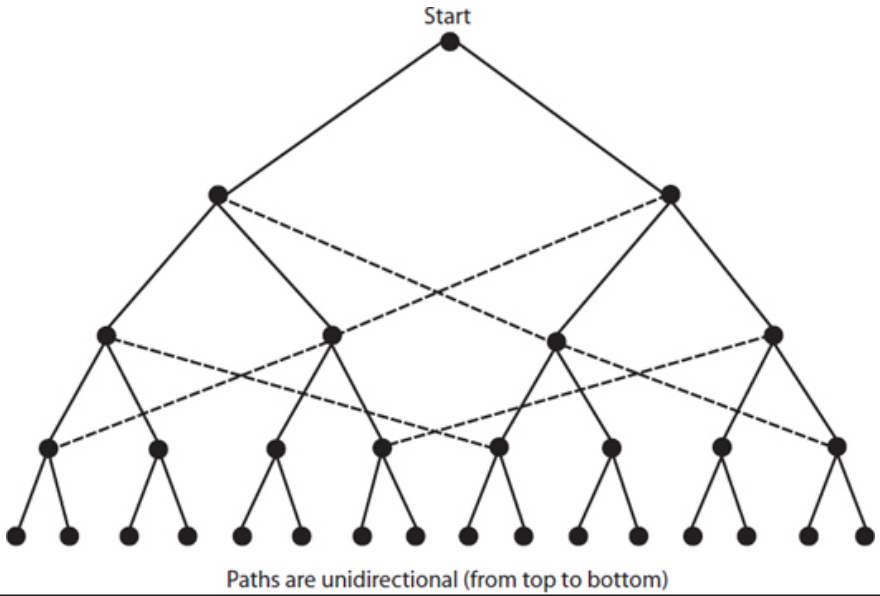

Figure 4: “The Tree” interactive architectural structure.

Source: Ryan, Marie-Laure. *Narrative as Virtual Reality 2: Revisiting Immersion and Interactivity in Literature and Electronic Media*. Johns Hopkins University Press, 2015, pp. 318

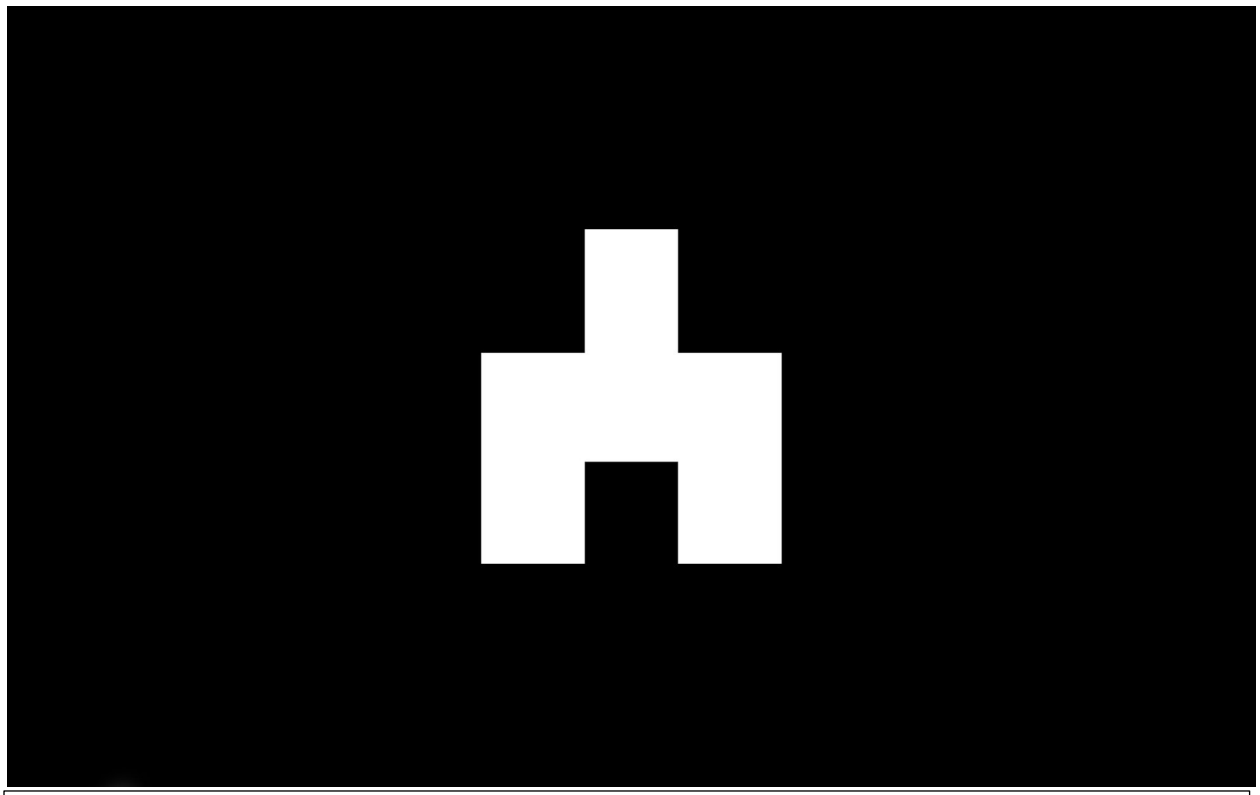

Figure 5: The branching pathway symbol in its base form, prevalent in *Bandersnatch* and *White Bear.*

Source: “White Bear Black Mirror.” *Wikipedia*, Wikimedia Foundation, 21 Dec. 2018.

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