Breaking the Shackles: Toward a Taxonomy of Interactive Cinema

Chao Ming, Communication University of China, China

The Asian Conference on Media, Communication & Film 2019
Official Conference Proceedings

Abstract
Drawing on Eric Zimmerman's four types of interactivity, this paper proposes a taxonomy of interactive cinema by defining four modes of interactive movies: the cognitive mode; physical mode; collective mode; and selective mode. The above cinematic modes are not distinct or mutually exclusive, and their emergence follows a generally chronological order. More importantly, the rise of a new mode did not render the existing ones obsolete. Conversely, it absorbs interactive features that have been commonly accepted and integrates them into an original form. As a result, the once-rigid boundaries between various artistic and cultural forms are more blurred than ever. It is predictable that in the future, moving pictures will be presented as interactive multimedia projects that exist as a variety of formats and can be accessed by a diversity of platforms.

Keywords: Interactive cinema; Media convergence; Film spectatorship

Revisiting Interactivity

As a term that is "too broad to be truly useful" (Zimmerman, 2004, p. 158), interactivity easily falls into a broad category of terminologies that are so equivocal and so inclusive that they can accommodate almost everything. Its presence extends from a quotidian projecting slide to *Star Trek*'s imaginary Holodeck, covering nearly all computer-based communications (Steuer, 1995; Downers & McMillan, 2000). Having said that, the term is clichéd to a greater extent in contemporary arts, as almost every media artist who emerged after the 1960s would proclaim themselves the creators of "interactive new media," as opposed to the traditional "passive old media."

Even more problematic is the attempt to use "interactive" to modify cinema, whose medium specialty is deeply rooted in the folktale exaggerating the inability of the audience to confront a rushing train. In his allegory of the cave from *The Republic*, Plato (trans. 1968, VII) described a cave-like dwelling in which humanity are shackled by the legs and the neck, unable to turn their heads around, but are permitted solely to face the shadows projected onto the back wall, believing these are the entire truth. Though Plato's meaning is multiple, this picture of darkness and passivity graphically depicts what we now perceive as "cinematic experience." As a result, for many scholars, "interactive cinema" is simply identified as an oxymoron, and it is no wonder that some even doubt that cinema could ever be interactive. Juul (2004, p.136), for example, reckoned that the two black bars found on the top and bottom of a widescreen movie through which "cut-scenes" were displayed inevitably signified the notion of "cinema," as well as "the absence of interactivity" (p. 136).

For those who believe in its existence, they may find the definition to be a conceptual mosaic. On the one hand, some scholars, such as Weiberg (2002) and Daly (2010), located interactive cinema strictly within the context of film studies, while others, such as Gansing (2003), incorporated the notion of "extended cinema" (Youngblood, 1970, p. 41) by drawing examples from contemporary artistic practices. On the other hand, Bolter and Grusin (2000) simply treated it as a type of digital game, and they are just one example among many. But even within the framework of digital games, the concept applies to diverse forms of products: In the 1990s, interactive films can simultaneously refer to "space flight shoot-em-up" as in *Wing Commander*, games mixed up with "lots of little bits of video" like *Voyeur*, or "*Dragon's Lair* with live actors," such as *Critical Path* (Adams, 1995). Today, if we search for "the history of interactive cinema" online, the results are still a mixture of video games (*Heavy Rain*), experimental and avant-garde movies (e.g. *Kinoautomat*), B movies (e.g. *I'm Your Man*) and streaming series (e.g. *Black Mirror: Bandersnatch*) (Burgos, 2019).

Aiming to address this theoretical puzzle, eclectic archive research is undertaken to survey how "interactivity" has been applied to, associated with, and exploited by traditional cinema. Adhering to a mosaic method from the sociology of knowledge, I embrace pragmatic pluralism over one single, definitive truth (Alexandra, 2003, p. 16). Therefore, the present study does not aim to arrive at a precise definition of the term; rather, I will recognize the innate complexity of the subject and propose a taxonomy of interactive cinema that outlines its four distinctive modes alternatively.

A Taxonomy of Interactive Cinema

My understanding of "interaction" is loosely based on Zimmerman's (2004) four categories of interactivity: 1) cognitive interactivity is a reader's interpretive, psychological and emotional participation with a text; 2) functional interactivity is a viewer's utilitarian contact with the material of the textual apparatus; 3) explicit interactivity is a participant's effective action on given choices or procedures; and 4) meta-interactivity refers to the cultural participation outside of a single work.

Although Zimmerman's categorization primarily concerns different dimensions of interactivity that can coexist simultaneously and are deemed to be of little applicability by Kluszczyński (2014) to explain the digital media, I find this theoretical tool very useful in explaining interactive cinema. Moreover, each type of interactivity in Zimmerman (2004)'s model can be exemplified by a dissimilar mode of interactive cinema in my taxonomy.

Additionally, I try to define "cinema" in a broad sense, meaning that certain digital games, as well as contemporary arts, are also taken into account. The reasons for this are twofold. First, as Gansing (2003) pointed out in his establishment of interactive cinema as an imaginary genre, both computer games and "extended and future cinema" share similar filmic modes of representation. Second, digital gaming and video arts are often considered "more interactive" in nature. Being a "remediation" of established forms of representation, digital gaming is so closely associated with the notion of interactivity that not only do ludologists regard interactivity as its essence, but players also take for granted that gaming is essentially "a more interactive cultural form" (Bolter & Grusin, 2000, p. 87; Crawford, 1984, p. 12; Muriel & Crawford, 2018). Similarly, in contemporary arts, the 1970's "expanded cinema" has evolved into the 1980's video sculpture, and ultimately an ever-increasing prevalence of participatory projects in the 1990s, when a significant number of video artists engaged avidly in the exploration of the potential interplay between artists, viewers, and technology (Meigh-Andrews, 2014, p. 323-324).

Cognitive Mode

Echoing Zimmerman's (2004, p. 158) first category, interactivity, to begin with, can be discovered in the cognitive involvement of the audiences in the process of appreciating a work of art. In this sense, Weiberg (2002) regarded Bazin's champion of the deep-focus cinematography in Welles and Renoir's films as the first step toward interactive cinema, because it was through their design of images that Bazin (2004, p. 35–36) successfully found the "uncertainty" that demands "a more active mental attitude" and "a more positive contribution to the action in progress" from the spectators' side.

Based on this claim, interactive films are those that are able to encourage the viewer to interpret and comprehend the film in their own ways, due to the fact that audiences are conferred with the perquisite to choose what to bring into focus. By comparison, traditional art forms, such as painting, literature or theater, as well as films that belong to the classical Hollywood style, are often marked by fixed perspective and compulsory passivism.

If the devices of long shots and depth of focus are able to stimulate interpretation, the same applies to montage. Eisenstein (1974), a preeminent figure of the Soviet Montage School, compared "attraction" with a stunt: While a stunt signifies an absolute and complete dexterity in itself, the attraction is wholly dependent on the interaction of the viewers. Drawing on Japanese haiku, for example, he illustrated the importance of creating collision between attractions using five "methods of montage," and it is only through the comprehension of the interplay between different graphic elements of shots (direction, scale, volume, etc.), using their inner minds, that the viewers can truly grasp the meaning conveyed by the cinematic apparatus.

In *Strike* (1925), for example, the narrative trope of the clash between the working-class and capitalists does not emerge until the very end of the film. Although Eisenstein seldom refrained from adopting juxtapositions of stimulating and often peculiar images, such as the crosscutting between a massive crowd and a cow being slaughtered, these images, as Dudley (1976, p. 60-64) noted, "remain[...] meaningless" until "the mind creates the links between them through its metaphoric capability." In other words, the underlying theme of replacing a capitalist society with one that the working-class rules are produced by a process of synthetization in which spectators gradually figure out the dominant ideas behind the clash among major visual elements.

Although not everyone shares Eisenstein's view of treating the film as an art machine serving a rhetorical purpose, the encouragement of audience participation became a major trend in post-war European cinema, in which Bordwell and Thompson (2002, p. 358) defined "ambiguity" as its central feature. Michael Cacoyannis' *Stella* (1955), along with many Italian Neorealist and French New Wave films that adopt improvised dialogues, disjointed scenes and open endings, often expected the spectator "to speculate on what might otherwise have happened" so as "to fill in gaps and to try out different interpretations" (Bordwell & Thompson, 2002, p. 358).

Despite the fact that all movies, or even all art forms, possess this cognitive nature to a certain extent, the interactive characteristics brought by Brecht into the theatre can also find their counterparts in the world of films. For example, Wollen (2013) recognized Jean-Luc Godard's films as examples of "counter-cinema," which, rather than conveying the pre-destined ideas of a filmmaker to a submissively receptive audience, "make viewers think actively about the world in a new way" (p. 218). Moreover, whether they were described as *modular narrative films* (Kinder, 2002), *mind-game films* (Elsaesser, 2008) or *puzzle films* (Buckland, 2014), scholars did agree that there exist certain post-modernist movies (e.g., *Memento* [2000] and *Irreversible* [2002]) that clearly intend to perplex their audiences through relinquishment of "suspension of disbelief" – either by adopting an unreliable narrator or distorting temporal-spatial relations – and hence demand a higher degree of shrewdness and sophistication from their beholders.

The same emancipation can be achieved through manipulating a formal system as well, such as the use of a split-screen in *Timecode* (1999) and *D-Dag* (2000). In both cases, viewers are transformed into editors, who are liberated from the passive spectatorship to tailor their own sequences.

Physical Mode

Although cognitive interaction does occur in the process of making meaning, many still see this as not deviating from the traditional viewing mode in which spectators derive pleasure from performing the role of a voyeur. Consequently, as digital video production became increasingly accessible in the 1960s, a significant number of video artists started to explore interaction in physical terms, often through experimenting with massive video installation as well as taking advantage of the surrounding space.

According to Zimmerman (2004, p. 158), "functional interaction" takes place when we come into contact with the material aspects of a piece – for example, the cover of a book. The size, the weight and the raw material of the cover all contribute to our total experience of reading a book. In the scope of interactive cinema, such artifacts find their closest equivalent in video projection equipment, that is, the entire mechanical system that confronts the audiences during film screening. For example, in a comment cited earlier, Juul (2004, p. 136) criticized widescreen for its reminiscence of "cutscene" and "the absence of interactivity." However, these installations can also be utilized by filmmakers to trigger interactions.

Deeming television as one of the most powerful symbols of 20th-century culture and an integral part of our social and technological environment, Nam June Paik, commonly credited as the founder of video art, has committed himself to the TV set as an artistic medium since the 1960s. For *Participation TV* (1963–1966), he developed a special modulation that enables transformation from sound waves into dazzling images. Therefore, when a visitor produces sound into two microphones connected to a monitor, they can obtain graphical feedback from the TV screen. By doing so, the commonplace passive viewers cultivated by the pervasiveness and omnipresence of television culture are turned into active participants who enjoy the freedom to overcome the limitation associated with mass media.

Almost during the same period, American interactive artist Myron Krueger began to experiment with responsive environments. Unsatisfied with the limited degree of interaction between man and machine in the digital era, his *Glowflow* (1969), *Metaplay* (1970) and *Videoplace* (1975) were all structured around computer-based immersive spaces that establish communication among visitor, artist and the piece. In *Videoplace*, for example, not only can users interact with their manipulated images on their own, but also with the images of other users in separate rooms, although these rooms can be thousands of miles away.

As technology advances, installations become more and more sophisticated. In Grahame Weinbren's first installation, *The Erlking* (1982–1985, with Roberta Friedman), visitors could already take on the role of editor, tailoring their own video piece by coming into contact with a CarrollTouch touchscreen. But it was *Sonata* (1991–1993) that pushed the experiment with sensory pads a step forward. The piece, although containing three separate plotlines (Leo Tolstoy's *The Kreutzer Sonata*, *The Book of Judith* and Sigmund Freud's case study of Wolfman) that only associated with each other in a thematic sense, allowed viewers to cross-cut from one story to another at their own behest through tactile input. As is indicated in one of the *Sonata*'s demonstration videos, "touching affects what you see. Different parts of the screen evoke different responses" (Weinbren, 2018).

Another turning point for the development of the physical mode is the invention of a head-mounted display (HMD), since it brought about further integration between the human body and machine. First introduced by Ivan Sutherland in 1968, with two monitors embedded in a pair of glasses and connected to a computer, HMD provides three-dimensional images appearing as though they were perceived by the vision of human eyes. When a player moves their head, a computer calculates and adjusts cardinal points accordingly, resulting in a self-sufficient immersive experience, like walking within a simulated world (Dinkla, 1994).

Today, HMD has become an indispensable component for almost every virtual reality kit, for example, VIVE, Oculus and PlayStation VR, and many interactive films expect viewers to put on helmets and carry out physical actions assigned to them. For instance, with an HTC motion-tracked handset on, those who are watching Taiwanese Director Tsai Ming-liang's *The Deserted* (2017) have to move their head an angle of 360 degrees, so that they can see the whole picture of the frame (if it still exists). Other VR movies call for actions more diverse in form. In *Buddy VR* (2018), for instance, players can engage in multiple forms of physical activity, including moving objects, writing letters and even playing on a drum set.

To some extent, the physical mode best incarnates McLuhan's (1994, p. 42) prophetic description of media as a "prosthesis": When it extends us in terms of physicality, the accompanying "autoamputation" seems inevitable. When Microsoft announced its release of Xbox Kinect, people were astounded by how it "does away with the controller" and "maps the user's body into the screen." Some scholars, such as Gurevitch (2010), even championed it as the future "cinema of interaction."

Having said that, as players project their bodies outward, this, in turn, causes a numbing retreat inward (McLuhan, 1994, p. 41-47). As is noted by Thomas (2015), while everyone was satisfied with their first Kinect experience, they immediately found themselves more inclined to go back to traditional actions or narrative games. Consequently, the sales of Kinect dropped over the years, and Microsoft eventually discontinued its production. Unlike traditional technologies, which only extend our bodies in one specific part, the physical mode reshapes our nervous system in its entirety (McLuhan, 1994, p. 3-4). The difference that is engendered, therefore, is not simply an act of body, but a total change in our apperception. As a radical form that is largely technologically driven, the physical mode still has a long way to go.

Collective Mode

Unlike the previous two modes, the collective mode does not require viewers' direct mental or physical participation; instead, it refers to what Zimmerman (2004, p. 158) meant by "meta-interactivity," that is, the cultural participation of the viewers with a text. In Telotte's (2001) seminal study of *The Blair Witch Project*'s (1999) promotional website, he analyzed how this "secondary project" was premeditated at the very beginning, fit in with narrative construction and eventually played an important role in the film's huge commercial success. Although plenty of films at that time used the Internet as a marketing tool, that of *The Blair Witch Project* (1999) was far more complex as it did not merely provide fundamental information about the movie, but offered also an opportunity for visitors to explore, to amble through and to call in their friends to discover the underlying truth collaboratively as well. It

exploited an ocean of additional information provided by the website, such as the legend of the Blair Witch, the background stories of four "missing" students and even the "evidence" accumulated by the local sheriff.

This use of contextualizing, according to Telotte (2001), not only transformed a fictional work into a pseudo-documentary that recounts a seemingly realistic event with which we are familiar in the real world, but also offered a form of viewing pleasure deviant from the traditional one: It creates "a different context" of watching a film by "inviting a level of viewer interaction." Therefore, it is tenable to argue that the case of *The Blair Witch Project* has shed light on a community aspect of film appreciation: While text itself remains unaltered, the viewing community can produce a different meaning from it because they have immersed themselves in a "non-competitive and affective" game designed for them, either intentionally or unintentionally by the film industry, and therefore are able to establish a different context for analysis and interpretation (Hills, 2002, p. 80).

This interpretative divide is also apparent in *Pirates of the Caribbean: At World's End* (2007), which receives a sound 7.1/10 rating in the Internet Movie Database (IMDb), but a 50/100 mixed review by critics in Metacritic. The gap seems huge: While fans celebrate the film without trouble, critics denounce it for convolution and opaqueness. As stated by Daly (2010), this was due to the fact that considerable information integral to the plotline was revealed prior to the film release in other formats, namely DVD, websites and video games. Filmmakers assume moviegoers have watched them all beforehand, so only those fans who have followed the previous two installments, as well as all the articles, stars and production news from the very beginning, can figure out the characters, plots and special effects within this new installment. Daly went even further, seeing this new aspect of film interpretation as a prevailing viewing mode: "Cinema 3.0" of the near future (Daly, 2010).

Despite the fact that the practice of fandom and cinephilia has a history as long as that of cinema, it had not yet been systematically exploited by the film industry until the late 1990s. One reason for this may be attributed to how widespread the Internet is, which is absolutely a driving factor of the "participatory culture." As Jenkins (2008) observed, in the digital age, viewers have become "hunters and gathers" (p. 21), who actively "seek out new information" and "make connections among dispersed media content" (p. 3). To respond to this shift in media spectatorship, filmmakers passionately espouse "transmedia storytelling," offering a variety of entry points (such as websites, viral advertisements, animated shorts, separate DVDs and even computer games) that consolidate one another.

In the case of *The Matrix Revolutions* (2003), for example, if viewers have not played the massively multiplayer online game *The Matrix Online* (2005), or joined the heated debate erupting on Internet discussion forums before they entered the theater, the enormous pleasure taken from the viewing activity would be undermined. They may find themselves failing to comprehend the basic storyline, as well. In other words, instead of creating a work for viewers to appreciate, the Wachowski's create a world for them to explore (Jenkins, 2008, p. 114). This example upholds Daly's anticipation of "The Interactive-image": "A movie no longer exists as a cohesive, unchanging piece but instead participants in a world of cross-media interaction" (Daly, 2010).

But is this kind of interactivity "extra-textual" and fan-awarded? If not, can we manufacture interactive films of this type by design? It is warranted to attribute the aforementioned interactive aspects to marketing strategy, for they surely belong to what Gérard Genette means by "paratext," that is, a text's accompanying features (Genette, 1997, p. 3–4). However, paratexts do influence our reception of a film (Stam, 2000, p. 208). And even though no one can guarantee that such commitment would offer a return on their investment, they still require the joint efforts from the text (Smith, 1999, p. 68). In other words, the design of a paratext cannot succeed by itself, unless it works collaboratively with the movie. As Telotte (2001) noted, the success of *The Blair Witch Project* is due to the way the website and film functioned together and the fact that they shared similar attractions. That being said, over-manufacturing will backfire on the author's original intention, because fans who are typically characterized by anti-consumerist romanticism may resist the control imposed by popular media (Hills, 2002, p. 109).

Selective Mode

When talking about "explicit interactivity," Zimmerman (2004, p. 158) simply meant the most straightforward sense of the word: the overt participation within a pre-established framework, like clicking a link, pressing a button or choosing an option. What he implied here was that for those interactions, users were directly given choices. In other words, they did not need to wrestle with problems regarding how the mechanism worked, like in *Glowflow* (1969), in which visitors might not even realize the interaction taking place. Rather, the possibilities were reduced to upfront and unequivocal options, and participants simply made a selection, which resulted in an immediate, non-trivial response.

The selective mode often adopts interactive storytelling. In this scenario, viewers are empowered to influence or set up their own stories, either through performing as a character within the story world or issuing commands from beyond (Riedl & Bulitko, 2013). The *Choose Your Own Adventure* book series is a perfect example of this in literature. Popular in the US from the 1980s to early 1990s, the series spanned over 300 volumes, each of which was built around a vast number of decision points, where the protagonist was caught up in dilemmas of all kinds, and readers had to decide his subsequent actions from the two or three options given. Different choices would lead to disparate outcomes, presented in separate pages and followed by succeeding questions, until the reader reached one of the over 40 endings. Another literary form capitalizing on this concept was hyperlink fictions, which even convinced many readers at the time that they were allowed to "create his or her own 'story'" by "'interacting' with 'the computer'" (Aarseth, 1997, p. 14).

In fact, a similar exploration was conducted in cinema much earlier. Nicknamed "King of the Gimmick," William Castle was known for his innovative promotion strategies for selling B movies. When releasing *Mr. Sardonicus* (1961), he proclaimed that the climax of this film could be decided by moviegoers. The result was a "punishment poll" near the end of the film, in which audiences could vote for the villain's fate. Although two options were provided ("punish" or "not punish"), many doubted that the "not punish" ending really existed.

The voting system was later upgraded into a specially constructed moderator in an experimental theater inside the Expo 67 Czechoslovakian pavilion, where Radúz Činčera's *Kinoautomat* (1967) was screened three times per day (Hales, 2014, p. 144). This 45-minute film would stop nine times during the screening, and an actor would appear to request a ballot. Each seat had a joystick of its own, and the audience members could press either the red or green button. The film would then go along with the parallel sequence that had the majority decision, although the ending remained – ironically – the same.

However, the concept of "select and combine" (Anderson, 2004) was not utilized by Hollywood until the 1990s, when *I'm Your Man* (1992) and *Mr. Payback* (1995) both came out as "the first interactive movie" and staged a comeback for the genre. However, theaters may not be an ideal exhibition space for the selective mode, as collective viewing and uninterrupted screening seem to be essentially incompatible with the inner desire for an exclusive, individualized and customized story. As gaming and streaming platforms become increasingly attainable, it is no wonder that recent successful interactive films, including *Heavy Rain* (2010), *The Walking Dead: The Telltale Series* (2012), *Life Is Strange* (2015), *Late Shift* (2016), *Detroit: Become Human* (2018) and *Black Mirror: Bandersnatch* (2019), are all home-based and mobile-friendly.

On the other hand, the selective mode can do away with the narrative, as well. Manovich (1999) proposed "the logic of database" as opposed to that of narrative: While narrative used cause-and-effect chains to arrange unordered events, the database refused to create such an order. What's more, each item in the database had the same significance and could be linked together.

Peter Greenaway, a pioneer of database cinema, developed a preference for a numerical or alphabetic system over a linear narrative and a passion to catalogue the world by means of different objects in his widely celebrated works, such as *The Falls* (1980), *Prospero's Books* (1991) and *100 Objects That Represent the World* (1992). Yet it is his multimedia project *Tulse Luper's Suitcases* (2003-2006) that best matches my description of interactive cinema. Primarily in the form of an online interactive website, it allows players to take a journey around the world in ninety-two (Greenaway's favorite number) destinations, searching for and gathering suitcases that once belonged to Tulse Luper, a fictional character who marvelously witnessed myriad key historical moments from 1928 to 1989 and recorded them using objects that were later stored in these suitcases. Although the found objects advance the narrative to a certain extent, most of them produce only limited implicit meaning. On top of that, while the website is supplemented with three feature films, they are made in the form of pastiche of video clips that will only confound spectators further.

Similarly, in the video game *Her Story* (2015), players find themselves accessing a database that contains an ocean of archived footage related to a murder case. Far from an interactive story set in chronological order, *Her Story* is one in which players have to go through these surveillance videos in a preferred sequence and make meaning of the story based solely on their own conjecture. Players may be nonplussed by this Rashomon-style mystery at the beginning, but the explicit rejection of narrative linearity and artificial choice in fact offer them greater freedom to explore within this "rhizome" (Deleuze & Guattari, 1987, p. 7) or "labyrinth" (Eco, 1984, p. 80-84).

Conclusion

As Foucault (1970, p. xxi) says, "[...] there is nothing more tentative, nothing more empirical (superficially, at least) than the process of establishing an order among things." The significations of interactive cinema may vary a great deal in appearance, but in fact they share more commonalities than differentiations, and what we now perceive as "interactive cinema" can more or less fit into the aforementioned four modes. However, they are not distinct or mutually exclusive; rather, the overlapping of multiple modes can be found in many examples. Although the joystick of *Kinoautomat*, for instance, functions as an agent for shaping the story in the selective mode, it can also serve as an interface to promote physical movement. Similarly, lingering inside a database project, such as interacting with *Tulse Luper's Suitcases* and *Her Story*, not only involves a process imitating puzzle-solving, but sometimes requires a communal effort, as well.

Looking from a temporal dimension, it is not surprising to discover that the emergence of the above four modes follows a generally chronological order: While the root of the cognitive mode can be traced back to the late 1930s, the physical mode developed in the 1960s. The collective mode, in comparison, thrived only after the Internet became publicly available in the 1990s. Despite its early forerunners, the selective mode did not enter the cultural mainstream until recently thanks to the invaluable exploration made by game developers (e.g. Quantic Dream) and streaming platforms (e.g. Netflix).

More importantly, the emergence of a new mode did not render the existing ones obsolete. Conversely, it absorbs interactive features that have been commonly accepted and integrates them into an original form. Take *Detroit: Become Human,* a piece from the newest selective mode, for example. Apart from creating labyrinthine paths and branches that heavily resemble those found in puzzle films, it also heavily adopts Quick Time Events (QTE), that requires players to constantly press buttons in limited time to win the fight scenes. To fully understand the entire story world, players are also encouraged to explore countless alternative story branches or collect hidden Easter eggs implanted deep in each chapter, often through exchanging information with other players.

Consequently, the once-rigid boundaries between various artistic and cultural forms, such as cinema, installation, websites, interactive arts, digital gaming and streaming series, are more blurred than ever – as are those artificial binary oppositions between "watch" and "play," "passive" and "active," and "old media" and "new media." As Kluszczyński (2014) observed: "[...] more and more phenomena on the borderline present the features of two or more disciplines. This hybridization as well as technological and media convergence, multi- and trans-medialization, are additional elements of the media world of today." (p. 133)

It is predictable that in the future, moving pictures will no longer exist as "shadows in the cave," but as interactive multimedia projects that exist as a variety of formats and can be accessed by a diversity of platforms. More importantly, an audience will no longer perform as a shackled prisoner, but as one that has been set free from the chains and dragged out into the daylight.

Acknowledgement

Special thanks to Professors Timothy Murray, Amy Villarejo and Renate Ferro for giving me inspirations during an art theory workshop. This paper is condensed from a longer version due to word limit.

Bibliography

Aarseth, E. J. (1997). *Cybertext: Perspectives on Ergodic Literature*. Baltimore, MD: The John Hopkins University Press.

Adams, E. (1995). *The Challenge Of The Interactive Movie*. Retrieved from http://www.designersnotebook.com/Lectures/Challenge/challenge.htm.

Alexandra, V. D. (2003). *Sociology of the Arts: Exploring Fine and Popular Forms*. Oxford: Blackwell Publishing.

Anderson, S. (2004). Select and Combine. *res magazine*, *52*(3), 53-54.

Bazin, A. (2004). The Evolution of the Language of Cinema. In H. Gray (Ed.)*, What Is Cinema?* Vol.1 (pp. 23-40). Berkeley, CA: University of California Press.

Bolter, J. D., & Grusin, R. (2000). *Remediation: Understanding New Media*. Cambridge, MA: The MIT Press.

Bordwell, D. (2007). *Poetics of Cinema*. London and New York: Routledge.

Bordwell, D., & Thompson, K. (2002). *Film History: An Introduction*. New York, NY: McGraw-Hill.

Bottomore, S. (1999). The Panicking Audience?: Early cinema and the 'train effect'. *Historical Journal of Film, Radio and Television*, *19*(2), 177-216. http://dx.doi.org/10.1080/014396899100271

Buckland, W. (2014). Introduction: Ambiguity, Ontological Pluralism, and Cognitive Dissonance in the Hollywood Puzzle Film. In W. Buckland (Ed.), *Hollywood Puzzle Films* (pp. 1-14). London and New York: Routledge.

Burgos, D. (2019, June 25). *A Brief History of Interactive Film*. Retrieved from http://endcrawl.com/blog/brief-history-interactive-film/.

Cameron, A. (2008). *Dissimulations*. Retrieved from www.metamute.org/editorial/articles/dissimulations#

Crawford, C. (1984). *The Art of Computer Game Design: Reflections of a Master Game Designer*. New York, NY: Osborne/McGraw-Hill.

Daly, K. (2010). Cinema 3.0: The Interactive-Image. *Cinema Journal*, *50*(1), 81-98.

Deleuze, G., & Guattari, F. (1987). *A Thousand Plateaus: Capitalism and Schizophrenia II*. Minneapolis, MN: University of Minnesota Press.

Dinkla, S. (1994). *The History of the Interface in Interactive Art*. Retrieved from http://www.kenfeingold.com/dinkla_history.html

Downers, E. J., & McMillan, S. J. (2000). Defining Interactivity: A Qualitative Identification of Key Dimensions. *New Media & Society*, *2*(2), 157-179.

Dudley, A. (1976). *The Major Film Theories: An Introduction*. Oxford: Oxford University Press.

Eco, U. (1984). *Semiotics and the Philosophy of Language*. Bloomington, IN: Indiana University Press.

Eisenstein, S. (1974). Montage of Attractions: For "Enough Stupidity in Every Wiseman". *The Drama Review*, *18*(1), 77-85.

Elsaesser, T. (2008). The Mind-Game Film. In W. Buckland (Ed.), *Puzzle Films: Complex Storytelling in Contemporary Cinema* (pp.13-41). Oxford: Wiley-Blackwell.

Foucault, M. (1970). *The Order of Things*. London and New York: Routledge.

Frasca, G. (2003). Simulation versus Narrative: Introduction to Ludology. In Mark J. P. Wolf & Bernard Perron (Eds.), *The Video Game Theory Reader* (pp. 221-235). London and New York: Routledge.

Gansing, K. (2003). The Myth of Interactivity or the Interactive Myth?: Interactive Film as an Imaginary Genre. *Proceedings of the Fifth International Digital Arts and Culture Conference*, RMIT, Melbourne, 19-23 May. Retrieved from http://www.designersnotebook.com/Lectures/Challenge/challenge.htm

Genette, G. *Paratexts: Thresholds of Interpretation*. Cambridge: Cambridge University Press, 1997.

Gunning, T. (2006). The Cinema of Attraction[s]: Early Film, Its Spectator and the Avant-Garde. In S. Wanda (Ed.), *The Cinema of Attractions Reloaded* (pp.381-388). Amsterdam: Amsterdam University Press.

Gurevitch, L. (2010). The Cinemas of Interactions: Cinematics and the 'Game Effect' in the Age of Digital Attractions. *Senses of Cinema*, *57*, 4-9.

Hales, C. (2014). Spatial and Narrative Constructions For Interactive Cinema, With Particular Reference to the Work of Radúz Činčera. In R. Kelomees & C. Hales (Eds.), *Expanding Practices in Audiovisual Narrative*. Newcastle: Cambridge Scholars Publishing.

Hassapopoulou M. (2013). *Interactive Cinema from Vending Machine to Database Narrative: The Case of Kinoautomat*. Retrieved from http://www.screeningthepast.com/2013/10/interactive-cinema-from-vending-machine-to-database-narrative-the-case-of-kinoautomat/

Hills, M. (2002). *Fan Culture*. London and New York: Routledge.

Jenkins, H. (2004). Game Design as Narrative Architecture. In N. Wardrip-Fruin & P. Harrigan (Eds.), *First Person: New Media as Story, Performance, and Game* (pp.118-130). Cambridge, MA: The MIT Press.

Jenkins, H. (2008). *Convergence Culture: Where Old and New Media Collide*. New York, NY: New York University Press.

Juul, J. (1999). A Clash Between Game and narrative: A thesis on computer games and interactive fiction. *University of Copenhagen*. Retrieved from https://www.jesperjuul.net/thesis/

Juul, J. (2004). Introduction to Game Time. In N. Wardrip-Fruin & P. Harrigan (Eds.), *First Person: New Media as Story, Performance, and Game* (pp.132-142). Cambridge, MA: The MIT Press.

Kinder, M. (2002). Hot Spots, Avatars, and Narrative Fields Forever: Bunuel's Legacy for New Digital Media and Interactive Database Narrative. *Film Quarterly*, *55*(4), 2–15.

Kluszczyński, R. W. (2014). Interactive Film Within The Paradigm of Institutional Cinema. *Art Inquiry. Recherches Sur les Arts*, *16*, 127-136.

Manovich, L. (1999). Database as Symbolic Form. *Convergence*, *5*(2), 80–99.

Manovich, L. (2002). *The Language of New Media*. Cambridge, MA: The MIT Press.

McLuhan, M. (1994). *Understanding Media: The Extensions of Man*. Cambridge, MA: The MIT Press.

Meigh-Andrews, C. (2014). *A History of Video Art*. New York, NY: Bloomsbury Academic.

Meyer, L. B. (1956). *Emotion and Meaning in Music*. Chicago, IL: The University of Chicago Press.

Muriel, D., & Crawford, G. (2018). Video Games and Agency in Contemporary Society. *Games and Culture*. https://doi.org/10.1177/1555412017750448

Riedl, M. O., & Bulitko, V. (2013). Interactive Narrative: an Intelligent Systems Approach. *AI Magazine*, *34*(1), 67-77.

Smith, G. M. (1999). To Waste More Time, Please Click Here Again: Monty Python and the quest for film/CD-ROM adaptation, in G. M. Smith (Ed.), *On a Silver Platter: CD-ROMs and the Promises of a New Technology* (pp. 58-86). New York, NY: New York University Press.

Stam, R. (2000). *Film Theory: An Introduction*. Malden, MA: Blackwell Publishers, Inc.

Steuer, J. (1995). Defining Virtual Reality: Dimensions Determining Telepresence. *Journal of Communication*, *4*(24), 73-93.

Telotte, J. T. (2001). The Blair Witch Project Project: Film and the Internet. *Film Quarterly*, *54*(3), 32-39.

Thomas, D. (2015). *Rare and the rise and fall of Kinect*. Retrieved from https://www.eurogamer.net/articles/2015-12-16-rare-kinect-rise-and-fall

Weiberg, B. (2002). *Beyond Interactive Cinema*. Retrieved from http://www.keyframe.org/pdf/interact.pdf

Weinbren, G. (2018, April 16). *Sonata.mov* [Video File]. Retrieved from https://vimeo.com/265094385.

Wollen, P. (2013). *Signs and Meaning in the Cinema*. Basingstoke: Palgrave Macmillan.

Youngblood, G. (1970). *Expanded Cinema*. New York, NY: P. Dutton & Co., Inc.

Zimmerman, E. (2004). Narrative, Interactivity, Play, and Games: Four Naughty Concepts in Need of Discipline. In N. Wardrip-Fruin & P. Harrigan (Eds.), *First Person: New Media as Story, Performance, and Game* (pp. 154-164). Cambridge, MA: The MIT Press.

Contact email: frankming@me.com