



**Ramifications of Digital Technology - A Critical Study
of *Black Mirror: Bandersnatch***

<https://doi.org/10.59136/lv.2024.2.2.6>

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Abstract

Mankind is the only species to be gifted with the power of reasoning. Our quest to comprehend life has always been on the move. There was a time when we were completely governed by the laws of nature. However, through breakthroughs in science and technology, man has been able to evolve and exercise control. We now live in an era where our lives are governed by digital technology. Literature, cinema, and other art forms are the bases on which this is built. As movie lovers there have been times where we wished the movies had alternate endings. This stems from our own thoughts of living vicariously through the main characters. This is being facilitated by Interactive Digital Narrative in video games and movies. To understand and analyse this, the present paper takes *Black Mirror: Bandersnatch* to study the same. *Black Mirror: Bandersnatch* is an interactive movie that gives us several choices as we become the protagonist and attempt to change the fate of the protagonist in the story. Does digital technology help or harm our core values? Can art forms withstand the test of time, even in this digital era? This paper comprehends to find answers to the above questions.

Keywords: Interactive Digital Narrative, digital technology, cinema, value system, choices

Impact of Technology on Mankind

Human beings are gifted with the capacity of reasoning and a quest for seeking knowledge. From living in accordance with the laws of nature, man evolved to exercise control over the environment with advancements in science and technology. Janet Murray in her book *Inventing the Medium: Principles of Interaction Design as a Cultural Practice* opines that “human beings, unlike other animals, are able to endow inscriptions, utterances, and performed actions



with meaning... into more complex and expressive forms” (13). But today all our lifestyle choices are directed by technology. Sven Meyer in his article *The Impact of Digital Life on Society* observes that,

Within the last few decades, the impacts of digital life have changed significantly. It is barely possible to imagine what daily life would look like without all those used gadgets. A big proportion of people are doing their work mainly on a computer, everyone is checking their mobile phones a lot of times every day. Online activities can affect truth and trust of people, through conversations on Facebook, etc. Moreover, the well-being of individuals can be influenced, physically as well as emotionally. The impact of digital life on society brings exceptional benefits in many different fields. (1)

Thus, every area of our lives is interlinked with the usage of technology. This also includes our means of entertainment, giving genesis to innumerable technology-based entertainment spaces.

Literature as the Mirror of Society

Art – the entire expanse of literature, poetry, music, cinema reflects the environment that we cherish. Among all art forms, literature is the closest to human society as it is a mirror of human society. The “ability to see connections between fields, ideas, and concepts is a core skill” according to the theory of connectivism (Siemens et al. 6). Applying this, we can find that there is a scope for learning from all these art forms as well. Cultural theorist Raymond Williams gives a clear definition of how art reflects life in his essay *The Analysis of Culture* (as cited in Storey, 1997). According to Williams,

...the ‘ideal’ in which culture is a state or process of human perfection, in terms of certain absolute or universal values. The analysis of culture, if such a definition is accepted, is essentially the discovery and description, in lives and works, of those values which can be seen to compose a timeless order, or to have permanent reference to the universal human condition.... There is the ‘social’ definition of culture, in which culture is a description of a particular way of life, which expresses certain meanings and values not only in art and learning but also in institutions and ordinary behaviour. (48)

According to Murray, “culture – the web of shared meaning in which we understand our lives and our world – is conveyed in large part through symbolic representations of various kinds – alphabetical writing, paintings, movies ...” (13). Hence, we can assert that cinema is one such art form that appeals to our aesthetic senses. It is important to note that our world of fantasy and imagination is also subtly influenced by our surroundings. For instance, as movie lovers there have been times where we wished the movies had alternate endings. One such genre of cinema is the interactive format, wherein within the movie, we are given several choices as we become the protagonist and attempt to change our fate in the story.

Narratology in Cinema and Interactive Digital Narrative (IDN)



Our eagerness to change the fate of the characters in the movie gave birth to a new form of cinema governed by technology and different narrative. Therefore, we see that Digital Technology has permeated the world of cinema at our behest. Along with many more changes and visual effects, this form of technology changed the entire narrative of the cinema. Kristen Daly, in her article *Cinema 3.0: The Interactive-Image* states that,

Cinema is taking on the characteristics of new media, existing in a networked, intertextual space, which enables new developments in narrative that are increasingly interactive ... a movie no longer exists as a cohesive, unchanging art piece but instead participates in a world of cross-media interaction, and this has enabled new forms of narrative requiring, as part of the enjoyment, interaction in the form of user-participation and interpretation. (81-82)

Cinema has evolved through the ages from the era of the silent cinema to the era of technology where VFX enables us to do things unimaginable. Further with the advent of video gaming the viewers started enjoying in participatory cinema. Based on this, the film makers used the same method to create the experimental movie *Black Mirror: Bandersnatch*. This was made possible using Interactive Digital Narrative (IDN). The entire narrative experiences complete metamorphosis with the usage of Interactive Digital Narrative, both from the perspective of the viewer and the director.

Narratology means, we have a narrator as an agent whose function is to convey a story in a particular medium. In literature, the narrator uses linguistic utterances to convey his ideas, while in films the narrator uses moving images and sounds to convey his ideas. This primary difference stems from the fact that most literature is in written medium whereas films are in visual medium. Seymour Chatman observes that narrative is “a deep structure quite independent of its medium... narrative is basically a kind of text organization... that needs to be actualized: in written words, as in stories and novels; in spoken words combined with the movements of actors imitating characters against sets which imitate places, as in plays and films” (121). French literary theorist, Gerard Genette, developed the concept of narrative levels, which explores the different layers of narratives within a text. The main narrative setting where the characters and events take place is referred to as the diegetic level. The "story within a story," or metadiegetic level, refers to narratives that are embedded within the primary diegetic level. The hypodiegetic level creates multiple levels in the narrative, which refers to stories within the metadiegetic level. The extradiegetic level refers to the things that are not part of the fictional universe but have some bearing on the story which is distinct from the main narrative realm (Coste and Pier). His theory is reflected in the intricate plot of this interactive movie *Black Mirror: Bandersnatch* taken for study. In the movie, the diegetic level revolves



around the story of the protagonist. The metadiegetic level revolves around the plot of the fictional novel "Bandersnatch" by Jerome F. Davies, which the protagonist adapts into a video game. The hypodiegetic level revolves around the alternate realities that arise from the viewer's choices. Each choice leads viewers onto a different path and a different outcome, thus creating multiple smaller narratives within the larger metadiegetic context. The extradiegetic level revolves around the interactive interface that asks viewers to make decisions at pivotal points in the narrative.

Narratology further gets diversified when applied to video games and digital films, as the narrative structure becomes more dynamic in cyberspace. It is here that Interactive Digital Narrative (IDN) gains significance. These narratives are designed in a way that the final experience is achieved only through participation. "Designing Interactive Digital Narratives [IDN] is often described as a challenge that requires moderation between player freedom and the structured experience that interactive forms like video games internalize" (Roth, et al. 1). For instance, IDN designed for the movie taken here for analysis has embedded a few technicalities like nonlinear editing, time manipulation, dramatic agency and parallel storylines. Nonlinear editing allows the integration of different story branches and propels smooth transitions between choices. Time manipulation techniques enable the incorporation of flashbacks and flash forwards, thus revealing different aspects of the story based on user choices. Dramatic agency allows the viewers to make meaningful choices. Embedding parallel storylines based on the viewer's choices heighten the impact of the choices made. *Kinoautomat (1967)* made in Czechoslovakia is considered to be the world's first interactive movie. Koenitz et al., in their book *Interactive Digital Narrative: History, Theory and Practice* observe that,

Interactive Digital Narrative (IDN) connects artistic vision with technology. At its core is the age-old dream to make the fourth wall permeable; to enter the narrative, to participate and experience what will unfold. IDN promises to dissolve the division between active creator and passive audience and herald the advent of a new triadic relationship between creator, dynamic narrative artefact and audience-turned-participant. ... IDN aggregates different artistic and research directions from malleable, screen-based textual representations to the quest for virtual spaces in which human interactors experience coherent narratives side by side with authored narrative elements and synthetic characters. (1)

Author Janet Murray discusses the same in her article, *Research into interactive digital narrative: a kaleidoscopic view*. According to her, IDN "presents us with multiform scenarios in which the same events can be understood in multiple contexts and the same starting points can be imagined as giving rise to multiple possible outcomes" (1). In this type of narrative, the viewer can influence how an incident unfolds, thus, changing the possible outcome. This also



leads to multiple perspectives in terms of comprehending the plot structure as each choice might lead to a different outcome.

Black Mirror: Bandersnatch is selected for a close scrutiny owing to its unique characteristics.

1. Innovative storytelling format - Viewers are given the ability to make choices on behalf of the protagonist, Stefan Butler (played by Fionn Whitehead), influencing the direction of the plot and determining his fate. 2. Complex Narratives and Multiple Endings - the film features multiple branching storylines and various potential endings, resulting in a vast number of possible combinations. 3. Fate vs freewill becomes a recurring theme in the movie, compelling the viewers to think about the consequences of their actions. This paper makes an effort to understand how the movie might serve as a metaphor of our capacity to make wise choices. We also try to determine whether, given the option, we would let technology take control of our lives. Does participatory cinema—with a focus on Interactive Digital Narrative—allow us to live vicariously via situations that are unlikely to occur in reality? Do video games inevitably bring out our violent tendencies?

Analysis of *Black Mirror: Bandersnatch*

Among the many creative writing genres, science fiction is relatively young and not used until the 1930s, when the science fiction pulp magazines (James & Mendlesohn, 2003, p. xvi) appeared. This genre began to grow when Wells' stories came into the market. But science fiction grew alongside cinema in 1900s with the film maker, George Melies. It is he who showed the power of the unreal to the cinema lovers through techniques like dissolve, fade in-out, colouring, single frame shooting etc. And this genre in cinema began to grow to a level where they began using digital technology to handle any subject deftly. One such pioneering science fiction cinema is *Metropolis* (1927) by Fritz Lang. By now science fiction cinema with the usage of digital technology is not only fantastic, but futuristic and synonymous of Western civilization. This cinema uses technology driven effects commonly called as CGI, (computer generated images) to create a new experience. The masters of this include, Edwin S. Porter, *The Eagle Nest* (1907), Fritz Lang, *Die Niebelungen* (1924), Gary Demos and John Whitney, *Westworld* (1973), James Cameron, *Terminator 2: Judgement Day* (1993), *Jurassic Park* (1993) and *Toy Story* (1995), Christopher Nolan, *Interstellar* (2014) and many more. Thus, we find digital technology creating noteworthy ramifications in science fiction cinema.

Anthology online series *Black Mirror* (2011) illustrates how technology affects the lives of the characters through a series of stand-alone episodes. All the episodes tell gruesome and tragic stories, yet so realistic and well-written that we believe they might happen in the near future.



Black Mirror: Bandersnatch (2018) is a science fiction movie made as a part of this anthology series. The movie was directed by David Slade and produced by Netflix. The film's protagonist Stefan Butler is a game developer who plans to adapt the interactive novel *Bandersnatch* into a computer game called *Bandersnatch*. In this movie, the narrative moves forward not just through characters' interactions but also through the protagonist's choices at critical points. The interactor is only provided binary options the entire time, which advance the plot and direct the protagonist's course of action.

Innovative Storytelling Format

Unlike regular cinema, where the audience is compelled to watch the director's version of the story, this experimental cinema allows the audience to make changes in the storyline, thus creating the innovative storytelling format. Beginning in July 1984, Stefan is shown taking anti-depressants after waking up from a nightmare. According to Koenitz et al., "Interactive Digital Narrative (IDN) challenges basic assumptions about narrative in the western world – namely about the role of the author and the fixed state of content and structure as the audience takes on an active role and narratives become malleable" (91). But as the movie progresses, we are drawn deeper and deeper into Stefan's life and his problems. His mother is killed in an accident and Stefan holds his father responsible for the tragedy. The more we understand Stefan as a person, the more we want him to succeed in life, to make the right choices. We are initially led to believe that we must make the right choices for Stefan, though we realise they are not beneficial for him. We are compelled to walk down a dark and sinister path in trying to help Stefan find redemption. Christian Roth et al., in the article *Ludonarrative hermeneutics: a way out and the narrative paradox discusses* how "the practice of designing Interactive Digital Narratives [IDN] is often described as a challenge that requires moderation between player freedom and the structured experience that interactive forms like video games internalize" (1). Complete autonomy is not given and if the interactor chooses to remain passive, the interface makes the inevitable choice for him.

Video Games Ignite Violence

The movie also addresses the issue of video gaming and violence. Our observations of Stefan's journey reveal that he struggles with anxiety issues and pent-up aggression. As a result of the choices we make, he is forced into situations where he ends up displaying his frustration -either by damaging his computer or verbally abusing his father. The novel that Stefan uses to develop the videogame encourages violence and as a viewer controlling Stefan's choices, we end up facilitating Stefan's anger. As alarming as it may sound, video games



promote violence and aggression. Psychologists Craig A. Anderson and Brad J. Bushman observe that people who continuously play violent video games display a sense of aggression. Their view “that repeated exposure of children to media violence increases their aggressiveness as young adults, and that media violence is a significant risk factor in youth violence” (354) is quite evident in the movie.

As the plot develops, Stefan completes the coding and submits the game for his boss' approval. He is given an additional week to complete the game as he left one pathway unfinished. Stefan locks himself in his room and starts reading the author's story in an attempt to find inspiration. He discovers that the author was a psychopath who murdered his wife in cold blood and mutilated her body. Psychologists Anderson and Bushman observe that “Violent media are those that depict intentional attempts by individuals to inflict harm on others. An ‘individual’ can be a nonhuman cartoon character, a real person, or anything in between” (354). When Stefan’s father interrupts him and tries to calm him down, he kills his father. The observations made by Anderson and Bushman, that “situational input variables (e.g., recent exposure to violent media) influence aggressive behavior through their impact on the person’s present internal state...” (355) is quite evident in the above scenario.

Complex Narratives and Multiple Endings

The main plot of the story revolves around Stefan writing a code for a new interactive video game, in which he gives the players only a definitive set of choices. In IDN, the computer programmer has to design the script in a manner that leads to meaningful interactions between the man and the machine. Janet Murray states that “because the computer is a participatory medium, interactors have an expectation that they will be able to manipulate digital artifacts and make things happen in response to their actions. They will therefore become frustrated and impatient when they are not allowed to act” (56). Therefore, the programmer has to design a script that is neither too rigid nor too flexible. According to Ivars-Nicolas and Martinez-Cano (as cited in Peña-Acuña 2020) “In addition, the viewer acquires an active and participatory role and is situated within the story, as an author-reader, acquiring the role of protagonist of the plot, taking its decisions, and personalizing the story that leads to a specific experience but in a controlled manner” (17). Thus, the interactors are given the opportunity to pick Stefan's fate, just as Stefan decides choices for the players in his game.

As time passes, Stefan starts having panic attacks. Stefan must decide whether to fulfil his appointment with his psychologist or follow Colin, a tremendously successful game creator, as his next crucial decision. Having been through several loops within the movie, we now



understand what choices to make in order to take the story forward. We decide that Stefan should follow Colin who is going to relieve him of his misery. Stefan must now decide whether to accept or reject the drugs offered by Colin. Reluctance on the part of the interactor leads to ramifying endings. Or the interface decides the choice for the interactor and its choice is thrust upon us. As pointed out by Nagihan Kilic, the movie,

positions the spectator as a ‘puppeteer’ who controls ‘the puppet’, to some extent, and makes him do things which includes murder, drugs and suicide etc. even though the protagonist makes it clear that he does not want to do any of these things. This form of interaction provokes a bizarre sadistic relationship between the protagonist and the viewer” (4).

As a result, we are compelled to decide that Stefan must take the drugs. Colin coerces Stefan into thinking that they exist in several dimensions and that it is okay to die after a round of drugs. ‘Which of us is going to die?’ he inquires as they step out onto the balcony with Stefan. As interactors, the decisions we make for Stefan determine his morals. Our moral standards as viewers and participants are also evaluated here. The movie ends abruptly if we choose to stop Stefan from jumping. Once again, we must make the alternate decision. Christian Roth et al., describes this as the ‘narrative paradox’ where, “the player asserts agency, the freedom to take actions, while the game designer refuses to relinquish control of the narrative for the purpose of ensuring what they believe is a satisfying structure” (5). If we get emotionally involved in the story and the character, we are unwilling to hurt Stefan in any way, it reflects the values we believe in. Thus, the movie can lead to meaningful implications of our choices to an extent. As an interactor experiencing the movie, when one decides on a path that the creators had not intended for us to choose, we face a similar abrupt end. The parallel between Stefan and the interactor definitely cements the vicarious nature of the movie, which stands as an example for how obsession with technology can drive us towards the path of destruction.

Conclusion

In the 20th century where, digital technology began dominating our lives, Siemens’ theory of connectivism is apt in saying that “personal knowledge is comprised of a network, which feeds into organizations and institutions, which in turn feed back into the network, and then continue to provide learning to individual. This cycle of knowledge development... allows learners to remain current in their field through the connections they have formed” (6). This network covers everything that comes under the umbrella term ‘digital technology’. If we apply the theory of connectivism and accept that it is good to gain knowledge from varied sources, then we need to ask ourselves – does man always have the discretion to use the knowledge at his disposal for constructive purposes? Are the choices made by him governed by his value



system? Is he free to make his own choices in the first place? In the movie, even though we assume we are controlling the protagonist's choices, much like the main character in Stefan's videogame, we only get to choose what has already been decided for us. In this case it is the producers and the director of the movie who have pre decided the choices for us. In reality, how much freedom do we really have to make our decisions? Are we mature enough to decipher all information in the right manner? Are we capable of filtering information and categorising it as beneficial or otherwise? Duke, B et al., aptly say that "there is always a certain amount of core knowledge that is required to be able to understand any information presented. Depending on the field of study, this core knowledge will vary. If a person with limited core knowledge accesses Internet information beyond his or her ability to understand, then that knowledge is useless" (9). We will always have access to endless knowledge since digital technology is continually growing. However, this means there is limited focus on what we should be doing. Technology can help with knowledge acquisition, but it's crucial that we use it properly. To properly accept technology, we need common sense and a moral compass. Otherwise, we might assume that we have no other option except to let technology rule our life. Yes, there are many advantages to using technology, but there are also some drawbacks that should not be disregarded. Unless we voluntarily place our well-being in its hands, technology cannot undermine our value system on its own.

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