

# The Digital Game as a Hybrid Medium

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## 1.0 Introduction

Digital games have become a staple in many homes, a major industry and a growing academic field. There are various arguments as to the cause of the rise in academic interest in digital games. These include ties to the rise in economic importance of the digital game business, the rehabilitation of the study of popular culture, the arrival of a generation of scholars who grew up with digital games, and that digital games, unlike games, have non-ephemeral content which can be studied by academics. The growing academic field devoted to the study of digital games sports a wide variety of approaches to digital games. Approaches such as gender studies, game theory, and film studies focus on the content of digital games. Other approaches including anthropology, sociology, and ethnography focus on social interactions among players, players' use of games, as well as gaming communities in and outside of digital games. (Perron and Wolf 332-288). Such approaches partly or entirely ignore the nature of the digital game medium itself. This goes against the words of Canadian media scholar Marshall McLuhan who stated that "[...]the medium is the message" (Understanding 7), meaning that studying the form of a medium is more important than studying its content. Other approaches that focus on a more ontological approach to digital games use the perspective of new media studies or that of influential digital game scholar Espen Aarseth. New media studies examine digital games as computer based manifestations of an older medium, games, and Espen Aarseth examines digital games as "[...]games in a new material technology, just as print novels were literature in a new technology 500 years ago" (Genre Trouble 46; Giddings and Kennedy 129-147).

Arguing that digital games are a medium which should be studied in its own right, rather than as a digitalized version of games into a new material technology, it is the goal of this thesis to offer a different approach to digital games. In order to analyse digital games as a medium this approach will draw on the work of Marshall McLuhan to analyse the digital game medium as a media hybrid between the computer and the game media with the game medium functioning as its content medium. Basing this approach on an inclusive definition of digital games as digital in nature, played on a hardware computer platform that animates and displays parts of the digital game on a

screen and is affected by user input, will allow the study of digital of games as a medium that exists on a wide variety of hardware platforms

The work of Marshall McLuhan garnered a great amount of public attention in the 1960s and early 70s, but was often viewed as controversial and discredited by his academic contemporaries. By the mid 1970s the interest in McLuhan's work had starkly declined, but a revived awareness of the relevance of the McLuhan's ideas from the 1990s onward has shown the remarkable prescience of his work. McLuhan's work focused on examining the formal aspects of media and how they affect their users rather than their contents. McLuhan's concept of hybrid media centers on the notion, that, with the exception of light, "[...]all media come in pairs, with one acting as the "content" of the other, obscuring the operation of both (Understanding 52). Using the hybrid media concept should allow us to place the digital game medium within the larger media ecology. This should allow us to proceed to make a formal analysis of the digital game medium by analysing how the medium draws upon the game and computer media and moves beyond these in order to form a new medium.

This thesis has been divided into seven chapters. Following this first introductory chapter, the second chapter has the goal of ensuring that my analysis of the digital game medium is grounded in a critical understanding in the work of McLuhan. This chapter will begin by briefly discussing the continued relevance of McLuhan's work. It will then introduce the influences and inspirations that affected McLuhan and his work as well as the main points of McLuhan's work. This will be followed by an examination of the main lines of criticism of McLuhan's work as well as how his work has been retrieved during the McLuhan revival. This will form the basis for a discussion of what to keep in mind as I retrieve McLuhan's work in my thesis. The goal of the third chapter of my thesis is to serve as an introduction to the digital game medium containing a definition of digital games, a discussion of the relevance of studying digital games, and an examination of what a hybrid media approach can contribute to the field of digital game studies. These preceding chapters will serve as the background for the fourth chapter that has the goal of providing a thorough analysis of the digital game medium as a media hybrid. This chapter will begin by briefly discussing the moment of hybridization of the digital game medium, as well as introducing the game and

computer media to ensure a certain level of knowledge about the media that hybridized into the digital game medium. This is followed by a section that uses McLuhan's tetrad laws of media as a heuristic device in order to place the digital game in its media ecology as well as to bring attention to subjects that need further examination. These subjects, or points of interest, are then used to structure the analysis of the digital game medium as a media hybrid. The fifth chapter of this thesis contains an analysis of the digital game NHL10. The goal of this chapter is to give an example of how a specific digital game can be analysed as a media hybrid. The sixth chapter has the goal of providing pertinent reflections as to the possible points of criticism that might confront the application of the hybrid media approach to digital games, based on the two preceding chapters. The goal of the seventh and final chapter of this thesis, the conclusion, is to sum up and present the findings of this thesis.

## **2.0 Theory and Methodology:**

This chapter will begin with a brief discussion of the continued relevance of Marshall McLuhan's work. Following this will be an introduction to some of the most important influences and inspirations that have affected McLuhan and his method for studying media. This will serve as a backdrop for a presentation of the main points of McLuhan's work. This presentation of McLuhan's work will be followed by a brief survey of the main lines of criticism of McLuhan's work as well as how it has been retrieved during the McLuhan revival. This will provide the background for a consideration of what to keep in mind as I retrieve McLuhan's work in my analysis.

### **2.1 The Relevance of McLuhan**

The relevance of McLuhan's work seems to be greater than ever. This was not always the case though as McLuhan's popularity, following his rise to fame in the 1960s and early 1970s, saw a decline in the mid 1970s to such a degree that McLuhan's son Eric had problems getting their joint work Laws of Media: The New Science published after the death of his father in 1980. This changed in the late 1980s and 1990s as people began to realise the prescience of McLuhan's work. There were several reasons for this realisation. One of these was the discovery of changes to the cognitive

learning style of children in relation to literacy. This led to speculation that these changes could be related to the impact of new electric media such as TV and computers, which ties into McLuhan's work on literacy and the effects of media change. Another occurrence that brought attention to the remarkable prescience of McLuhan's work was the rise of the Internet in the 1990s and its continued development which seems to have made McLuhan's vision of "the global village", as a world made small and interdependent by simultaneous media of communication, come true. A development that led to McLuhan's appointment to the patron saint of Wired magazine in 1993. These events have spurred a revival of sorts, though some would argue that McLuhan never became obscure enough to require a revival (Jeffrey 358-364; Levinson 188-9; Theall x; Roth 3). The notion that the Internet is the incarnation of McLuhan's vision of 'the global village' also highlights the issue of McLuhan's apolitical stance which does not take into effect such elements as poverty and government censorship that keep large groups of people from being a part of the 'global' village. Such considerations however does not negate the continued relevance of McLuhan's work, and in the introduction to the 1994 MIT Press edition of Understanding Media: The Extensions of Man Lewis H. Lapham states that "Much of what McLuhan had to say makes a great deal more sense in 1994 than it did in 1964" (xi). According to Donald A. Fishman McLuhan has also proven to be far ahead of his time when it comes to the topic of sensory ratios and is now providing an interesting backdrop for studies of media effects in modern neuroscience (Fishman 572-3). In relation to my thesis McLuhan's insights are relevant in that they will provide the tools to study the formal aspects of digital games as an independent medium by analysing it as a media hybrid.

The use of the concept of the 'hybrid medium' offers several advantages over the more commonly used concept of multimedia. The Dictionary of Media Studies defines multimedia as "[...]the combination of different media, for example sound, video, images or computer technology, in one package such as a CD-ROM[...]" (Anderson et al. 151). According to McLuhan a media hybrid is "the interpenetration of one medium by another" (Understanding 51), and since, with the exception of light, "[...]all media come in pairs, with one acting as the "content" of the other [...]" (Understanding 52) all media are media hybrids. Rather than seeing a medium that appeal to several senses as a combination of individual media McLuhan's hybrid media

approach lets us analyse the multimedia as a single medium or technological entity. The hybrid media approach places the medium in relation to the greater media environment and allows us to study how the medium functions as technology and form as well as how it affects its users within the cultural matrix in which it exists.

Another important element adding to McLuhan's relevance to the study of digital games has been noted by Lance Strate who states that McLuhan's chapter on "Games: The Extensions of Man", the only chapter to share the subtitle "extensions of man" with the book, "[...]is possibly the first instance in which the gap between the study of gaming and the study of electric technology had been bridged, and it ought to be foundational for the field of video game studies" (Strate 84). McLuhan's relevance should only become clearer as we delve deeper into his work.

## **2.2. The Man and his Method**

In order to better understand the work of Marshall McLuhan it is advantageous to have a basic understanding of some of the main influences on his work and style of analysis. One such influence is McLuhan's keen interest in the Trivium, the classical educational program of ancient Greece and Rome, consisting of grammar: the thing as it is symbolised, dialectic: the thing as it is experienced, and rhetoric: the thing as it is communicated, which formed the topic for his PhD at Cambridge University. This interest can be seen in McLuhan's rhetorico-poetic style of analysis and is most clearly articulated in the posthumously published Laws of Media. Another influence McLuhan encountered at Cambridge was that of new criticism, a formalist theory which encourages close reading and attention to texts, and values ambiguity. (Theall 4; McLuhan & McLuhan 10-11, 124-7).

Whilst teaching freshmen classes at the University of Wisconsin and St. Louis University McLuhan began to apply his experience with new criticism, seen through his sense of rhetoric and the history of literature, to the analysis of advertisements, comic strips, and similar items as poems in order to teach his students to read English poetry. This work indicated McLuhan's first major step towards the field of new media and communication, and eventually resulted in the publishing of his first book The Mechanical Bride: Folklore of Industrial Man in 1951. This book, now

seen by some as one of the founding documents of early cultural studies, did not have a great contemporary impact, but showed elements of what would become McLuhan's basic method. These elements include what Theall calls McLuhan's use of "[...]poetic methods of analysis in a quasi-poetic style to analyse popular cultural phenomena", which allowed him to study cultural productions in terms of their effects as percepts and affects, and the anti intellectualism present in his style of writing. This anti intellectualism is also expressed in his refusing to call his work theories preferring instead to view it as probes used to uncover the nature of media (Theall 5-7, 29).

In the time between the publication of The Mechanical Bride and the publishing of McLuhan's second work The Gutenberg Galaxy: The Making of Typographic Man in 1962 McLuhan directed his attention more fully towards the study of communications, media, and technology. During this time McLuhan continued to develop his understanding of media, and was influenced by a number of factors including developments in the field of cybernetics and, most notably, his involvement in the creation of an interdisciplinary seminar in Culture and Communications at the University of Toronto. Here he met several figures who would influence his work, including economist and historian Harold Innis, who studied the social and cultural effects of media. (Theall 7-10, 29-32). McLuhan acknowledged Innis as a major influence, going as far as to call his next publication, The Gutenberg Galaxy, "a footnote to the work of Innis" (Wolfe 21).

In The Gutenberg Galaxy, rather than building on Innis' notion of the role of media in changing social organisation and culture, McLuhan built on a minor theme from Innis, namely that media affect our sensory organization. McLuhan combined this idea with anthropologist Edward T. Hall's notion that media extend some element of the human body, to reach the conclusion that media are extensions of man and that any such extensions disturbed all other senses. McLuhan goes on to cover three periods of history: the oral tribal, scribal, and the Gutenberg Galaxy period in "a series of historical observations ensuing upon the 'disturbances', first of literacy, and then of printing" (Galaxy 4). Here he describes the changes in sense perception brought on by literature, which 'detrivializes' oral tribal man, removing him from what he calls the 'acoustic world' into the visual linear world typographic man. He then continues to state that we

have moved into another age in which the instantaneous nature of electric technology is returning man to the auditory world of overall awareness and simultaneity, recreating "[...]the world in the image of a global village"(Galaxy 31).

The media of the electric era was the topic of McLuhan's next and perhaps most famous book Understanding Media: The Extensions of Man from 1964. In this book McLuhan expanded on his ideas the nature of media, including the concept of hot and cold media, and his famous phrase "the medium is the message" (7). The Gutenberg Galaxy and Understanding Media propelled McLuhan to international fame and infamy among his critics. These two books were also by far McLuhan's most influential works and his numerous subsequent collaborative publications mostly added examples and insights into his work. This can be seen by noting that the main concepts of McLuhan's final work Laws of Media, which summed up McLuhan's work into one all encompassing poetic science based on a tetradic model, is found in these two works. The exemption, the concept of retrieval, was added later in From Cliché to Archetype, co written with Wilfred Watson and published in 1970. Although he was often criticised for his celebratory stance towards media and technology it should be mentioned that McLuhan considered himself a technophobe, and studied media in order to understand their effects and to regain control over the media that shape our environments. (Levinson 18-9, Theall 15-6).

### **2.3 McLuhan and the Media Maelstroem**

"Looking about me upon the wide waste of liquid ebony on which we were thus borne, I perceived that our boat was not the only object in the embrace of the whirl"

Edgar Allan Poe, A Descent into the Maelstroem.

The story of Poe's fisherman, who escaped the maelstrom by studying its movements, gave Marshall McLuhan an important metaphor to how to survive as "the world-pool of electronic information movement will toss us all about like corks on a stormy sea."(Playboy 268) Survival is dependent on our standing back from the medium to "discern its principles and lines of force" (McLuhan Under, 15) like Poe's fisherman studied the maelstroem. Thus, McLuhan believes that we can escape the media

maelstrom noting that “there is absolutely no inevitability as long as there is a willingness to contemplate what is happening (McLuhan, Fiore, Angel 25).

Building on the observation of anthropologist Edward T. Hall that all manmade material things are an extension of some specialized part the human body, McLuhan states that all media are an extension of a psychic or physical human faculty. Thus he believes that any human artefact, or extension, can be considered as media, be it tangible ‘hardware’ objects such as cars, forks or computers, or ‘software’ objects, such as scientific theories, painting, poetry or music. He calls these media our second nature, seeing the biological human body as our first nature (McLuhan and McLuhan 3; Theall 75-6). All second nature technological extensions, media, enhance or accelerate some function of the human body, for instance clothing is an extension of the skin for protection against the weather. Technologies, by extending a human sense, affects not only the extended sense, but disturbs all of mans other senses and faculties by disturbing the equilibrium among them. This occurs since a technology is not only an extension but also a self amputation of the physical body. This self amputation takes place in order to immediately relieve the strain on the central nervous system, thus protecting it from overstimulation. The disturbance leads to a change in sense ratios among the organs of the body as well as the other extensions in order to establish a new equilibrium. The extension of any one or more of our senses thus leads to a change in the way we think, act, and perceive the world leaving affecting every part of us. This causes a change of sense ratios in the particular culture in which a sense is outered by a technological extension. This translation of culture takes place as quickly as the new technology is interiorized. McLuhan also states that to observe or use a technological extension automatically means embracing it and allowing the self amputation to take place. There is no way to refuse to comply with the new sense ratios, and by continuously embracing technological extensions we become like servo mechanisms to them. Thus we become “[...]the sex organs of the machine world” (Understanding, 46), like the bee in the plant world, we enable the creation of new forms of media (Galaxy 4, 40-42; Understanding 45-7; McLuhan, Fiore, Angel 26, 30-41).

Another key observation for McLuhan’s vision of media is that media are a kind of word or metaphor that translates knowledge from one mode into another. This notion

comes from Lyman Bryson's statement that "technology is explicitness", meaning that technology is a precise and detailed description, or translation, of sensual knowledge (Understanding 56). The principle of the metaphor, or translation of knowledge, is in man's rational power to translate one sense into another, which is done constantly throughout our lives. An example of such a metaphor would be "[...]the outing or uttering of sense which is language and speech" (Galaxy 5). The medium of speech translates information from the mode of thought, and experience into a form that allows man to both store and transmit this knowledge. Thus speech, like all media, becomes a type of media hybrid. The speech media hybrid is made up of language with thought and experience as its content. McLuhan characterizes the creation of such a hybrid as "[...]a moment of truth and revelation from which the new form is born" which releases hybrid energy and change (Understanding 55). This hybrid medium, the spoken word, was the first technology that allowed man to let go of his environment in order to grasp it in a new way. It is this power to release and grasp in order to expand the human scope of action that gives the media their power (Galaxy 5; Understanding 56-7).

An example of the letting go and grasping of media is the change from preliterate society to literate and typographic society described by McLuhan in The Gutenberg Galaxy. In this book McLuhan describes that in pre-literate societies, in which the spoken word was the main mode of communication, the dominant sensory and social orientation was the ear. This shapes society so that tribal man lives in the acoustic world of the ear. As the sense of hearing is always active, information in the form of sound is constantly and simultaneously heard from any direction. This immerses tribal man in information creating a constant field awareness of the world around him. In the acoustic world hearing is believing, it is the society of myth, music and immersion (Galaxy 18, 44-5; Levinson 44-8).

McLuhan describes how the invention of the phonetic alphabet and scribal culture affected society as the information of speech was translated to writing. This gave tribal man 'an eye for an ear' as the technology of the phonetic alphabet abstracted meaning from sound into visual symbols that represent single sounds rather than syllables or concepts. A hybrid between speech and alphabet technology, dubbed by McLuhan as the most powerful of "[...]the great hybrid unions that breed furious release

of energy and change” (Understanding 49). The change of dominant sense from the ear to the eye changed tribal man into literate, or scribal, man as the phonetic alphabet was interiorized. This led him from the acoustic world, with its instantaneous immersion in information, to a linear visual world where information is conveyed through visual symbols that have to be put together one after another like beads on a string. In The Gutenberg Galaxy McLuhan describes many of the effects stemming from the change in sense ratios caused by the transition from tribal to scribal culture. One such example is that continuity, uniformity and homogeneity became the new mode in Greek logic after these internalised the alphabet. This was later extended into civic and military affairs by the Romans. The highly tactile product of the scribe did not supply the reader with the tools to separate the visual from the audile-tactile, and therefore some effects of the new visual stress remained merely latent (Galaxy).

It was the invention of typography that pushed the new visual stress of the alphabet further than scribal culture ever did by creating the first uniformly repeatable commodity. Print thus functions as the extreme phase of alphabet culture, detribalizing and decollectivizing typographic man, releasing effects such as individuality and nationalism that had been latent in scribal culture. This nationalism rose from the regulation and fixation of languages that took place as the varied scribal language was formed into uniform vernaculars and rendered visible in print. Media, metaphors, or specialized extensions of man do however have a cost, in the sense that they are closed systems, unlike our personal senses which are constantly translated into each other in what we call consciousness. This becomes a problem in what McLuhan has dubbed the electric age (Galaxy).

In the electric age, rather than extending our bodies in space, as we did in the mechanical age, man has extended a live model of his central nervous system into electric technology. This extension has most likely taken place because the automatic amputation or numbing of the extended parts of the body was no longer sufficient to protect the central nervous system from superstimulation caused by the furious amount of hybrid energy and change released by the mechanizations since the invention of printing. By extending our central nervous system into electric technology we see ourselves being increasingly translated into the form of information as we move towards

technological extension of our consciousness. The covering of our body with our central nervous system also results in the translation of the past extensions of our bodies into information. The speed up of information flow to the speed of signals in electric technology and the brain in the electric age means that man has to deal with [...]an instantaneous flow of information from every part of a situation, from every quarter” (McLuhan to Morgan 253). This results in a crisis since our past extensions are specialized closed systems, whereas the instantaneous and global character of co-existence among our technologies in the electric age demands interplay. The speed up of the electric age causes man to live mythically and changes our attitudes towards space and time, as anything that happens to anyone, happens to everyone, making the world seem smaller. Thus electric technology ‘retribalizes’ man as this interdependent single field of experience among our senses “recreates the world in the image of a global village” (McLuhan, Fiore, Angel 67; Galaxy 5; Understanding 42-7, 57-8; McLuhan to Morgan 252-6).

McLuhan also notes that [...]in all communication the user of whatever medium is the content” (McLuhan to Wain 431). When one is on the telephone or ‘on the air’ in TV or radio man becomes a figure without a body, only existing as an abstract image, in other words man becomes discarnate. This is another result of the electric age since “As electric information moved at the speed of light, man is anybody” (McLuhan to Boothe Luce 543). Losing his identity, discarnate man is subject to no natural law and has no basis for morals of any sort. This results in man turning towards violence, which McLuhan sees as a quest for identity (McLuhan to Boothe Luce 543).

The transition from oral to typographic culture is an example of a change from a cool to a hot medium. McLuhan describes that a cool medium, like speech, has low definition and thus demands participation from its user in completing or filling it out. In contrast to this a hot medium, like print, is high definition and thus requires a lower level of audience participation. As mentioned it was the move from scribal technology to print technology that released individualism, nationalism and other effects latent in scribal culture. This happened as typography increased the degree of abstract visual intensity thus ‘hotting up’ the medium of writing (Understanding 22-24).

The distinction between hot and cool media is one of McLuhan's most famous, most misunderstood, and most criticised probes. Drawing on McLuhan's most famous example of hot and cold media, TV, we can say that it seems paradoxical that TV, which uses both audio and image, is considered a cool medium whilst radio, using only audio, is considered a hot medium. McLuhan would explain that the hot or coolness of a medium comes from the intensity with which it engages the senses rather than the number of senses it engages. Thus TV, with its low quality of image and sound, is cool and inviting whereas the higher quality sound of radio makes it a hot medium. The distinction between hot and cool is easier to see when comparing media that engage similar senses, for instance the TV medium is cool due to its low audio and image quality resulting in a high level of user involvement whereas the Movie medium, in the cinema, with the higher image and audio quality, as well as low level of user involvement is hot (Understanding 22-32; Levinson 105-113).

According to McLuhan the hot and cool distinction is not just a way to measure the hot or coolness of one medium in relation to another, but also describes an inherent quality of a medium and its effect on its users. TV is not a cool medium because the movie is a hotter medium, but due to its inherent qualities. Even though the hotness or coolness of a medium depends on its inherent qualities these are not stable and can develop under human use. For example Levinson argues that TV has been 'hotted up' by the addition of larger screens, color and higher image quality, but is still a cool medium. Something which can be argued has changed since the introduction of high definition TV. Other than its low definition McLuhan also describes that TV is a cool medium due to the creation of the TV image via 'light through' the screen rather than the 'light on' technology used at a movie theatre. McLuhan found that 'light through' was more engaging than 'light on' noting that TV projected its images at the viewer making the user into the screen. McLuhan described that the combination of the low quality TV image projected on to the viewer by 'light through' the TV screen creates an image that "[...]has the quality of sculpture and icon, rather than of picture" (Understanding 313). McLuhan sees our participation in filling out the TV image as kinetic and tactile, seeing TV as an extension of the sense of touch. McLuhan explains that the "[...]tactile image involves not so much the touch of skin as the interplay or contact of sense with sense, of touch with sight, with sound, with movement" (A sheet

287). An example of the inherent cooling effects of TV is that a movie shown as content on the cool TV medium becomes a cool experience entirely different from the hot movie experience in the movie theatre. (Understanding 22-32,308-337; Levinson 105-113).

The distinction between hot and cool media appears to be superficial or even arbitrary. McLuhan does not describe any way of determining when a cold medium is 'hotted up' enough to become a hot medium. The example of TV after the introduction of high definition TV can be used to exemplify this problem. TV, described by McLuhan as an example of a cool medium, can now be considered hot since high definition TV screens and signals can be argued to supply a high quality image which means lower user participation. Applying this McLuhan's distinction between the cinema movie as a hot medium and TV as a cool medium it can be argued that a modern cinema screen seems to offer more information, than a high definition TV. But clearly a high definition screen TV supplies the viewer with as much, or more, information than McLuhan's hot 1960s cinema screen. The lack of a clear definition of when a medium is hot or cold means that the use of these terms to distinguish between media seems arbitrary.

McLuhan describes several cultural effects of caused by hot and cool media. The specialist extensions of man, such as money and print, speed up the exchange of information and therefore fragment a tribal structure. In contrast to this, an even greater speed up, such as the one caused by electric technology, serves to retribalize man. This is why what McLuhan calls backward cultures, which have had less contact to specialist mechanical culture, are better suited to understand electric technology our specialist culture. An example of the difference in the affect of media in different cultures is that the use of hot media, such as radio, in cool cultures, such as the tribal or non-literate culture, has violent effects. A medium or a combination of media can also change the temperature of a culture as when hot print heated up scribal culture into print culture, or when TV cooled print culture in the electric age. The temperature of a culture decides which media are acceptable. The hot Charleston was seen as acceptable in rapidly industrialising Russia whereas the cool twist was taboo. Hot cultures can provoke the emergence of cool media and vice versa (Understanding 22-40).

McLuhan describes that any medium “[...]pushed to the limits of its potential reverses its characteristics and becomes a complementary form” (McLuhan and McLuhan 107). He builds this on Kenneth Boulding’s statement that any medium has a ‘break boundary’ at which it suddenly changes into something else or passes a point of no return in its dynamic processes. As an example McLuhan mentions that the car reverses into the traffic jam, and that money reverses into the lack of money that is the concept of credit and credit cards. McLuhan mentions that a common cause of reversals is the cross-fertilization with another system. For example when radio met the movies and created the ‘talkies’. In the realm of cultural development the speed up of the mechanical age into the electric age creates an implosion of energy. This implosion clashes with the traditional expansionist patterns of organisation from the mechanical age and creates tension as “We look at the present through the rear view mirror[...]” and “[...]March backwards into the future” (McLuhan, Fiore, Angel 74-5). In the electric age when information moves with the speed of the signals in our outer central nervous system, bypassing space and time, all earlier forms of acceleration, including road and rail become obsolesced (Understanding 33-40; 89-105; McLuhan and McLuhan 102-111, 148).

The obsolescence of a medium is not the end of anything; on the contrary it is the returning of the media to what McLuhan calls the ‘rag-and-bone shop’ of culture that makes up the matrix of all innovation. McLuhan uses the terms cliché and archetype to describe this process. Taking for granted that there is a constant interplay between the world of percept and concept he notes that “Anything that can be observed about the behaviour of linguistic cliché or archetype can be found plentifully in the nonverbal world” (McLuhan and Watson 20). He describes how the tribal and the modern notions of cliché and archetype have merged in the electric age. As the electric age retribalizes man it is natural for us to resume to the magical view of language of tribal man. This happens as past cultures become available to us through almost instant retrieval which causes us to again live mythically and in depth, seeing the past as a part of our present lives. When we examine these ancient clichés through the rear view mirror of our literate past, we come to see them as literary archetypes. A definition of literary archetypes is offered by Northrop Frye who defines an archetype as “a symbol, usually an image, which recurs often enough in literature to be a recognizable as an

element of one's literary experience as a whole" (Quoted in McLuhan and Watson 118). This definition describes archetypes as human artefacts produced by repetition, meaning that archetype is a type of cliché. Thus we can say that through the means of complete retrieval in the electric age the formerly obsolesced ancient clichés are retrieved as archetypes. McLuhan sees a description of this process of obsolescence and retrieval in W.B Yeats' poem The Circus Animals' Desertion. The poem is a rehearsal of Yeats' career. In this poem Yeats sees himself as an old man. He has placed himself on the scrapheap, but first he rehearses all the clichés of his art, all the innovations that he had introduced into the poetry and drama of his time. Having reviewed his accomplishments he goes on to state that the building blocks of all of these innovations and experiments are retrieved from what McLuhan dubs 'the rag-and-bone shop' to which he has now returned. Keeping in mind the interplay between concept and percept, we can then say that an archetype, an old cliché retrieved by a new one, is a retrieved or "quoted extension, medium, technology, or environment, an old ground seen as figure through a new ground", figure being the area of attention and ground being the larger area of inattention (McLuhan and McLuhan 103-4; McLuhan and Watson 18-23, 117-130).

The process of retrieval is more than the bringing back of old clichés from the 'rag-and-bone shop'. Some translation is needed to put the retrieved cliché, archetype, back in relation to the new ground to which it is retrieved. Older clichés are retrieved in two ways; as inherent principles which inform the new ground, such as when electric technology retrieves tribal man's acoustic space in a different form because our ground includes remnants of literate culture, and as archetypal nostalgia figures, such as when the horse and buggy, obsolesced by the car, is being retrieved with new meaning in the 'Western' movie genre. The cliché is incompatible with other clichés, but the archetype is cohesive and other archetypes stick to it. When we consciously retrieve an archetype, we unconsciously retrieve others. By quoting one archetype, we also quote the archetypes we leave behind and, noting that an archetype is a quoted awareness or consciousness, these unquoted archetypes can be seen as what Jung calls the archetypal unconscious (McLuhan and Watson 18-23; McLuhan and McLuhan 103-108).

The automatic amputation, or numbing, of the senses that occur when a technological extension of our body, a hybrid media, is created prevents us from

discovering the nature of the medium. We merely notice the content medium which works like “[...]the juicy piece of meat carried by the burglar to distract the watchdog”(Understanding 18). McLuhan describes the overwhelming nature of media by stating that “It’s like the fish in water. We don’t know who discovered water but we know it wasn’t a fish. A pervasive medium is always beyond perception” (McLuhan’s Wake). Media will thus always function as prisons without walls that we subliminally and docilely accept unless we actively decide to use the technique of suspended judgement to study the media maelstrom and escape, like Poe’s fisherman. The technique of suspended judgement, according to McLuhan, gives us the possibility to reject the numbing effect of new technology and postpone the interiorization of the new medium. McLuhan believes that artists are able to adjust our sense rations by intuiting and interpreting the nature of the present unavailable to us, and thus allow us to become immune to the subliminal effects of media (Understanding 18-20,41-57,60-73).

As we have seen media “[...]shapes and controls the scale and form of human association” (Understanding 9), and it was this observation that lead McLuhan to conclude his most famous aphorism ‘the medium is the message’. This attempt to call attention to the importance of noticing and studying the way in which media shape our everyday lives as we use them was misinterpreted by many to mean that content did not matter at all. An example of this is the quip of critic Hugh Kenner stating that “[...]if content is negligible, so are facts” (Kenner26). This misinterpretation, however, is far from true. Content is essential to media as “The effect of any medium is made strong and intense just because it is given another medium as its ‘content’“(Understanding 18). Even as McLuhan explains how electric light is the only medium without a message, a medium of ‘pure information’, he remarks that what the electric light illuminates can be considered its content, since it is made possible by it. If this argument is reversed it could be said that without content the light would be irrelevant, just as the speech would be irrelevant if there was no thoughts to be uttered or outered. Thus McLuhan did not ignore the importance of content, but focused on the insight that “[...]it is the framework itself that changes with new technology, and not just the picture within the frame (Understanding 219), and on working out his approach that considers not only the “content” but the medium and the cultural matrix that the medium operates in.

In his posthumous work Laws of Media McLuhan summed up his work into a tetrad consisting of four general and verifiable questions that can be asked about media. The four questions were: 1. What does it enhance or intensify? 2. What does it render obsolete or displace? 3. What does it retrieve that was previously obsolesced? And 4. What does it produce or become when it is pressed to an extreme? The first question of enhancement clearly concerns McLuhan's notion of media as extensions of man, examining which human faculty is extended by a medium. The second question concerns the concept of obsolescence namely that any medium obsolesces an older medium. The third question has to do with McLuhan's concept of retrieval; asking which obsolesced cliché(s) the medium retrieves as archetype. The fourth question deals with McLuhan's concept of reversal of the overheated medium and asks what the medium reverses or flips into. McLuhan notes that the four elements of the tetrad are complementary and functions simultaneously rather than sequentially. Enhancement and obsolescence are clearly complementary actions, since any new idea or tool pushes away the older way of doing things by allowing things to be done differently. Retrieval brings back these obsolesced clichés in a new form, and when the medium is pushed to its limits it reverses into a new medium which in turn enhances, obsolesces, retrieves and reverses (McLuhan and McLuhan 4, 99-111).

## **2.4 Criticism and Revival**

Before proceeding to see how McLuhan's work can be used as tools for analyzing the digital game medium as a media hybrid it is pertinent to survey the main lines of criticism of McLuhan's work as well as the work done in the so called McLuhan 'revival'. This should be done in order to be aware of the strengths and weaknesses of McLuhan's work. British cultural studies scholar Nick Stevenson notes that "In cultural and media studies, his ideas were first warmly welcomed as making a breakthrough in articulating some of the dimensions of the emergent electric culture" (Stevenson 114-5). However, this warm welcome soon turned cold as McLuhan became the target of a wide range of criticisms from across academia. It is not within the scope of this thesis to cover all of the criticism of McLuhan's work or the equally plentiful and diverse uses of his work that can be seen as a part of the McLuhan 'revival'. Therefore I

have chosen to focus on four main lines of criticism as well as some of the most important developments and works of the McLuhan revival.

The first of the main lines of criticism comes from the field of cultural studies and two of the founders of British cultural studies Raymond Williams and Stuart Hall, as well as James W. Carey, an important figure in US cultural studies. Their criticism is especially important since it came to set the tone regarding McLuhan's work in cultural studies and beyond. Williams initially gave McLuhan's The Gutenberg Galaxy a mixed review; agreeing with the emphasis on media as a social factor and their effect on perception, but criticizing what he perceived as McLuhan's isolation of the print media as a causal factor in social development. Later Williams' view of McLuhan hardened into a total dismissal of McLuhan's work describing it as an ahistorical formalist analysis of media, and labelling McLuhan as a technological determinist. He argued that McLuhan desocialized media by treating them as psychic adjustments, thus making intention and content irrelevant. By eliminating social controls of media, he argued, the only possible response would be to let the media run itself. Stuart Hall criticized McLuhan for turning away from his critique of technologies in The Mechanical Bride and assuming a celebratory stance towards new technologies. Comparing this stance to postmodern 'ideologues' such as Jean Baudrillard, he calls McLuhan a 'precursor-prophet of postmodernism' (Grosswiler 131-4). James W. Carey compares McLuhan's work to that of Harold Innis, and notes that whilst these both agree on the centrality of communication technology they differ in the type of effects they see coming from this technology. McLuhan saw effects on sensory organization and thought unlike Innis to whom media affected culture and social organization. Carey argued that McLuhan had "[...]taken a relatively minor but recurring theme in Innis' work (perhaps only a suggestion) and made it central to his entire argument"(Carey 281), and noted that even though the two are both technological determinists Innis, as opposed to McLuhan, was a soft determinist. Having thus labelled McLuhan as a hard determinist Carey goes on to describe McLuhan's work as a "[...]secular prayer to technology, a magical incantation of the gods, designed to quell one's fears that, after all, the machines may be taking over"(Carey 303). The influential criticism of Williams, Hall and Carey had set the tone for cultural studies in Britain and the US as well as for communications studies in America and discouraged direct reading of McLuhan's work, but McLuhan had other

prominent critics as well including semiotician Umberto Eco (Carey 270-308; Grosswiler 134-5, 187).

The criticism from semioticians such as Umberto Eco makes up the second main line of criticism of McLuhan's work. Semioticians would be expected to be critical of formalists like McLuhan due to their focus on social and individual interpretation of content. Eco calls McLuhan's theory apocalyptic, vehemently disagreeing with McLuhan, who in Eco's interpretation believes that when mass media triumph, Gutenberg man dies and a new man who perceives the world differently is born. He describes that McLuhan's theory implies that that media do not transmit ideologies, but are ideologies themselves. A position he believes would have tragic consequences since it transmits a worldwide call to narcotic passiveness. Eco also contends McLuhan's statement that the medium is the message, arguing that the audience can interpret any message differently based on their residual freedom. According to Eco McLuhan overlooked different links in the communication chain, by which he meant the source, the transmitter, the signal, the channel, and the receiver who transforms the signal into a message for the addressee, using the term media interchangeably to mean the form of the message, the channel, or the code. Eco argues that media does not translate experience into new forms because it is a metaphor, but because it carries a code. As a final criticism Eco notes that if McLuhan is arguing for a total and new dimension of thought then books cannot be written. Instead the challenge is to translate these new dimensions of sensibility and intellect into the language of the book medium (Grosswiler 135-8). The criticism of McLuhan was not limited to cultural studies and semiotics, his work was also criticized within mainstream communications research.

The third main line of criticism directed towards McLuhan by social scientists within communications research. Other than the charges of media determinism levelled by Carey, criticism was directed at McLuhan's 'unscientific' method. McLuhan's work was not set up to be verified or rejected through empirical tests, and thus flew in the face of the norms of communications researchers who had built mass communications theory on the basis of empirical study. This prompted Raymond Rosenthal to state that McLuhan's work "[...]are not scientific in any respect; they are wrapped, however, in the dark mysterious folds of the scientific ideology (Rosenthal 6). Richard Kostelanetz

writes that McLuhan's work is "less committed to traditional precision; [and] perhaps more metaphoric than accurate" (Kostelanetz 222) and Christopher Ricks raged against McLuhan for having "[...]no respect for the evidence of history"(Ricks 102). Ricks and others also raged against McLuhan's claim that his mosaic style approach allowed him to be neutral whilst his vocabulary was seen as positive or even celebratory on behalf of the new electric media. To complete the near all encompassing criticism within communications research, Marxist communications theorists, who were weary of the quantitative positivist methodologies that McLuhan was criticized for avoiding, rejected McLuhan for being apolitical and leaving global capitalist relations undisputed and for being totalitarian (Grosswiler 182-3).

The fourth main line of criticism against McLuhan sounded broadly across the spectrum of criticism mentioned above and is directed at McLuhan's style of writing. Anthony Quinton calls McLuhan's style a "[...]shapeless and enthusiastic technique of almost random accumulation [...]" sneering at McLuhan's claim to be producing a non-linear mosaic argument stating that "In fact he is producing a linear argument, but one of a very fluid and unorganized kind" (Quinton 191). Some such as Michael J. Arlen argued that McLuhan's style closed off discussion and critical thought, and others like Nathan Halper compared McLuhan's style of presentation to that of an ad, noting that this ensures that "[...]If you say it fast enough – if you keep repeating it – and, if you do this with a smooth and confident air, nobody will stop to wonder if there is any merit to whatever you are saying" (Halper 70). This line of thinking seems to be supported by Douglas H. Schewe's analysis of McLuhan's use of rhetorical devices in Understanding Media which concludes that "The largest portion of the book, 98 percent, utilized propaganda devices for presentation of the author's theories" (Schewe 167). In spite of the severe criticism directed at McLuhan from various parts of academia, his ideas and style attracted journalists, artists, and public intellectuals outside academia and dissidents within it. His work, though seeming to have fallen from popularity in the 1970s and 1980s, has proven itself to be remarkably prescient and has undergone what some would call a revival in recent years (Arlen 82-6; Halper 58-81; Quinton186-198; Theall 6).

The label of technological determinism stuck to McLuhan even as his ideas and terminology worked its way into academia before the process of a more open

reassessment and rehabilitation of his work began. Grosswiler argues that McLuhan's ideas and terminology worked its way into academia through work such as that by cultural studies scholar John Fiske and historian Daniel Lowe who both adapted the orality-literacy typology of Walter Ong who had been a graduate student under the tutelage of McLuhan. Grosswiler sees clear, yet unattributed, similarities to McLuhan in Fiske's application of this typology to TV as well as his notion that programs within the oral form of TV tend to lean towards either literary or oral content. Moving beyond this level is John Hartley, who describes McLuhan as an 'institutional ancestor' of cultural studies, as well as Ien Ang and Roger Silverstone who utilize and cite McLuhan's work and describe him as a minor intellectual. Grosswiler notes that these early steps towards a reappraisal and rehabilitation of McLuhan still saw his work through the criticism of Williams and Carey. This would change through the work of cultural sociologist John B. Thompson and British cultural studies scholar Nick Stevenson (Grosswiler 138-143).

Thompson and Stevenson both move beyond the initial labelling of McLuhan as a media determinist. Thompson utilizes McLuhan's notion that media-forms shape social life, since technology creates different environments for action and interaction, as one of the three foundations of his work focusing on narrower examinations of media than McLuhan. Stevenson however, goes a step further to "forcibly suggest that his work be critically re-evaluated by students of the media (Stevenson 115). He finds that the accusations of media determinism have some validity but have been overstated, and notes McLuhan's ideas of hybridity, time and space restructuring and implosion can contribute to social theory. Stevenson does not set out to revive McLuhan's work without criticism, but criticizes McLuhan for believing that the implosion of the world as a result of electric media has destroyed time and space as meaningful constructs. He also criticizes what he sees as an exaggeration of the democratizing effects of TV in McLuhan's work and, whilst giving McLuhan credit for drawing attention to the relationship between media and the public sphere, states that even though he believes that McLuhan's arguments about the public sphere are mostly misguided. Stevenson also criticizes McLuhan for neglecting the role of mass communications in production, in the production of symbolic meanings, and the maintenance of dominant social relations in his theory. He compares this attitude, as well as McLuhan's supposed

celebratory attitude towards media, to postmodernism, and more specifically the work of Jean Baudrillard (Grosswiler 143-8; Stevenson 114-143).

The parallels between McLuhan and postmodernism have been noted by several others with various interpretations, and Grosswiler notes that this connection to postmodernism might account for the greater acceptance of McLuhan's work. An example of this is that John Fekete, a staunch critic of McLuhan who invented the term 'McLuhanacy' to describe McLuhan's work and popularity, changed his criticism of McLuhan to see him as a forerunner of postmodernism and poststructuralism. Postmodernist theorists vary in their readings of McLuhan as well as in their descriptions of postmodernism (Grosswiler 155-57).

One way of defining postmodernism is in relation to modernism as is done by John Walker. Walker gives a thematic of typology of modernism as "[...]an aesthetic ideology that dominated Western culture for 125 years until its eclipse in the 1960s"(Grosswiler 158), and proceeds to compare the thematic typologies of modernism and postmodernism. Walker describes modernism in the arts and media as having five elements. The first element that Walker attributes to modernism is that modernism embraces the new age of machines and technologies and creates new forms of expression. The second element of modernism is that it completely separates itself from the past and values originality and novelty. The third element of modernism is the rejection of decoration and ornamentation in favour of geometric forms that imply rationality, simplicity and uniformity. Walker's fourth element of modernism is the rejection of local or national styles in favour of one universal style. The fifth element of modernism is that it describes itself as art for the future, and that artists see themselves as engineers of a new world. He contrasts this typology of modernism to that of postmodernism in the arts which he describes as a "[...]half-way house between the past and an unclear future" (Grosswiler 158). Walker also attributes five elements to postmodernism. The first element is that postmodernism, opposed to modernism, rejects one universal style and prefers a plurality of styles and hybrid styles. The second element is that postmodernism revives traditional and historical styles in parodies and quotations. The third element which Walker attributes to postmodernism is that it permits ornament and decoration. This is connected to the fourth element which is that

postmodernism values ambiguity, and complexity whilst rejecting the simplicity, order and rationality valued in modernism, and that the blending of fine and popular art is favoured in offering multi-layered readings. The fifth element of postmodernism is that it values references to other works in arts such as through the notion of intertextuality. (Grosswiler 158-62)

Relying on Walker's definition of modernism and postmodernism we find that parallels to both can be seen throughout McLuhan's work. McLuhan would oppose the desire of modernism for a modern style representing a modern age, but embraces a new age of technology in which form decides function rather than vice versa. Modernism's rejection of national styles in favour of an international style can be compared to McLuhan's notion that nationalism is irrelevant in the electric age, but McLuhan does note that minority voices are harder to ignore in the global village. McLuhan would disagree with the desire of modernism for a complete break with the past since he sees the past as being constantly retrieved as the near past becomes obsolesced. He would agree however, with the modernist notion that the artist knows best and is creating art for the future, stating himself that the artist is the 'antennae of the race' who have the ability to prepare us for the sense ratio changes brought on by media. Modernist values of clarity, simplicity, uniformity and rationality fits McLuhan's vision of the typographic world whilst McLuhan, like postmodernism, values complexity, contradiction and ambiguity, which replaces simplicity and uniformity in the acoustic age. McLuhan's vision of acoustic space includes a textually rich plurality of styles and hybrids which play a key role in the creation of new media similar to the rejection of one all encompassing style found in postmodernism. The postmodern revival of historical and traditional styles in quotations, parodies, retro-styles etc. can be compared to McLuhan's notion of retrieval in which obsolesced technologies become the 'rag-and-bone shop' of clichés to be retrieved and used in the creation of new technologies. The concept of intertextuality, in which any "literary text or work of art relates to, alludes to or comments on ... various other works" (Grosswiler 160), can be compared to McLuhan's concept of retrieval as well as his mosaic method of examining media in the context of other media and seeing the relations between social and media change (Grosswiler 155-162).

The parallels between McLuhan's work and both modernism and postmodernism have inspired various readings and uses of McLuhan's work. One such reading and use of McLuhan's work is carried out by French postmodernist Jean Baudrillard. Baudrillard both rejects and accepts McLuhan. He criticizes McLuhan for ignoring social influences and for his positive attitude towards the media, but agrees with McLuhan that the social effects of media are caused by their formal characteristics. He then goes on to extend on several of McLuhan's concepts changing them quite dramatically. For Baudrillard the medium and the message collapse into 'simulations' and 'simulacra' in hyperreality, ending the existence of both as they merge into an indecipherable form. He also collapses the difference between sender and receiver as the end of linearity means the rise of circular discourse that incorporates sender and receiver without distinguishing between them. Baudrillard also uses the concept of hot and cool, but to him all media become cool media thus eliminating the hot and cool distinction. Baudrillard sees media not as extensions of man, but instead inverts McLuhan's idea, stating that human beings become terminals for the imploded media (Grosswiler 169-178).

Another proponent of postmodernism Charles Jencks finds McLuhan useful in distinguishing between modernism and postmodernism. Jencks describes a three part historical schematic, similar to that of McLuhan, dividing history into a pre-modern, a modern, and a postmodern era. In the postmodern era, beginning in 1960, the manufacturing of products is superseded by the production and servicing of information, class relations of the modern era are reversed, and time ceases to be linear as world events speed up in a chain reaction where cultural systems change so quickly that they become identified as fashion as increasing amount of information is processed faster and faster. Jencks description of the postmodern era has clear parallels to what McLuhan calls the electric age, or the information age, when focusing on the importance of information, and the acoustic age when focusing on the changes in our perception of time and space. Jencks' historical classification classifies McLuhan as a postmodernist, even though Jencks classifies McLuhan's sources, including Eliot Joyce, as belonging to what he categorizes as 'agonistic' and 'heroic' modernism. The category of 'agonistic modernism' covers the notion of the subversive role of the artist and 'heroic modernism' covers the attempt to overcome the dualism between emotion

and cognition which Jencks considered to be examples of late modernism rather than postmodernism (Grosswiler 155-172).

Jenks' classification of McLuhan as a postmodernist goes against the work of George Willmott who in his book McLuhan, or Modernism in Reverse argues that McLuhan's "media formalism is continuous with the formalist aims of traditional aesthetic modernism with except that this modernism is, in McLuhan's hands, *reversed* from an alienated form of aesthetic experience into the totalizing form of cultural experience which grounds it"(Willmott 207). Willmott argues that McLuhan's work is a cliché in the rag-and-bone shop of history. He sees McLuhan as an important, but repressed link in a generation of modern and postmodern critics that is not "[...]idiosyncratic; he must neither be forgotten, nor, worse, be rediscovered as a practical critical ideology. Rather he must be understood as a vital if repressed link in a generation of modern and postmodernist critics" (Willmott 207). Willmott places McLuhan within a broad scholarly context in order to somewhat negate previous criticism, and draws on McLuhan's use of modernist aesthetic methods to analyse media and culture to link modernist theories to postmodern cultural phenomena (Willmott, Shaw).

In his book his book Method is the Message: Rethinking McLuhan through Critical Theory Paul Grosswiler synthesizes McLuhan's approach with Marxism, critical theory, and cultural and communication studies in order to overcome the antagonism between Marxists and McLuhanites (Grosswiler, Shaw). Other approaches such as Paul Levinson's in Digital McLuhan: A Guide to the Information Millennium puts McLuhan's probes to work, whilst building on these to create their own theory of media.

Donald F. Theall warns against approaches building on McLuhan stating that those who try to develop McLuhan's project "[...]were, if his contemporaries, seldom, if ever, able to replicate the complexity of his 'poetic' vision and, if after him, generally unable to appreciate the contradictory complexity of the currents that produced him" (Theall 32). Theall also takes issue with those who see and use McLuhan's work as theory, referring to McLuhan's own refusal of this. Instead he believed that McLuhan

should be viewed as a creative communicator, an essayist, and a poet whose probes are poetic insights which generate further probes through their resonance. Theall states that since McLuhan's probes are poetic percepts they do not have identical meaning as one moves from artefact to artefact, and McLuhan's work has weaknesses when used as fact or formula rather than insight and intuition. Theall states that McLuhan saw his foremost contribution as showing that a "[...]grammatico-rhetorical, allegorical, and poetic method for dealing with media and other new artefactual technologies was critical to providing people with a still point of observation and a complex, paradoxical interpretation, by which to avoid the maelstroem" (Theall 212-3, 21-80, 95-108, 212-4).

## **2.5 Retrieving McLuhan**

The criticism, revival, strengths and weaknesses of McLuhan's work must be considered as I retrieve it in order to use it as a tool to analyse the digital game medium as a media hybrid. Unlike Theall, I believe that it is not only possible, but also highly advantageous, to apply the insights gathered from McLuhan's probes to further analysis. I agree with Theall that it is necessary to keep in mind the complexity and depth of McLuhan's work in order to gain knowledge and avoid oversimplifications which would harm my analysis. Keeping in mind the criticism of McLuhan's work I would defend McLuhan against charges of media determinism. This might seem odd considering his notion that there is no way to refuse to comply with the new sense ratios instituted by media and his description of humans as "[...]the sex organs of the machine world" (Understanding 46, 45). I base my defence on the fact that the goal of McLuhan's work was to make people aware of the influences of media on their lives in order to help them save themselves from the maelstrom. The answer is to be found in becoming aware of the effects of the media and eventually change the fact that media are "[...]put out long before they are thought out" (Understanding 49) which is what tends to prevent us from recognizing their effect. The key to human agency thus lies in one of the statements that seem the most deterministic since as the 'sex organs of the machine world' we can control when media are created or 'outered' and wait until we have thought out their effects. As McLuhan states "The computer can be used to direct a network of global thermostats to pattern life in ways that will optimize human awareness" (Playboy 263). This would be done by having computers regulate the media

available to us. Another point of criticism, namely that of McLuhan's apolitical stance and his lack of awareness of power structures, is irrelevant to this thesis as the purpose is to study the medium and its effects rather than the power structures involved in the production and consumption of digital games.

In the chapter analysing of the digital game medium as a media hybrid between the game and computer media I will begin by briefly describing the moment of hybridization which McLuhan describes as a "[...]moment of truth and revelation from which a new form is born"(Understanding 55), and define the game and computer media. This will form the background for a section using the four questions that make up McLuhan's tetrad laws of media as a heuristic device in order to place the digital game medium in the media ecology, and narrow down specific elements that should be analysed further.

The first law of McLuhan's tetrad poses the question "What does the artefact enhance or intensify or make possible or accelerate?" (McLuhan and McLuhan 99), and taking my departure in this question I will examine what is intensified in the digital game medium, how this enhancement is achieved in the new medium, and which effects this has on the users. Taking my departure in the second law of the tetrad, which asks: "What is pushed aside or obsolesced by the new 'organ'?"(McLuhan and McLuhan 99), I will examine which medium or media are obsolesced by the digital game medium. I will do this since I believe this could play a role in relation to the third law of the tetrad which asks the question "What older, previously obsolesced ground is being brought back and inheres in the new form?" Based on this question I will examine which obsolesced clichés the digital game medium brings back, consciously and unconsciously, and what role these play in relation to the digital game medium and its effect on its users. The fourth law of the tetrad asks "What is the reversal potential of the new form?" and will lead to an analysis of what the digital game medium could reverse into when pushed to the limits of its potential (McLuhan and McLuhan 99).

Before embarking on an analysis of the digital game medium, I will briefly develop the importance of examining digital games as a media hybrid, as well as explain my grounds for choosing the definition 'digital game' to describe the medium.

### 3.0 Digital Games

Before proceeding to analyse the digital game medium as a media hybrid it is important to first define exactly what is meant by ‘digital game’, why this field of study is relevant, and what an approach that analyses digital games as a media hybrid can add to this field.

#### 3.1 Definition

In the academic world terms such as computer games or video games are often used, mostly interchangeably, to describe the object of study. However, I would suggest that a better, more inclusive, definition would be ‘digital games’. The computer game and video game definitions stem from the main platforms on which digital games have been played in the past, but this seems to ignore the multitude of hardware platforms on which digital games are played and the various platforms on which they may be played in the future. Thus the very use of such definitions seems to exclude parts of the field of study even as these should be, and are, studied under these definitions.

The definition ‘digital games’ on the other hand covers a wider range of different consoles or ‘formats’ from the PC and consoles, such as the Nintendo Entertainment System, the Sony Playstation 3, and the Xbox, to video arcade games and portable game platforms, such as the Gameboy, the Nintendo DS, various cell phones etc.. The main commonality shared by these is not the various technological ‘hardware’ platforms on which they are played, but their digital software nature. This software carries the programming code which allows, or one might say instructs, the computer to generate the gameworld as well as the rules that govern the interaction between the player and this gameworld. This digital software nature means that the digital game medium can be said to exist independently of hardware. In fact, most digital games today are sold on separate storage media to be inserted or installed on the game platform for use, rather than being preinstalled or hardcoded into the hardware. Such a statement would be supported by the fact that many digital games exist for several different consoles; for instance EA Sports’ FIFA Soccer 10 is available for the Xbox360, Playstation 2, Playstation 3, Nintendo Wii, Playstation Portable, Nintendo DS and the Personal Computer (FIFA Soccer 10).

The assumption that digital games exist independently from the hardware platform is only partly true since digital games such as FIFA Soccer 10, for the various consoles is inherently different in order to adapt to the differences in computing power, screens, and controllers of the hardware platforms on which it is played and the media on which it is stored. These differences range from differences in the graphical realism of the gameworld to differences in controls. For instance the versions for the Playstation 3 and the Xbox 360 include a 360 degree dribbling feature not available on the PC, which has similar computing power but different controls, or the Playstation 2, which has similar controls but less computing power. The level of difference varies from console to console, but the central elements of the gameplay are the same (EA.Com FIFA). The differences between FIFA Soccer 10 for the various platforms show the close link between the hardware platform on which digital games are played and the digital games themselves. This sentiment is shared by Andrew Hutchinson whose study of the effects of technological developments on the game aesthetics of the games in the Myst and Doom series' show that "[...]the technical limitations at the time of a game's creation have an enormous impact on the overall aesthetic of any specific game" (Hutchinson). Despite the technological differences between the various platforms on which digital games are played and the close affinity between platforms and digital games, digital games have more in common than their digital nature. Other common traits, regardless of hardware platform, seem to be that the digital game is displayed on a type of screen and is affected by a form of user input. The definition of a digital game would thus be that it is digital in nature, played on a hardware platform that animates and displays parts of the digital game on a screen and which is affected by user input.

### **3.2 Why study Digital Games?**

Despite the fact that digital games have existed since the early 1950s or 1960s (depending on whether you count Alexander Douglas' Noughts and Crosses, William Higginbotham's basic tennis simulation Tennis for Two, Spacewar developed at MIT, or the text based adventure game ADVENT as the starting point), little research has been done in the humanities until the last 15 years. Joe Bryce and Jason Rutter's quick survey of articles written from 1995-2004, shows that the number of articles published from 1995-2000 had doubled from 2000-2004 indicating a notable rise in academic

interest (Kirriemuir 21-23, Bryce and Rutter 1-4). Some have argued that this rise in interest has been spurred by economic factors (the digital game industry grossed 21 billion US dollars worldwide in 2003 (Egenfeldt-Nielsen et al. 14)), the general rehabilitation of popular culture as a topic of study in recent years, and the number of scholars coming up through the ranks who have grown up with digital games and see them as a natural field of study. Still others like Espen Aarseth argue that the reason “[...]’we’ only discovered games as cultural artefacts a few years ago” (Genre Trouble 46) is the fact that digital games “unlike traditional games or sports, consist of non-ephemeral, artistic content (stored words, sounds and images), which places the games much closer to the ideal object of the Humanities, the work of art” (Playing). McLuhan’s answer to Aarseth’s notion would be that the increased interest in ‘games’ would be an example that in the new medium of digital games the content medium, games, has now become discernable to us and visible to study.

The reasons for the increase in scholarly interest in digital games mentioned above include several good reasons for studying these. Another relevant reason, I would say the most relevant one, is that the digital game is a medium and as such affects its users and our society. The largest group of users of digital games are no longer, if they ever were, children, which at one point was erroneously used as an argument against the study of digital games, but a seemingly increasing number of adults who grew up with digital games and continue to use them (Buckingham 2). Regardless of motives behind the study of digital games it is clear that the interest in scholarly circles is increasing, and that this young academic field is host of a plethora of approaches. Espen Aarseth rightly states that if one looks at the approaches applied to the study of digital games “A more or less complete list reads like the A-Z list of subjects from a major university” (Playing).

### **3.3 Why a hybrid media approach?**

With so many different approaches to the study of digital games, it is important to clarify what my approach can contribute to the field before applying it. As mentioned analysing digital games as a media hybrid allows me to study the medium in relation to the media ecology, and thus examine how it draws upon the game and computer media

and moves beyond these to form a new medium. I believe that this approach differs from other approaches currently applied to the study of digital games.

Many approaches focus on game content or player experience. Examples of this are approaches from fields such as gender studies, game theory, and film studies which focus mostly on individual digital games and their content, whereas approaches from fields such as anthropology, sociology, ethnography focus on social interactions among players, player's use of games, and gaming communities in and outside of digital games. The field of Aesthetics examines how all aspects of digital games are experienced by the player, either directly through graphics and sound, or indirectly through the rules (Perron and Wolf 332-288, Egenfeldt-Nielsen et al. 97-131). My approach does not focus on content or social relations, but does have similarities to the aesthetics approach. However, this approach does not to examine the media ecology and how the medium functions by drawing on other media.

A number of media are studied under the umbrella term New Media which uses approaches from various fields to study computer based manifestations of older media, and studies digital games as such. New media approaches examine a variety of things including how digital games facilitate new types of media use and experiences, and the questions of interactivity, simulation, and the role immersion. They also examine how the 'technological imaginary' and 'real world' networks between players and digital games suggest new ways of theorizing the subject in digital culture, often seeing the subject as a cybernetic or cyborg organism (Giddings and Kennedy 129-147). This approach shares overlapping interests with my approach, but I believe that examining the digital game media within its media ecology, which will show that it is more than merely a digitalization of an existing 'real world' medium.

Espen Aarseth and others have called for the study of digital games to become an independent field of study with its own theories and methodologies rather than be 'colonized' by other fields. This field goes under the name 'computer game studies' or 'video game studies' and is admittedly both a political and an academic project. Within 'video game studies' one finds two main areas of interest these are, the situationists, who study digital game players and digital game player culture, and the formalists, who focus either on specific games or ontological analysis of the nature of

digital games. The formalist group has two subgroups, narratologists, who examine the role of narratives in digital games, and ludologists who emphasize either the study of games as separate from narratives, or video games as a distinct field of research working to create theories that are specific to the computer game medium (Bryce and Rutter 1-17, Egenfeldt-Nielsen et al.7-11). The approaches that make up ‘computer game studies’ study many relevant factors regarding the ontological nature of games and digital games, but statements such as Aarseth’s claim that “[...]there is no ‘computer medium’ with one set of “fixed capabilities, not (sic) is there ‘the medium of the computer game’” whilst at the same time acknowledging that “[...]computer games are games in a new material technology, just as print novels were literature in a new technology 500 years ago” (Genre Trouble 46) seems to indicate that ludologists are going for the ‘juicy piece of meat’ that is the content medium, games. This is not to say that studying games is not an important element of studying digital games, but denying the existence of a digital game medium prevents a full understanding of digital games.

The field of media ecology, within which one might argue that my approach falls, has also been applied to the medium of digital games. An example of this is Jay David Bolter and Richard Grusin’s term of remediation which they liken to McLuhan’s notion of hybrid media and define as the “[...]the representation of one medium in another”(Bolter and Grusin 45). Their approach describes media as that which remediates, meaning “[...]that which appropriates the techniques, forms, and social significance of other media and attempts to refashion them in the name of the real”(Bolter and Grusin 65). According to Bolter and Grusin, media try to achieve a sense of immediacy by either transparency, attempting to hide mediation, or hypermediacy, making it clear that it is mediated. They see digital games such as remediating computers as well as television and film. In their approach Bolter and Grusin focus on visual elements and only briefly mention the increased interactivity of digital games over normal TV. This approach contains a clear visual bias and ignores the relationship between digital games and non-screen related media (Bolter and Grusin 88-103).

A related field to media ecology which has clear similarities to my hybrid media approach is the relatively new approach of technological and cultural

convergence. Convergence theorists such as Henry Jenkins, Siegfried Zelinski, and others study the connections and convergence between media in various ways. One example is the work of Jenkins who notes that “media convergence is not an endpoint; rather, it is an ongoing process occurring at various intersections between media technologies, industries content and audiences” (Murphy 200,197-210). Rather than studying the process of convergence the use of the hybrid media concept in this thesis gives me the tools to analyse how the digital game medium draws of the media that have converged into it and moves beyond these to form a new medium. Seeing that my approach to the analysis of digital games differs in a variety of ways from the various approaches used within the field I feel that my approach can add to the field of study.

#### **4.0 The Digital Game Medium as a Media Hybrid**

This chapter will analyse the digital game medium as a media hybrid. It will begin with a brief discussion of the moment of hybridization followed by an introduction to the game medium and the computer medium. These elements will form the background for a discussion of digital games in relation to the four laws of media in McLuhan’s tetrad. This discussion will use the laws of media as a heuristic device to examine the digital game medium as a hybrid medium, place it in the wider media ecology, and narrow down specific elements which should be studied further. These discussions will then serve as the background for a more thorough analysis of how the digital game medium draws upon and differs from other media in the manner in which it functions and affects its users.

The digital game medium is a hybrid between the game medium and the computer medium with the game medium acting as the content medium. The moment of hybridization, which McLuhan describes as “[...]a moment of truth and revelation from which the new form is born” (Understanding 55), occurred in 1952 when Alexander Douglas created a version of the game Noughts and Crosses for the EDSAC as a part of his PhD thesis on human computer interaction. The EDSAC is recognized as the world’s first full sized, fully electronic, stored program computer, and it used a telephone dial for data input. Douglas came up with the idea of using the cathode ray tube displays, previously only used to monitor the content of the mercury delay tanks

which served as the computer's memory, to display the game as the user played Noughts and Crosses against the computer (Computer; Winter). Thus Douglas' Noughts and Crosses was the first digital game since it was digital in nature, stored as data in EDSAC's memory, played on a hardware platform, the EDSAC, that animated and displayed parts of the game on a screen, and was affected by user input through the telephone dial.

Examining the digital game medium by focusing on either the hardware technological elements or the game elements, such as Espen Aarseth, who studies digital games as “[...]games in a new material technology”( Genre Trouble 46) or “Games in virtual environments”( Playing), prevents a full understanding of the medium. The digital game media hybrid consists of a complex interplay between the computer medium and the game medium. This will become clearer as I proceed to examine how the digital game medium can be analysed as a media hybrid. However, before analyzing the media hybrid we need to have a good understanding of the nature of the media that hybridized into it.

As mentioned, Lance Strate states that McLuhan's chapter on “Games: The Extensions of Man”, the only chapter to share the subtitle ‘extensions of man’ with the book, “[...]is possibly the first instance in which the gap between the study of gaming and the study of electric technology had been bridged, and it ought to be foundational for the field of video game studies” (Strate 84). McLuhan's chapter on Games will therefore serve as the basis for a definition of games and will be supplemented by others where it is found relevant.

#### **4.1 The Game Medium**

In his chapter on ‘Games: The Extensions of man’ in Understanding Media McLuhan describes the game medium as extensions of social man and the body politic. Ancient and nonliterate societies saw games as dramatic models of the universe or the outer cosmic drama. The Olympic Games for example were enactments of the struggle of the sun god. The role of spectators for these rituals was plainly religious, and participation in these rituals kept the cosmos in place and provided the tribe with a spiritual boost. Games, icons and dances were a dim reflection of this cosmos. McLuhan

describes how, as ancient and nonliterate societies were detribalised after the introduction of literacy, “Art, like games, became a mimetic echo of, and relief from, the old magic of total involvement” (Understanding 237). With detribalization the audience of magic rituals, games, and plays became increasingly individualised. This led to a change in the focus of art and ritual from the cosmos to the human psychology as happened in Greek Drama, until the verbal narratives from Homer and Ovid became a romantic literary substitute for group participation and communal liturgy. This development leads McLuhan to see games as what he calls “[...] dramatic models of our psychological lives providing release of particular tensions” (Understanding 237), and he believes that it is this role as external models of internal psychological life that gives games their broad appeal (Understanding 234-7).

McLuhan considers games to be collective rather than individual dramatizations of inner life. These games, like languages, are media of interpersonal communication who only exist and have meaning as “[...] extensions of our immediate inner lives” (Understanding 237-8). McLuhan notes that when take part in a game “[...]we consent to being a part of a dynamic mechanism in an artificially contrived situation” (Understanding 238). Drawing on Aristotle’s idea of drama as imitational re-enactment and relief from our besetting problems, he deduces that the games that mimic life offer the most release and thus entertainment. In order to fulfil the role of offering relief to people, inherited from the ancient non-literate form of games, games must, to a certain extent, mimic society. As popular art forms games offer anyone the immediate means of participation in the full life of a society, which cannot be offered by any job or role (Understanding 237-8).

In being a model of inner life and in mimicking life games can tell a great deal of people, since they become a “[...]Utopian vision by which we interpret and complete the meaning of our daily lives”(Understanding 238). In order to participate in a game a person must relinquish control and submit to the collective demands of the game. This not only teaches the individualist of the mechanical age to adapt to the decentralized teamwork required in the electric age, but it also offers relief from the stresses brought on by the changes of society in this age. The changes in society brought on by the electric age also generate changes in games and preference of games. As an example of

this, the specialized game of baseball, fitting for the mechanical age, does not fit the electric age, in which people instead favour the more flexible, non-positional game of football which fits the new needs of decentralized team play (Understanding 238-240).

McLuhan Also considers games a popular art form, and, like art, games need rules, conventions, and spectators. He believes that games and art “[...]must stand out from the overall situation as models of it in order for the quality of play to persist”(Understanding 240). He bases this on his notion that play implies interplay and therefore games must also contain a certain dialogue, or give and take, like that which can exist between two persons or groups. Therefore McLuhan does not believe that practice matches without audiences are can be considered as games since a large part of the dialogue or interaction is with the crowd. McLuhan also states that such things as war and the stock market do not qualify as games since the rules are not fully known or accepted by all the players, and because spectators are too completely participant. Furthermore the game situation, like play, “[...]goes with an awareness of huge disproportion between the ostensible situation and the real stakes”(Understanding 244). Thus in the literate and the electric age “Sport, as a popular art form, is not just self-expression but is deeply and necessarily a means of interplay within an entire culture” (McLuhan 241).

McLuhan believes that the form of the game is of great importance. The central structural core of the game experience is a result of the pattern of the game, since it is this pattern that relates to the inner lives of people. In addition to this the mix of senses in the game, as in all of the arts used is crucial, since this is what allows the structural form to get through people’s conscious attention. Any game also functions as an extension of the person or group, and its effect is to reconfigure the parts of the person or group that has not yet been extended. Games are thus “[...] contrived and controlled situations, extensions of group awareness that permit a respite from customary patterns” (Understanding 243).

The link between games and ancient rituals is also seen by Johan Huizinga in his Homo Ludens: A Study of the Play Element of Culture which McLuhan cites as one of his sources, and by Janet Murray, who also agrees with McLuhan that games are cultural reflections:

“In games, therefore, we have a *chance* to enact our most basic relationship to the world – our desire to prevail over adversity, to survive our inevitable defeats, to shape our environment, to master complexity, and to make our lives fit together like the pieces of a jigsaw puzzle. Each move in a game is *like* a plot event in one of these simple but compelling stories. *Like* the religious ceremonies of passage by which we mark birth, coming of age, marriage and death, games are ritual actions allowing us to symbolically enact the patterns that give meaning to our lives” (Quoted in Egenfeldt-Nielsen et al. 198)

As an example Murray describes the game Tetris as "a perfect enactment of the over tasked lives of Americans in the 1990s - of the constant bombardment of tasks that demand our attention and that we must somehow fit into our overcrowded schedules and clear off our desks in order to make room for the next onslaught" (Quoted in Eskelinen). This notion is criticized by Markku Eskelinen who opposes Murray's idea that games have narrative traits, believing that she is projecting her own interpretation onto this Soviet created game. One might argue however, that the societal traits that make Tetris an example of the over tasked lives of Americans could have had equivalents in the lives of people in the Soviet Union.

McLuhan's idea of games as cultural reflections providing release of particular tension also received criticism. The criticism of his view of games as cultural reflections was based on his seemingly 'off-hand explanation of the popularity of individualist games such as soccer and ice hockey in the Soviet Union, by noting that these games still held an exotic and utopian quality to what he considered a tribal people (Egenfeldt-Nielsen 29). McLuhan's notion that games are dramatic re-enactments of our inner psychological lives and thus reflections of our culture is an underexplored, yet highly interesting idea. The criticism against his notion of games as providing the release of particular tensions is that "[...]the general idea of 'catharsis' (Greek for cleansing) through games is not backed up by much empirical data"(Egenfeldt-Nielsen 29). It could be argued that the use of the term in literary theory has not been backed up by empirical data either, but that the use of the term in the field of psychoanalysis would indicate that the notion of catharsis has some validity. McLuhan's notion also seems to be supported by Huizinga's statements that play as "a regularly recurring relaxation, however, it becomes[...] an integral part of life"(9) and that when playing we "[...]

want to achieve something difficult, to succeed, to end a tension”(11; Catharsis; Catharsis, n).

McLuhan also describes games as artificially contrived situations and notes that they come with an awareness of the huge disproportion between the ostensible situation and the real stakes. This can be compared to Huizinga’s notion of play as being “distinct from ‘ordinary’ since “It is ‘played out’ within certain limits of time and place [...]and[...]It contains its own course and meaning (9). This idea is usually referred to as ‘the magic circle’ and refers to Huizinga’s notion that play begins and ends at pre-arranged times and that:

“The arena, the card-table, the magic circle, the temple, the stage, the screen, the tennis court, the court of justice, etc., are all in form and function play-grounds, i.e. forbidden spots, isolated, hedged round, hallowed, within which special rules obtain. All are temporary worlds within the ordinary world, dedicated to the performance of an act apart.” (Huizinga 10)

Some interpret this idea of a ‘magic circle’ in which play takes part as a total separation of play and the real world which would conflict with McLuhan’s view of games as cultural reflections that provide release for real life tension. In fact this separation only lasts during play, and Huizinga states both that once play is over “it at once assumes fixed form as a cultural phenomenon”(9) and that the feeling of being ‘apart together’ associated with play often remains beyond the borders of the game. Huizinga’s notion that play is ‘captivating’ and ‘enchanted’ is also comparable to McLuhan’s idea of games as mimetic echoes of the old ritual magic of total involvement (Huizinga 9-12; Understanding 237).

In his definition of games as needing rules, conventions, and spectators McLuhan does not define what he means by rules and conventions. Salen and Zimmerman propose a three-part division of game rules into operational, constitutive, and implicit rules which can be useful here. The operational rules are what we would usually call the ‘rules of play’. They are guidelines that tell the player how to play the game by precisely explaining how the player should interpret and manipulate the objects of a game. The constitutive rules are the mathematical logic which exists under the surface of the game, for instance a description of the constitutive rules of chutes and

ladders can be described as: 1. Players all begin with a value of zero. 2. Players alternate turns adding a random number of 1-6 to their current value. 3. The first player to reach a value of exactly 100 wins. If adding the random number to a player's total would make the total exceed 100 do not add the random number this turn. 4. When a player's total reaches certain numbers the total changes, this rule covers the chutes and ladders of the game. The implicit rules of a game can be likened to what McLuhan would call conventions. They make up the 'unwritten rules' that concern good sportsmanship or proper etiquette and vary from game to game. Salen and Zimmerman also state that the formal identity, or pattern, of a game "emerges from the relationship between the game's constitutive rules and operational rules. The form, or pattern, of the game to which McLuhan ascribes the utmost importance is thus created by the rules of the game (Zalen and Zimmerman 127-139). Apart from their useful three-part structuring of rules Salen and Zimmerman also describes the main traits shared by game rules. Game rules limit player action since they have to be followed, this leads to the next trait being that game rules are binding. Game rules are also explicit and unambiguous so as to prevent confusion. Rules are also fixed and cannot be changed during gameplay since this would lead to confusion. Salen and Zimmerman also state that game rules are repeatable each time the game is played and between different sets of players (Salen and Zimmerman 119-127). Having thus defined rules and conventions it is time to examine the last element that McLuhan believes is required to make a game.

McLuhan's notion that spectators are required for a game to be considered a game seems problematic. Spectators are plausible within the magic circle, most people who attend soccer or games or seem to follow a certain set of rules for spectatorship required at such events and are keenly aware of the temporal and special limits of such behaviour and those who do not adhere to this code are looked down upon as hooligans. The requirement of spectators for something to be a game is much more problematic. This requirement is based on the game medium's roots in ancient ritual games, in which spectator participation was a religious ritual, as well as the need for interplay, as between two players or teams, to keep the quality of play alive. The requirement of spectators seems to go against McLuhan's own example of poker as a game since most poker games do not have spectators. It also seems clear that games do not necessarily need to have spectators in order to maintain a level of interplay. This interplay also

exists between players in a game, and can also be said to occur between player and game in solo games such as solitaire where the player interacts with the game rules. This argument fits Salen and Zimmerman's definition of meaningful play as emerging "[...]from the relationship between player action and system outcome; it is the process by which a player takes action within the designed system of a game and the system responds to the action" (Salen and Zimmerman 34). Going forward, the game medium is thus defined as extensions of group awareness expressed as "[...] dramatic models of our psychological lives providing release of particular tensions" (Understanding 237). These take place within the temporal and spatial boundaries of the magic circle, defined by the conventions of the game, within which we "[...]consent to be puppets for a time" (Understanding 238) surrendering ourselves to be governed by the rules which obtain within the magic circle, and make up the formal pattern of the game that reflects our culture, fully aware that the gaming situation is separate from ordinary life.

#### **4.2 The Computer Medium**

McLuhan's tetrad analysis of the computer medium describes that it enhances speeds of calculation, retrieves total and perfect memory, obsolesces sequence, perception, approximation and the present, and reverses into anarchy via the overlay of bureaucracy (Laws 188-189). The enhancement of computational powers allows the computer to quickly process large amounts of data which allows them to automate complicated procedures and calculations creating what Salen and Zimmerman call "Automated Complex Systems"(88). The retrieval of total and perfect memory endows computers what Murray calls their encyclopaedic value, meaning that they can "[...]contain more information in more forms than any previous medium"(Murray 8). The obsolescence of sequence, perception, and approximation is a result of the enhanced speeds of computation and retrieval which can bring us information so fast that it seems simultaneous rather than sequential, a characteristic of McLuhan's electric age. The same goes for perception which is obsolesced since the computer can process and respond to large amounts of data faster than we humans can perceive it. There is also no need for approximation since the precise answer can be calculated with electric speed. The obsolescence of the present is tied to the enhancement of retrieval since past cultures become available to us through almost instant retrieval which causes us to

again live mythically and in depth, “All is present, including the tribal man” (McLuhan and Watson 119). McLuhan notes that the reversal of the computer into anarchy is a result of the ability of computers, pushed to their limits, to allow the state total bureaucratic control which causes a reaction leading to anarchy.

When comparing McLuhan’s tetradic analysis of the computer medium to the Encyclopædia Britannica definition of a computer as a “[...]device for processing, storing, and displaying information”(Computer) we find another quality of the computer, namely the ability to display information on a screen, and we might add sound to this as well. This screen shares technological with the TV screen, and Levinson explains that this resemblance is there since the TV medium reversed into the computer medium. Another medium that Levinson sees reversing into the computer medium is the telephone. This cross fertilization results in the Internet which allows computers to send data signals to each other across the globe at near instant speeds (Levinson 190).

Another element that is missing from both McLuhan’s tetradic analysis of the computer medium and the definition from Encyclopædia Britannica is that of interactivity. The computer medium lets us not only store, but also input and manipulate information by interacting with the computer interface. Salen and Zimmerman state that this interactivity is instant, but limited by the modes of input, such as keyboards or controllers (Salen and Zimmerman 87). The computer medium takes many forms, but moving forward it is defined by its computing power, memory, audio visual capabilities and its interactivity.

### **4.3 Digital Games and the Laws of Media**

An example of the complex interplay between the game and computer media in the new hybrid form of digital games can be seen when discussing the first question of McLuhan’s tetrad: “What does the artefact enhance or intensify or make possible or accelerate?” (McLuhan and McLuhan 99). The initial thought here would be that digital games enhance games, but this would be focusing on the content medium and it is necessary to go beyond such initial considerations. When going back to the moment of hybridization, Alexander Douglas’ Noughts and Crosses, it would seem that the enhancement from the game Noughts and Crosses to its digital game counterpart is that

Douglas' Noughts and Crosses allowed a single player to play on his own against a computer opponent rather than requiring a human opponent.

Some critics, such as Arthur Asa Berger, have seen the activity of playing digital games as a 'lonely activity' which leads to alienation and problems relating to alienation (Tyler). This point of view is criticized by Tom Tyler who states that solitary game play is nothing new, and refers to games such as the board game peg solitaire which has been played since the 17<sup>th</sup> century. Tyler believes that rather than changing the type of play available in games digital games provide a qualitative change. He believes that digital games enhance solo play by using computer technology to allow for much more complex solo gameplay (Tyler). When looking at Noughts and Crosses it can be argued that the increase in complexity is created by supplying a computer controlled opponent to play against which increases or enhances the level of interplay. The increase in the complexity of solo play can be seen even more clearly in Tyler's example in which he compares Sid Meier's Civilization game series to its predecessor, the board game Civilization created by Francis Tresham.<sup>1</sup> Tyler describes the board game Civilization as "[...]a complicated affair, requiring up to seven players to keep track of multiple rules and playing pieces as they compete for territory and commodities around the ancient Mediterranean Basin" with an archaeological succession table starting from the year 8000 BC and ending in the year 250 BC (Tyler). In comparison the digital game Civilization is set in the entire globe and stretches until 2050 AD which vastly increases the complexity of the available technologies, trade and warfare. The digital game also contains new factors such as religion, culture, taxation etc., and the 9 commodities from the board game have been replaced by 32 resources. The enhanced version of the Civilization board game, the digital game Civilization, is thus far more complex than what is, realistically, possible for a board game.

It should be noted that digital games enhance more than the user's solo gameplay experience. The early digital game Tennis for Two was a multiplayer

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<sup>1</sup> The connection between the board game Civilization and Sid Meier's digital game series Civilization is contended. Sid Meier claims to have been unaware of the board game at the time he designed the first of the digital game, whilst Bryce Shelley, who worked on the digital game recalls Meier owning a copy of the game and studying it during the creation of the digital game (The History of Civilization). Regardless of whom one believes, there are strong similarities between the board game and the digital game which makes a comparison possible and relevant.

gameplayable by two players on the same platform, and in 1969 a version of Spacewar was programmed to be played by multiple players via the PLATO network, an early local area network, at the University of Illinois. This can be seen as the first example of local area network or online gaming via the Internet, thereby letting users play against one another from separate platforms (Kirriemuir 21-35). These tendencies can also be seen today where many hardware platforms feature the possibility to have several users play one another locally on the same platform or online via the Internet. Some digital games are based solely on online play. Known as Massive Multiplayer Online Role-Playing Games, abbreviated MMORPGs, these can indeed be massive with games such as Blizzard Entertainment's World of Warcraft, and Jagex' Runescape having a reported 8.5 million paying subscribers and 5 million active users respectively (GigaOM Top Ten). This increase in the amount of people that can play a game against one another, and thus the level of interplay, is another clear example of how digital games enhance the gameplay experience and most new digital games includes the potential of online play.

The number of players is not the only way that digital games can enhance the gaming experience. Digital games also affect our perception of time and space since digital games use the computer to create a gameworld, which is presented using graphics and, most often, sound. The term gameworld is used by Aarseth to describe the 'material/semiotic system' that makes up the graphical and auditory frame or world within which the game takes place, comparable to the board and game pieces used in a board game (Genre Trouble 48). This computer generated gameworld can represent any place from a famous sports arena to a far off planet and can quickly change between such settings. Such a gameworld can be seen as an enhancement of gameboards, and allows the user to play somewhere other than where he physically is, represented by a form of digital representation or avatar. The gameworld not only represents a different place, but can also have its own sense of time; meaning that 'game time' can differ from 'real world' time in various ways. This poses an interesting problem in relation to the concept of the magic circle since the gameworld seems to represent a form of ideal magic circle because it, due to its digital nature, is physically non-existent and thus entirely separate from ordinary life in both spacial and temporal terms. On the other hand the player of a digital game is not physically present within the gameworld, though

the feeling of being 'in the game' is often described by digital game players, who feel a loss of place and time.

In digital game scholarship the player's feeling of being 'in the game' is often described using the term 'immersion'. This experience is also described by users of other media, such as literature or TV, but is thought to be especially strong in digital games. Giddings and Kennedy find that this is related to the fact that the user has a sense of control over the avatar (Giddings and Kennedy 141-2). There are similarities between this idea and McLuhan's notion that "[...]in all communication the user of whatever medium is the content" (McLuhan to Wain 431) in that the user becomes the content by interacting with the digital game through the controls. A key difference between digital games and the TV and telephone media is the fact that whereas in using the latter media the user becomes "[...]discarnate, existing as an abstract image, a *figure* without a body" (McLuhan to Boothe Luce 543) the digital game medium gives discarnal man new body as he is embodied in the on screen avatar. This discussion of the first question of McLuhan's tetrad shows us that digital games enhance the experience of gameplay and that when analyzing digital games it is important to focus the rules, interplay, time, space, embodiment, and immersion.

The use of a screen to display the gameworld in digital games seems to play a key role when it comes to the second law of McLuhan's tetrad which asks "What is pushed aside or obsolesced by the new 'organ'?" (McLuhan and McLuhan 99). Again, the initial thought would be that the answer to the question asked by the tetrad would be games. This argument is plausible since it can be argued that digital games obsolesce games by presenting users with an enhanced version of games. This shows the pervasiveness of the content medium and its ability to distract the attention of its users. In his discussion of this question in his article A Procrustean Probe Tom Tyler suggests that the Digital Game medium obsolesces the TV medium, and examines a number of studies of media habits in order to examine whether the increased use of digital games carve into time previously spent watching television. The answers found in the studies vary, and referring to McLuhan's statement that "Handwriting has been obsolescent since printing and typewriter, but there is a great deal more handwriting done daily now than was ever done before printing, or the typewriter." (McLuhan To the Globe and

Mail 410), Tyler himself questions whether one can answer the question of obsolescence by studying the amount of time spent using one media over another.

Another view of how the digital game medium obsolesces TV can be seen in Sheila C. Murphy's use of convergence theory to study on the role of television and video games in the emergence of the personal computer in which she states that users could "[...] repurpose the television receivers with add-on technologies like video gaming systems" turning into a computer (Murphy 203). The view of digital games as repurposing TV is shared by Bolter and Grusin who believe that "Video games are played on a repurposed television set, one in which an attached control unit transforms the screen into a different medium." According to Bolter and Grusin the remediation carried out by digital games go further than this as they also remediate the style of television and film as well as the computer on which they are played (Bolter and Grusin 91). If the TV screen is obsolesced by digital games because it repurposes the screen it could be argued that digital games played on other platforms obsolesces the platform on which they are played. A digital game played on a computer ensures that it cannot be used for other purposes. An example of this would be when the Internet search engine Google added a version of the digital game Pacman to its logo causing an estimated 4.8 million work hours worth \$120 million dollars as workers played the game rather than using the Google search engine in their work. This discussion of the second question of McLuhan's tetrad shows us the relationship between the digital game medium and the TV medium through the computer medium.

The third law of McLuhan's tetrad: "What older, previously obsolesced ground is being brought back and inheres in the new form?" (McLuhan and McLuhan 99) revolves around McLuhan's concept of retrieval. Here again it seems obvious that the answer would be games since the digital game medium brings back the game medium and translates it to fit into the new ground in which it is retrieved. This is another example of the pervasiveness of the content medium, and it is advantageous to look beyond this. In his discussion of what is retrieved by digital games Tom Tyler concludes that "Digital games retrieve extranoematic participation from the analogue games and sports with which, in this context, they have most in common." The

participation retrieved in digital games is the echo from “[...]the old magic of total involvement” found in the game medium(Understanding 237).

To explain the retrieval of participation from games Tyler draws on Joost Raessens’ efforts to “[...]identify the specific combination of elements that characterise digital games as a form of ‘participatory media culture’ and to distinguish them from film and television” (Tyler). Drawing on notions of the active audience to argue that different types of engagement with a text is possible, Raessens argue that digital games take part in three interrelated modes of participation: interpretation, reconfiguration, and construction. The interpretation of a cultural artefact is a type of participation common in many media types. Raessens draws on Aarseth and others to explain the second form of participation, reconfiguration, as a combination of ‘exploration of the unknown’, such as moving around in the unfamiliar gameworld, and selection from the various actions and options permitted by the game. The third mode of participation described by Raessens is construction which describes the process of creating a new digital game or modifying an existing one. Bringing Raessen’s concepts into the context of the question of retrieval Tyler finds that it is interesting to focus on the extranoematic aspect of participation that is retrieved by digital games. Here Tyler is referring to reconfiguration and construction, which are made possible by the nontrivial, ergodic effort required for users to play digital games (Tyler). This retrieval of extranoematic participation from ‘real world’ games, which had been obsolesced by film and TV, shows the strong and very important connection between the digital game medium and the game medium. It can also be argued that the retrieval of the cliché of participation results in the, unconscious retrieval of the higher level of interplay of the game medium, as compared to TV. This leads to the unconscious retrieval of the echo of the old magic of total involvement found in the game medium. This retrieved cliché is translated to fit into the new ground, and become the immersion found in digital games. The question of retrieval has made us aware of the close relationship between the extranoematic interactivity retrieved by digital games, interplay and immersion.

The fourth law of McLuhan’s tetrad “What is the reversal potential of the new form?” (99) lets us examine what the medium might potentially reverse or flip into. Reversal occurs when a medium, “[...]pushed to the limits of its potential, reverses its

characteristics and becomes a complementary form” (McLuhan and McLuhan 107). Drawing on Salen and Zimmerman’s concept of ‘the immersive fallacy’ Tyler argues against those who believe that digital games are moving towards achieving completely realistic gameworlds which would result in an experience of total immersion in which the player suspends all sense of disbelief. Applying this to McLuhan’s concept of reversal such a belief would mean that the inherent quality of immersion in digital games which is not total since, like in the play situation, the player has an “awareness of the huge disproportion between the ostensible situation and the real stakes” (Understanding 244), will be reversed into total and constant immersion when digital games are pushed to the limits of its potential.

Tyler argues that digital games reverse into persistent and pervasive play. He builds this argument on Markus Montola’s finding that a number of modern games systematically break or blur the traditional boundaries between gaming activities and real life, thus destabilizing the magic circle. Tyler describes three ways in which digital games explore and destabilize the magic circle. The first example is alternate reality games which are digital games designed to obscure the distinction between the gameworld and the real world. An example of this is The AI Game that requires the user to find information from the Internet, e-mails, phone messages and print media and never specifically acknowledged that it was a digital game. The second example is a type of digital game that incorporates pre-existing elements of the user’s everyday environment into the magic circle and, as opposed to the alternate reality games, claim that these real world elements are now part of a digital game. An example of this is the digital game Botfighters which is played on cellphones. The user chose and outfitted robots from a website and, using the GSM technology of the cellphone to pinpoint the user’s whereabouts, the users could track each other down in the streets and attack each other using text messages, thus making the real world streets part of the gameworld. The third example of how digital games explore and destabilize the magic circle is that components generated inside digital games have begun to leave the magic circle. An example of this is how virtual items for MMORPG’s have become available for purchase on the open markets leading to things such as ‘gold farms’ in countries with cheap labour where people are employed to mine virtual gold which is then sold in the real world, for real currency (Tyler). Tyler’s argument then is that the creation of a

gameworld or magic circle in digital games separate from the real world will reverse into persistent and pervasive play that breaks this magic circle. From this examination of the fourth law of McLuhan's tetrad Tyler concludes that "The tetrad's final law tells us, in short, that digital games are a part of ordinary life, not apart from it" (Tyler). The discussion of the fourth law of McLuhan's tetrad allowed us to see that the digital game medium is both inherently immersive and connected to the real world.

This use of McLuhan's laws of media to examine the digital game medium has helped place the digital game medium within its media ecology, showing its close relationship to the computer and game media. It has also shown the pervasiveness of the game medium in obscuring the operation of the digital game medium, and helped bring attention to the subjects of rules, interplay, interactivity, embodiment, immersion, time and space as well as the close relationship between these concepts which need closer examination in order to show how the digital game medium can be analysed as a media hybrid.

#### **4.4 The Features of the Media Hybrid**

The closer examination of how the digital game medium can be analysed as a media hybrid will begin by examining the role of rules in digital games. This will be followed by an examination of the role and origin of interplay, interactivity, embodiment, immersion, and time and space.

When examining the role of rules in digital games it is important to distinguish these from the code of the game. The code of a digital game is highly structured and seems to determine the possible actions of the player in the context of the digital game. But the code also has to manage the input through controls and output on the screen as well as interact with the operating system and memory of the computer. So even though code and game rules overlap the two are not the same. The traits that describe game rules are similar to those that can be used to describe digital game rules. Digital game rules limit and control player action, and they are binding and has to be followed since the avatar cannot do anything that is not governed by the game rules. The computer code that contains the digital game rules is explicit and unambiguous like game rules, and the code is repeatable since every copy of the game contains the same code. The code can also be said to be fixed, though some expert players enjoy modifying games

and thus changing the code. This is Raessen's third form of participation, construction, and it could be argued that once the code is altered it is a new and different digital game.

The notion that the game rules has to be shared by all players does not fit with digital games since, as Steven Johnson explains, "Most video games differ from traditional games like chess or Monopoly in the way they withhold information about the underlying rules of the system"(Johnson 42). In digital games the rules are rarely revealed to a player before the gameplay begins. A few basic instructions on how to manipulate objects or characters in the gameworld and a type of immediate objective is usually given, but the rest is revealed as the gameplay progresses. "You literally learn by playing"(Johnson 42). When looking at the three-part division of game rules into constitutive, operational, and implicit rules it seems that they are similar to the rules of digital games. The constitutive rules deal with the internal workings of the digital game's logic and not the elements concerning interaction with the player. These elements are covered by the operational rules of the digital game. These are also similar to their game equivalent, and deal with the player interaction with the game including such things as input from controllers and how the reactions of the digital game are presented to the user. The representational role of the operational rules focuses on the formal events and not the details regarding the look of the material/semiotic system that makes up the gameworld. The implicit rules of games also seem to apply to digital game along with added implicit rules related to the technological hardware platform on which the game is played. For example moving the mouse cursor or clicking a button on a keyboard or a controller usually has an effect in the game and digital games should not damage the hardware platform (Salen and Zimmerman 141-149). Another difference between game rules and digital game rules that has already been mentioned is that the processing capabilities of computers allow for more digital game rules that are more complex than game rules.

What does the higher complexity of the rules in digital games mean for the digital game medium? The complex rules of digital games mean that the pattern of digital games can be more complex than those of games. Operational rules have to deal with different forms of input that are more technologically complex than those of real world games, and the constitutive rules are also more complex. This can be seen in

Steven Johnson's description of the high number of simultaneous objectives that players of digital games have to deal with. He uses the concept 'telescoping' to describe the way players have to remember and organize these objectives to create order, and notes that this differs from the concept of multitasking which centers on the ability to handle chaos (Johnson 48-62). The high number of objectives that appear during gameplay and need to be organized by 'telescoping' appears to Johnson as "[...]something profoundly lifelike" (Johnson 56) since people also face a number of simultaneous objectives in our lives that we need to organize in order to handle them. The more complex game rules in digital games teach us to improve our ability to 'telescope' and thus deal with multiple objectives at the same time, something that is crucial in the electric age where McLuhan states that man has to deal with "[...]an instantaneous flow of information from every part of a situation, from every quarter" (McLuhan to Morgan 252). Thus by improving our ability to 'telescope' digital games helps us function in society.

The fact that players do not always know the rules of a digital game before gameplay begins but instead learn the rules by playing the game also affects the pattern of the game. These rules are not the objectives that the player can 'discover' along the way, but rather the operational rules that govern how one can interact with objects in the gameworld to achieve these objectives. The fact that these are often largely unknown when gameplay begins makes the probing and exploring of the limits and abilities of the operational rules an important part of a digital game. James Paul Gee describes this type of probing as a four step process or cycle that he calls the probe, hypothesize, reprobe, rethink cycle. The player begins by probing the virtual world, thus engaging with the operational rules of the game. Based on reflections done during and after the probing the player forms a hypothesis about what something, an object, an event, or an action, means in a useful context. With this knowledge in mind the player then reprobates the gameworld to see the effect this creates. The player then uses the feedback from this event to rethink the original hypothesis and the cycle starts over (Johnson 45). Through this process players find patterns in the operational rules of the game that can help them achieve their objectives.

Johnson notes the similarities between the probe, hypothesize, reprobe, rethink cycle and scientific method, and notes that probing is often a semiconscious activity since players do not necessarily consciously consider these steps or the fact that they are

probing. It is just a part of how to play a digital game. The probing can be seen as a form of search for the pattern or patterns of a game and can thus be seen as semi- or subconsciously teaching players the skill of pattern recognition. Many digital games take this into account, and their single player modes often offer tutorials or practice runs and include a learning curve that increases the difficulty as play progresses. This allows the player to learn the patterns of the digital game and apply them to solve increasingly difficult tasks and uncover more complex patterns without being frustrated by overwhelming difficulty.

The skill of pattern recognition is necessary in the electric age where instantaneous information surrounds us since we need to be able to recognize patterns in order to make sense of it in a world where “[...]the entire business of man becomes learning and knowing” (Understanding 58). McLuhan sees pattern recognition as a vital survival strategy to understand how media affect us, and the role of digital games in forcing players to practice such skills fits with McLuhan’s statement that:

“[...]the total-field awareness engendered by electronic media is enabling us --indeed, compelling us -- to grope toward a consciousness of the unconscious, toward a realization that technology is an extension of our own bodies. We live in the first age when change occurs sufficiently rapidly to make such pattern recognition possible for society at large (Playboy 237).

The complexity of the rules in digital games creates a high amount of objectives to be memorized and organized. This teaches us to sort and prioritize the information coming at us from all sides in the electric age. Similarly the fact that we do not know the rules from the beginning of the gameplay teaches us to probe and find patterns in the world that surrounds us. Games can thus be said to be reenactments of these elements of our everyday lives. The importance of examining the effects of the complexity and use of the rules in digital games is that they have showed us that “It’s not *what* the player is thinking about, but the *way* she is thinking” (Johnson 60). In games the complexity is often found in the give and take between the player and an opponent rather than the game rules.

McLuhan describes interplay of games as similar to the give and take between two people or groups, and in digital games interplay takes place on two levels. Firstly, interplay can be created by the digital game rules where the complex operational rules

of digital games offer more ways to interact with the digital game as well as more ways for the digital game to respond. This adds a higher level of interplay to solo play, for instance through the addition of computer controlled players. Secondly, the higher number of players allowed in digital games through online play in games also increase the level of interplay since there are more players participating in the game. The interplay between player and digital game rules overlaps with Raessens' description of his second form of participation, reconfiguration. Raessens describes reconfiguration as a combination of 'exploration of the unknown', such as moving around in the unfamiliar gameworld, and selection from the various actions and options permitted by the game (Tyler). This includes the 'give' part of interplay, but leaves out the highly important fact that user participation in digital games causes a response from the digital game that the player then has to respond to. Interplay can thus be seen as a form of participation required in digital games.

The input required by digital games is made through various forms of controllers and is often referred to as interactivity. Interactivity is defined in many different ways. One of these is Chris Crawford's definition of interaction which compares it to a conversation describing it as "[...]a cyclical process in which two actors alternately listen, think, and speak"(Quoted in Salen and Zimmerman 59). This definition of interactivity has similarities to Gee's probe, hypothesize, reprobe, rethink cycle. They are both cyclical ways of describing the way in which players interact with digital games through cycles of action, thought, and reaction. It is thus the interaction between the player and the operational rules of the digital games as well as the interaction with other players, which is also governed by the operational rules, which creates the interplay required to maintain the quality of play in games. Since the gameworld is displayed on a screen the action, thought, and reaction of interactivity includes the interpretation of what one sees. This means that interactivity includes Raessens' first order of participation, interpretation. It is clear that there is a connection between the increased complexity of game rules in digital games and the level of interplay which is part of what makes games the echo of "the old magic of total involvement" (Understanding 237).

When looking at the digital game medium as a hybrid medium it is important to keep in mind that the interaction between player, operational rules, and other players in digital games is mediated through the use of some type of input device. This element of human computer interaction is important and has been a part of digital games since Douglas' Noughts and Crosses, the moment of hybridization, which was part of a PhD thesis studying human computer interaction (Winter). McLuhan noted that [...] in all communication the user of whatever medium is the content" (McLuhan to Wain 431). Thus the player becomes the content by interacting with the digital game through the controls. This means that the player becomes "[...]discarnate, existing as an abstract image, a *figure* without a body" (McLuhan to Boothe Luce 543). What makes digital games different from other media is that discarnal man transmitted into the digital game, whether it is on a local hardware platform or on a server for an MMORPG, is given a new body as he is embodied in an on screen avatar. This notion is supported by Andreas Gregersen and Torben Grodal who examines embodiment through a cognitive neuroscience framework, and argue that both the interpretive and physical elements of interactivity is closely related to the notion of embodiment.

Gregersen and Grodal use the concept of embodiment in two ways, firstly to conceptualize the body as a physically existing, biologically-evolved entity, and secondly to describe our experience of ourselves as embodied beings as well our conscious experiences of the world that are a result of our embodiment. These meanings of the concept of embodiment are closely related, for instance digital games take our physical embodiment into consideration as they map specific physical actions to virtual avatars (Gregersen and Grodal 65-66). This interaction between the physically embodied player and the digital game through the controls create a sense of agency that is important in relation to the feeling of embodiment.

Examining agency in relation to embodiment Gregersen and Grodal find it useful to distinguish between ownership of action, also called agency, and ownership of body. These two are usually fused since we experience ourselves as taking action and feel that the body taking this action is our own, but can be separated since one can feel ownership over his body, but not his action. Another important point about embodiment is that, although our physical embodiment determines the extent of the potential

experiences that we can have, our experience of ourselves is not necessarily limited to our physical body. An example of this is when a driver scratching a car winces because aspects of his body image and experience have been projected onto the car, temporarily extending his body image.

Neuroscientists have found that the ability to include parts of the outside world in our embodied activity, which backs up McLuhan's notion of media as extensions of man, stems from specific brain structures. These structures are bimodal neurons that normally function to keep track of somatosensory areas of hands or shoulders and the visual field close to these areas which extend the field of vision to include tools. This "[...]bimodal integration of sub-personal but very real and efficacious feeling of an incorporated and augmented embodiment when we use tools for manipulating: we feel a clear sense of both agency and ownership with tool extensions[...]" (Gregersen and Grodal 68).

Thus embodiment is about more than the physical 'pushing buttons' element of interactivity, it also involves the interpretive participation portion of the concept. It is also clear that the extension of our body depends on active use, agency. As mentioned agency is created by action or what Gregersen and Grodal calls motor commands issued, as well as the experience of our body being moved which is described as proprioceptive feedback. To this Gallagher adds that agency is also created by the intention to perform an action. Drawing on Daniel Wegner's argument that a sense of agency tends to increase body ownership we can thus argue that embodiment requires action, perception and thought, all three elements of Crawford's definition of interaction.

To explain the complex nature of embodiment Grodal and Gregersen draw on Shaun Gallagher's distinction between body image and body schema. Body image is a system of perceptions, attitudes, and beliefs about one's own body, and the body schema is a system of sub- or unconscious sensory motor capacities that function without the necessity of perceptual monitoring. Building on this they argue that interaction with digital games "[...]lead to a sense of extended embodiment and sense of agency that lies somewhere between the two poles of schema and image" (Gregersen and Grodal 67, 65-83). Interactivity thus transmits the player into the digital game

embodying his discarnal self in the avatar he controls by extending his sense of ownership of agency and body to include it. This sense of ownership does have its limitations, as will be show when we examine the game world in relation to the magic circle.

The extension of ourselves into electric technology means that we extend ourselves into the digital game to take part of digital gameplay which takes place in the gameworld. This fits McLuhan's statement that "[...]in the electric age we see ourselves being translated more and more into the form of information[...]" (Understanding 57) since the gameworld and the avatar is made up of code. This code contains not only the rules of the digital game, but also the information that instructs the computer on how to generate the semiotic system that makes up the avatar and the gameworld displayed on the screen of the hardware platform. The gameworld makes up the graphical and auditory frame or world within which the game takes place (Genre Trouble 48). When playing digital games gameplay thus takes place within the confines of the gameworld, a virtual space separate from the physical world created specifically for the purposes of the digital game. This gameworld can represent any place ranging from famous sports arenas to outer space or an imagined fantasy world, and its physics and the speed of time can be different from the 'real world' as well. The physics, time, and all player interaction with and within the gameworld is governed by the operational rules of the digital game so when players interact with the digital game the players "[...]consent to be puppets for a time" (Understanding 238). This description of the gameworld as a contrived space in which interaction is governed by the game rules fits the description of Huizinga's magic circle. This is made even clearer when taking into account that it is very clear that the events taking place in the digital gameworld do not affect the real world, meaning that there is "[...]an awareness of huge disproportion between the ostensible situation and the real stakes" (Understanding 244). When the player's in game avatar dies the player's 'real world' health is not at stake.

When considering the concept of the magic circle in relation to digital games it is important to note that the avatar present in the gameworld is an extension of man into electric technology. As Gregersen and Grodal notes our experienced or "[...] 'lived body' in Merleau-Ponty's terms is thus not independent of the physical

body”(Gregersen and Grodal 66). For example the ownership of agency that helps promote ownership of body ends when the player is not using the controls whether during a cut scene or when play ends. The interpretive element of interactivity also plays a role since the digital game is displayed on a screen. This is also acknowledged by creators of digital games who often add information for the player about such things as game time, avatar health, etc. in a type of heads up display that is placed on the screen alongside or over the often graphically immersive gameworld. This fits the findings of the discussion of McLuhan’s fourth law of media in which we found that digital games, though immersive, are inherently tied to the physical world. Thus the physical body of the player, viewing the game on the screen and manipulating it through the controls, should not be excluded from the magic circle of digital games. The magic circle extends beyond the gameworld to include the player’s physical body.

The concepts of time and space are also relevant in relation to the gameworld. Firstly since the gameworld can represent anywhere it negates the need to actually go to a physical field of play. One location with a hardware platform on which to play a digital game can contain a hockey arena, a soccer pitch, a World War II battlefield, and a land of orcs and humans within a short time span by simply changing the digital game. The digital game also offers computer opponents available to play against at any time, and offers more complex solo gameplay than existed before digital games. Digital games also affect our sense of time since the gameworld can have its own sense of time separate from time in the ‘real world’. Time can move at a different pace so that for instance several ‘days’ in the gameworld can pass in a matter of ‘real world’ minutes. The sense that time moves differently during digital gameplay also comes into play when talking about immersion in digital games.

The concept of immersion is often used to describe a state of mind that includes a feeling of deep involvement and a loss of sense of self and sense of time that can occur in the use of many media. The concept can be described using Mihaly Csikszentmihalyi’s term flow. He uses this term to describe what he calls ‘optimal experience’ and describes four key attributes of the feeling of flow. The first is what Csikszentmihalyi describes as one of the most distinctive features of flow; the merging of action and awareness. In a flow situation a person uses all of his relevant skills to

cope with an activity, and no psychic energy is left over to process any other information than that offered by the activity. This leads to an involvement so deep that the activity becomes spontaneous and near automatic, and the person stops [...]being aware of themselves as separate from the actions they are performing” (Csikszentmihalyi 53). This is closely tied to the second key attribute of flow which is the loss of self-consciousness. Self-consciousness is one of the things that are blocked out when action and awareness is merged in the flow state. It does not mean a loss of self, but rather a loss of the consciousness of self because the concept of self is blocked out of our awareness. This can lead to self-transcendence and investing all of our psychic energy into “[...]an interaction—whether it is with another person, a boat, a mountain, or a piece of music—she in effect becomes part of a system of action greater than what the individual self had been before” (Csikszentmihalyi 65). The third key attribute of flow is concentration. This concentration is aimed at the task at hand, and lets the person focus completely and forget unpleasant aspects of life. Csikszentmihalyi calls the fourth key attribute of flow the transformation of time. By this he means that whilst experiencing flow time no longer seems to pass the way it normally does. One can feel like time moves much faster than normally or it can feel like time freezes (Csikszentmihalyi 48-70).

The condition of flow is closely tied to religion and games.

Csikszentmihalyi states that “Many of the optimal experiences of mankind have taken place in the context of religious rituals”(76). Among these optimal experiences are art, drama, music, dance, and games. These grew out of religious ceremonies, but have since lost their supernatural meanings and are practiced because they make us feel better physically or mentally. Csikszentmihalyi also describes that since flow activities are freely chosen and intimately related to the sources of what is ultimately meaningful for us they are more precise indicators of who we are than our productive activities. This view of flow activities, including games, has similarities to McLuhan’s view that games provide release of particular tensions and that games are collective dramatic re-enactments of a people’s psychological lives that “[...]reveals a great deal about them (Understanding 238).

There are four key requirements to creating flow: a challenging activity that requires skills, clear goals, clear feedback, and the paradox of having control in an uncertain situation. A challenging activity that requires skills is not necessarily active in the physical sense, nor need the required skill be a physical one. An example of this would be reading which requires not only the skill of literacy but also the ability to understand metaphors, plot twists, character motivations, and more. Any activity contains a number of opportunities or challenges, ranging from competitions to studying a particularly challenging piece of art. These challenges need to fit into a golden ratio between challenge and skills to create a state of flow. If a challenge is too difficult the person will be frustrated, and if the challenge is too easy the person will be bored. The clear goals mean that one has to know the goal of the activity, how to achieve it, and when one has achieved it. Therefore it is highly dependent on clear feedback which is necessary for, and contributes to, flow when it is related to the goal. By the paradox of having control in an uncertain situation Csikszentmihalyi means that the activity must give the person a sense of control, or at least lack the sense of worry about losing control that exists in real life. This sense of control only comes by giving up safety of protective routines since [...]only when a doubtful outcome is at stake, and one is able to influence that outcome, can a person really know whether she is in control” (Csikszentmihalyi 61). Csikszentmihalyi states that “This sense of being in a world where entropy is suspended explains in part why flow-producing activities can become so addictive” (61). Like a digital game a flow situation is thus a contrived situation that “[...]goes with an awareness of huge disproportion between the ostensible situation and the real stakes” (Understanding 244).

The state of flow described by Csikszentmihalyi, as closely tied to religion from the ‘earliest times’, and as having since lost their supernatural meanings and instead be practiced because they make us feel better physically or mentally can be equated with what McLuhan called the old magic of total involvement. Csikszentmihalyi’s statement that since “[...] contemporary flow activities are secularized, they are unlikely to link the actor with powerful meaning systems such as those the Olympic games or the Mayan ball games provided” (77) is paralleled by McLuhan’s notion that as ancient and nonliterate societies were detribalised “Art, like games, became a mimetic echo of, and relief from, the old magic of total involvement” (Understanding 237). In the discussion

of the third law of McLuhan's tetrad laws of media it was argued that the retrieval of participation from the game medium in digital games leads to the unconscious retrieval of the echo of the old magic of total involvement. In order to examine this notion further it is relevant to examine whether digital games fulfill the requirements of a flow activity and, if so, how the hybrid medium of digital games helps generate the state of flow or immersion.

The four requirements for flow seem to be present in digital games. A digital game can be seen as a challenging activity which requires skills since it offers various challenges that need to be completed. These require skill in using the controls as well as in attuning one's use of the controls with what one interprets is going on in the gameworld displayed on the screen. Digital games often allow the player to find the golden ratio of between frustration and boredom by offering different 'difficulty settings' which adjust the operational rules of the game. Thus the flexibility of the digital game rules, allowed by the use of the computer's encyclopaedic capability to easily and quickly store and retrieve different sets of operational rules, add to how digital games function as a flow activity.

At first glance the clear goal required for flow, meaning that there has to be a clear objective, a clear way of achieving this objective, and a clear way of knowing when the objective has been achieved, are not available in digital games since players often do the final objective of the digital game. However, upon closer inspection many digital games instead offer a series of objectives or sub-objectives that are clear and offer clear ways of achieving them and some type of reward, in the form of points, tools for doing the next objective, or in revealing the next objective, leading up to the main objective of the digital game.

The feedback required in the flow situation fits with McLuhan's notion of interplay since the input put into digital games by a user causes feedback. As seen this is available in digital games since player input via the controls causes feedback both through the avatar's reaction to the input from the controller, but also from the digital game's reaction to the actions of the avatar.

Input is also closely related to the paradox of having control in an uncertain situation. Here the objectives or challenges provided by digital games provide the doubtful outcome which is at stake, and the player can influence the outcome through

interaction with the digital game. Furthermore, digital games clearly come with the lack of sense of worry about losing control since any risk in the digital game pertains to the avatar rather than the physical body of the player.

The experience of flow is not built into a medium, but is a subjective experience which can be achieved through its use since it fulfills the requirements for flow. The merging of action and awareness can be found in digital games' extension of man into digital games through interactivity. This extension merges the avatar into the player's image of his body, and experienced digital game players note how controls become near automatic when one is well accustomed to the mappings of the controls in a digital game. Digital games also demand concentration and the loss of self consciousness is mentioned by Giddings and Kennedy who describes how "[...]physical discomfort may recede as the player's skill develops" (Giddings and Kennedy 141-2). The separation of time between digital game time and real world time also seems to add to the experience of transformation of time that characterizes the flow experience. The digital game medium thus fulfills the requirements for a flow activity, and can produce the attributes of a flow experience. Therefore it can be argued that digital games retrieve the echo of the old magic of total involvement found in games.

The hybrid nature of the digital game medium, as a hybrid between the game and the computer medium with the game medium serving as the content medium, gives the digital game medium its features of interactivity and interplay, flexible and complex rules, as well as gameplay in the digital gameworld through the extension of man into electric technology. This makes the digital game media hybrid a highly immersive medium which serves as highly complex dramatic re-enactments of our inner psychological lives that provide release from the tensions of our everyday lives, and teaches us to adapt to life in the electric age.

## 5.0 Analysis

This chapter will analyse the digital game NHL10 for the Playstation 3 platform as a media hybrid. It will begin with a brief explanation of why NHL10 has been chosen as an example, and then continue with an analysis focusing on the elements of rules, interplay, interactivity, embodiment, immersion and time and space.

The digital game NHL10 for the Playstation 3 platform has been chosen as the subject for the analysis of a digital game as a media hybrid. It has been chosen since it is a typical example of a digital game belonging to the 'sports' genre within digital games. NHL10 also fits the definition of a digital game since it is digital in nature, played on a hardware platform that animates and displays parts of the digital game a TV screen, and is affected by user input. Furthermore, NHL10 emulates a game, ice hockey, and its promotional material promises that the experience is "[...]just like real life"(NHL10 Game Info) when played, but also offer various game modes that move beyond the emulation of ice hockey. I hope that this affinity to a game will also help to clarify some of the similarities and differences between the game and the digital game medium.

The digital game NHL10 allows the player to choose between the 'Play Now', 'Battle for the Cup Now', 'Playoff', 'Season', 'Be a GM', 'Tournament', 'Be a Pro', 'Create Play', 'Practice', and 'Shootout' modes. Each of these game modes has its own set of constitutive rules, which means that they have different start positions and overall objectives. A precise description of the constitutive rules of the various modes is beyond the scope of this thesis; However, a brief description of the objectives of the various modes will serve as an example of the high complexity of the constitutive rules.

The overall objective of the 'Play Now' mode is to win a single emulated ice hockey game. This is expanded on in the 'Battle for the Cup Now' mode in which the objective is to play and win the final series of the Stanley cup playoffs allowing the player to choose which teams are battling for the cup, and whether the length of the playoff series should be three, five or seven games. The 'Playoff' mode extends the elements of the 'Battle for the Cup Now' mode to an entire playoff campaign to win the Stanley Cup title. The season mode builds further on the play now mode and the playoff mode by letting the player play out a season in one of seven leagues. It also increases

the complexity of the rules by putting the player in charge of editing the team lineup as well as signing and trading players. This mode also allows the players to either play the individual games or simulate entire games or parts of them, adding further to the complexity of the operational rules. The goal is to win the league championship, and when the season ends so does the 'Season' mode game. The 'Be a GM' mode lets the player continue playing for up to 25 seasons managing an NHL squad. This adds the extra dimension of scouting and drafting players in the NHL draft each season. The goal of the 'Be a GM' mode is to earn enough points to achieve 'legendary GM status.' These points are given for fulfilling specific GM tasks during the 25 seasons. The 'Tournament' mode lets the player choose between two tournaments; one in which the player can play using national and one in which the player chooses the teams and plays against the Centennial Montreal Canadiens® team with the goal winning the tournament. The 'Be a Pro' mode allows the player to either select an existing NHL player or create their own, choosing the looks, physical characteristics, name, birthplace, birthday, and the player type which, determines the initial skillset of the avatar, and to play through the career of the player. This can be done by playing each shift the player takes on the ice, by playing every player at the team playing the same position, or by playing the entire game with no line changes. The objective is to become a better player by gaining points given in every game and using these to increase the skill level of the player as well as winning titles and personal awards (NHL10 Game Manual 10-14).

The 'Create Play', 'Practice' and 'Shootout' modes differ from the modes of play mentioned above in that they do not emulate an entire hockey game. The create a play mode differs in that it lets players create a preset 'play' to be called and used as a tactical element in gameplay during any of the other modes, meaning that the goal is to create a play that will prove successful in the other game modes. In 'Practice Mode' the player can choose between shooting and skating drills, team practice and goalie practice. The shooting and skating drills allow the player to choose an NHL player to control as he completes a drill repetitively with no end goal other than improving one's previous result. In both team and goalie practice the player chooses a scenario to play repetitively against computer controlled players gaining a point every time the player's side 'wins' the situation by either scoring or preventing a goal (NHL10 Game Manual

10-14). The shootout mode focuses on the shootout element of an ice hockey game pitting two teams against each other in a shootout following the official NHL rules.

As described the high multilayered complexity of the constitutive rules of NHL10 contains a wide array of objectives. In order to be successful the player needs to organize and prioritize these objectives, and thus train his ability to telescope. An example of this is GM mode in which the player's ultimate goal is to become a legendary GM. This is done by earning GM points which can be earned for various tasks. One of these tasks is to win the Stanley cup, and in order to do this the player has to win hockey games. In order to win hockey games the player has to field a competitive team and use it to beat the opponents during gameplay. In order to build a winning team the player has select appropriate training schedules for players, draft future stars, sign free agents, and trade players. In order to be successful in this the player can use experience points gathered through successful games to improve various GM skills to can help him by increasing his ability in scouting, negotiating, training, etc.. The constitutive rules of the NHL10 GM mode thus force the player to prioritize and organize many goals, and as a result help the player train his ability to telescope.

Having seen the multilayered complexity of the constitutive rules of NHL10 it also becomes clear that these game modes are all built around the hockey emulation part of the game, with the partial exemption of 'create a play'. This part has the same operational rules within the various modes and the examination of NHL 10's rules will thus center on this element of the digital game.

The constitutive rules of the ice hockey emulation part of NHL10 are very similar to those of the game of ice hockey. A general description of the constitutive rules shows that the game consists of two teams of six players playing in a rink for 3 periods of a set amount of time. Both teams start with a score of zero, and the objective of the game is to score more goals than the other team. One major difference between ice hockey and NHL10 in relation to the constitutive rules is that one player can control all the players on a team at various stages of the game, whilst the computer controls the remaining players. The player can also choose to control all players at a certain position, or to control a single player throughout the game. When playing

multiplayer games up to seven players can participate on the same console playing on either side, online play works in similar fashion.

The operational rules of the hockey emulation part of NHL10 both borrow and differ from the operational rules of ice hockey in significant ways. A large part of the operational rules in NHL10 are based on the rules of the game of ice hockey. The rules of ice hockey function to govern what the player can and cannot do in the interaction with the other players and determine the penalties for violating these rules. For example slashing or holding results in a two-minute penalty giving the opposing team a two-minute power play. The ability to commit such faults is governed by the game rules that govern the interactions allowed by players and could have easily be left out. However, as these faults are considered part of the game by many, it is possible to get away with hooking or slashing an opposing player and potentially gain an edge from this, they have been made a part of the operational rules of the game. The digital game allows a certain level of flexibility with regards to the operational rules. The player is given the option to choose between the set of ice hockey rules to use, international or NHL rules, or to play with no operational ice hockey rules at all. The player can also change elements such as how the offside rule is called, whether the icing rule should be called or not, and the frequency with which penalties, the game rules of ice hockey, will be called. Another element of flexibility related to the operational rules of hockey is that the player can choose the length of each period of play between four and twenty ‘real world’ minutes. This means that the time shown in the digital game, which is twenty ‘gameworld minute’ periods, move faster if the player chooses four minute periods. The player can also choose the penalty time scaling to decide how penalty time fits between in gameworld time and real world time. For instance setting the penalties to fit real world time and selecting four minutes as the length of a period will mean that a penalty will last ten gameworld minutes.

The operational rules of NHL10 also regulate elements that are not related to the operational rules of ice hockey. These are called ‘Gameplay Settings’ and allow the player to change things such as game speed and the amount of computer aid the player receives. For computer aid the player can choose between casual, normal, and hardcore settings. On the casual setting the computer makes up for player mistakes

during the game, on normal it gives some aid and on hardcore the computer leaves the player alone. Elements such as puck control, shot accuracy, fatigue effect, player acceleration, and attribute effect can be set at various levels affecting the gameplay experience. These can also be set at different levels for the player and computer controlled player giving either one a rule based advantage during gameplay. NHL10 also allows the player to select the difficulty level of the game between rookie, pro, all-star, and superstar level which controls the level of ability of the computer controlled opposition and sets the game settings at predetermined levels to give the player the desired level of difficulty. The operational rules of NHL10 also include elements of what is considered implicit rules in ice hockey. Such elements include that when trying to fight an opposition star player other players, most likely enforcers, from the other team will try to interfere and fight instead. It also includes the fact that winning fights, big hits, and goals can make the home crowd cheer louder and boosts the team's spirit improving their performance. The operational rules also map out the controls of NHL10. As seen in the excerpt of the control mapping in figure 1 these are quite complex and therefore NHL10 also offers a simpler set of controls, NHL94 controls, which can be seen in figure 2. These are drawn from an older version of the NHL digital game franchise, NHL94, and can be seen as an excellent example of how the operational rules of digital games have become more complex as the computational power of the hardware platforms have increased. The NHL10 thus draws on the rules of ice hockey, but extend them in various ways using the computational power of the computer to move beyond these rules and create a set of highly complex and flexible rules.

COMPLETE CONTROLS		
Beat your fiercest rivals to the puck and use every skill in your arsenal to experience the explosive power of hockey with <i>NHL™ 10</i> .		
<b>OFFENSE</b>		
<b>SKATING/DEKING</b>		
	Default Controls	Classic Controls
Skate/Aim (pass and shoot)	left stick	left stick
Glide	left stick (release)	left stick (release)
Deke	right stick ←/→	right stick ←/→
Loose puck deke	<b>L1</b> button + left stick/ right stick	<b>L1</b> button + left stick/ right stick
Vision Control	<b>L2</b> button	<b>L2</b> button
Push puck	<b>L2</b> button (tap when you have the puck)	N/A
Protect puck	<b>○</b> button	N/A
<b>SHOOTING</b>		
	Default Controls	Classic Controls
Wind up	right stick ↓ ↑ (Release)	N/A
Shoot puck/Slap shot	right stick ↑	<b>○</b> button
Wrist shot	right stick ←/↖/↗/→	<b>○</b> button
Fake slap shot	right stick ↓ (release)	<b>L2</b> (press and hold) while releasing the <b>○</b> button
Fake shot with leg kick	<b>R3</b> button	<b>L2</b> button (press and hold) while releasing the <b>○</b> button/ <b>○</b> button
<b>NOTE:</b> All shooting controls are based on players moving toward the top of the game screen. You can change the Shooting Controls from CAMERA RELATIVE to ALWAYS UP via the Controller Settings menu or pause menu. You can also change the game controls from Default to Classic from here.		
<b>PASSING</b>		
	Default Controls	Classic Controls
Pass	<b>R2</b> button	<b>○</b> button
1 touch pass	<b>R2</b> button (press and hold)	<b>○</b> button (press and hold)
Saucer pass	<b>R1</b> button	<b>R1</b> button
Dump puck	<b>R1</b> button (press and hold) + right stick ↑	<b>R1</b> button (press and hold) + right stick ↑
Drop pass	Release left stick and tap the <b>R1</b> button	N/A
<b>NOTE:</b> For Hardcore mode, users have full control of the direction of their pass (open passing) and full control of the speed. Tapping the <b>R2</b> button will give a short/slower pass, while pressing and holding the <b>R2</b> button gives a longer, harder pass.		
<b>DEFENSE</b>		
	Default Controls	Classic Controls
Move	left stick	left stick
Switch player	<b>L2</b> button	<b>○</b> button
Body check	right stick (in direction of player)	<b>○</b> button
Poke check	<b>R1</b> button + right stick	<b>○</b> button
Stick lift	<b>○</b> button	N/A
Stick sweep	<b>R1</b> button (press and hold) for contextual sweep or right stick + <b>R3</b> button (press and hold) for manual control	N/A
Instigate fight	<b>○</b> button (start fight)	<b>L1</b> button
Slash	<b>L2</b> button + <b>○</b> button (post whistle only)	<b>L2</b> button + <b>○</b> button (start fight)
Dive/Block	<b>L1</b> button + <b>R1</b> button	<b>L1</b> button + <b>R1</b> button
Pin player to boards	<b>○</b> button (press and hold)	<b>L1</b> button (press and hold)
Offensive boardplay with puck	<b>○</b> button (press and hold with puck near boards)	N/A
Pass block	<b>L1</b> button (press and hold) + right stick for manual control	N/A
Manual goalie	<b>L1</b> button + <b>○</b> button (press and hold)	<b>L2</b> button + <b>○</b> button (press and hold)
Pull goalie	<b>L1</b> button + <b>SELECT</b> button	<b>L2</b> button + <b>SELECT</b> button
Last man back	<b>R2</b> (press and hold)	<b>○</b> button (press and hold)

Figure 1

NHL™ 94 CONTROLS	
Go back to the basics and use the simplified control scheme from <i>NHL 94</i> in your quest for greatness.	
<b>OFFENSE</b>	<b>DEFENSE</b>
Move player	left stick
Aim shot (while shooting)	left stick
Shoot	<b>○</b> button
Pass	<b>⊗</b> button
	Switch player <b>⊗</b> button
	Check <b>○</b> button

Figure 2

The operational rules of NHL10 also provide the interplay of the game. This interplay arises from three main factors. Firstly, the give and take between the player controlled avatar(s) and the computer- or other human controlled players. Secondly, between the player, the player controlled avatar(s) and the interactive atmosphere of NHL10, and thirdly the interaction between the player and the digital games' operational rules through the controls. The give and take between the player controlled avatar(s) and the computer- or human- controlled players, on either the player's own team or the opposing team, is similar to that of the game of ice hockey with the difference that computer controlled players are programmed to behave in specific ways. This means that players can probe the game to discover patterns in how the computer reacts to certain situations, dekes, or moves and exploit them to win the game. The

computing power and encyclopaedic value of the computer which allows fast calculations, near instant retrieval of data, and a large amount of storage capacity, means that such patterns in the operational rules can be very complex. An example of this is that the NHL10 promotional material mentions that this version of the digital game franchise has “Over 200 gameplay refinements, including new offensive and defensive AI for more intelligent positioning, and new in-game facial animations that show player emotion when delivering bone-crunching checks or celebrating game-winning goals” (NHL10 Features). The operational rules governing the interplay between the player and the computer-controlled opposition can be edited by changing the difficulty settings or otherwise changing the game settings.

NHL10 also provides the possibility of interplay with human opponents through online play. NHL10 offers three types of online play. Online versus, which is similar to the play now mode, except played online against another human player, shootout mode, and EA Sports Hockey League which allows players to get together and create a team, each player filling a certain position on the team, to take on other teams. These teams can consist of players from anywhere in the world and could play a team consisting of players from anywhere, and no players would be able to know the real world identity, nationality, or gender of the opponent unless this information was disclosed by the player himself through team or avatar names, chat etc..

Interplay is also created by elements of the game world. The quote from the NHL 10 Features mentioned above also describes gameworld elements such as facial animations that show player emotions. A larger part of the gameworld that provides interplay is the interactive atmosphere of NHL10 which includes “[...]deafening noise and crowds that react and respond to the action on the ice. Fanatical fans bang glass during board play, spring to their feet after big hits, and boo opposing stars when they handle the puck” (NHL 10 Game Features). This element of the gameworld is governed by the operational rules, and provides interplay since it is a reaction to player interaction with the gameworld. This digital audience element is comparable to McLuhan’s notion of spectators as a major part of interplay in relation to games. In NHL10 this element is coded into the operational rules, and the skill set of the avatars, whether player or computer controlled, receive a boost or decrease in attribute levels from this interaction.

The interplay of NHL10 also comes from the player's use of the controls. The use of the controls results in a reaction in the game, the avatar moves, shoots, dekes, passes or checks if the controls are used correctly. This is closely related to the first element of interplay, but separate since it focuses on the player's basic interaction with the game. The use of the controls also forces the player to probe the game rules related to the mapping of the controls. The game manual provides information on which buttons have which effects, but it is up to the player to use them and combine them in ways that will create the desired reactions. For instance moving the right stick whilst on the puck during gameplay in NHL10 will result in the avatar making a deke, a shot, or fake a shot, but the player has to figure out how to move the stick in order to produce certain types of dekes and shots. Probing the controls will make clear set patterns that the player can use when probing the part of the operational rules that govern the interplay between the player controlled avatar(s) and the computer or human controlled players. NHL10 creates interplay in several different ways that are all related to the operational goals of the game. The interplay created by the give and take between the player controlled avatar(s) and the computer- or other human controlled players and between the player, the player controlled avatar(s) and the interactive atmosphere of the game are both created by retrieving elements normally found in the game medium. The final element of interplay, the interaction between the player and the digital games' operational rules through the controls, draws on a computer element. These elements are retrieved and used in a new way in the digital game medium where all interplay is based on the interaction between the human user, the hardware computer platform, and the digital game.

It is the interactivity between the player(s), the Playstation 3 platform, and NHL10 that allows the player to extend himself into electric technology to become discarnal and then embodied in the avatar in NHL10. As mentioned there are various options available to the player in relation to avatar control. The player can choose to control either one hockey player avatar throughout the entire game, sit on the bench when he is not on the ice and the penalty box when he gets a penalty or, to control all players at a certain position. The player can also choose to control all players on a team, meaning that when a player on his team has the puck the player controls it and when the opposing team has the puck he can switch between the two players closest to the puck.

Playing NHL10 the player gains a sense of ownership of agency through the interplay between the user's use of the controls and the reaction of the avatar(s) in the digital game. It draws on both the physical and interpretive elements of interaction, physically pushing the buttons on the controller and seeing a reaction on the screen. Through this ownership of agency NHL10 builds up the ownership of body. NHL10 adds to this ownership of body by using the 'rumble' function, available in for instance the Dual Shock 3 Sixaxis controller that comes with the Playstation 3, to physically shake in the player's hand when the avatar makes or takes a big hit in the digital game. It can be argued that such haptic output impedes immersion by reminding the player that he is indeed not incarnate, but grounded in a physical body outside the gameworld. I would instead argue that such output augments and reinforces the action displayed on the screen by letting the player physically feel what is happening to the incarnal self embodied in the avatar, and thus adding to the experience of embodiment and immersion. The latter is argued by James Newman who states that "The rumble-pak not only validates the action contained on-screen, but also completes the interface loop which, previously, had consisted of only non-registered haptic inputs/outputs" (Newman 416).

The Be a pro mode of NHL10 adds another dimension to the sense embodiment since it allows the player to create his own avatar choosing the name, birthplace, player type, physical characteristics such as height, weight, facial features etc., as well as allowing the player to add earned skill points to certain attributes of the player, thus molding his skill set. NHL10 also allows the player to add equipment with different looks and a number of boost slots to which players can add boosts of various skills. The equipment and boosts have to be unlocked either by completing certain game tasks, adding another type of objectives to the game, or by purchasing them, which shows that this game moves beyond the magic circle allowing the economic capacity of player's to allow them to 'skip' these objectives. I would argue that this ability to change the skill set of the avatar as well as the appearance of the avatar in the gameworld, a feature usually found in role playing games and digital role playing games, add to the player's sense of ownership of body.

The gameworld created for the part of NHL10 that emulates ice hockey games is made to graphically represent the real world arenas belonging to the various teams available for play in the game as authentically as possible, and as mentioned includes spectators in the stands. More importantly the graphical gameworld also visually contributes to the constitutive rules of the digital game by showing the position of the sideboards, which mark the limits of the magic circle of the ice hockey game, as well as the goals, the faceoff circles, the referees, and the players. The graphical gameworld also function with the operational rules, the player cannot pass through the boards and it is possible to receive a penalty for shooting the puck over the boards and out of play. As mentioned the graphical representation of the player's avatar works with the digital games' operational rules to create a sense of ownership of agency and body. Another way the graphical gameworld does this is by clearly marking the player-controlled avatar with a red cone, and thereby ensuring that the player knows which avatar he is controlling. This supports the interpretive elements of interactivity that relates to ownership of agency.

The gameworld is not only created by graphics, but also by the use of sound. The audio element of the gameworld includes commentators. The play-by-play is called by Gary Thorne, a recognized play-by-play commentator who has done play-by-play for ice hockey games on the ESPN and ABC television networks (Gary Thorne). The color commentary is by Bill Clement, former NHL player and commentator for the ESPN and NBC television networks. The play-by-play and color commentary found in NHL10 can be seen as an example of NHL10 retrieving TV, bringing this medium back from the 'rag-and-bone shop' of obsolesced clichés, and utilizing it in a new way. The sounds used in NHL10 also include the crowd, as well as the referee, players' skates on the ice, shots, pucks bouncing of the boards or the goal posts, players being pushed into the boards when receiving a hit, and more. These sounds, governed by the operational rules of the game can add to the interplay. An example of this is in relation to the interplay between avatars and spectators where the audio alerts the player of the level of excitement of the crowd. They can also add to the ownership of body since the sound of the player's avatar being crushed into the board by a hard hit, along with the 'rumble' shaking the controller, can make the player wince similar to Gregersen and Grodal's

example of a person wincing when he scratches his car. Thus the audiovisual gameworld helps create the player's sense of embodiment.

When examining the concept of immersion in relation to NHL10 we see that it can be conducive to the state of flow. As mentioned the state of flow is not built in to any media, but a medium can be conducive to flow if it fills the four requirements for flow. The first requirement for a medium to be conducive to flow is that it should be a challenging activity that requires skill. This is true for NHL10 in that it requires a certain level of skill to master the controls and to recognize the patterns of action that will bring you the desired results. NHL10 also fulfills the second requirement for flow, clear goals, in that the various goals of the game, such as winning a hockey game, a season, skill points, or GM points, are clearly stated throughout. The third requirement for flow, clear feedback, is also found in NHL10. Feedback exists in the game through the various forms of interplay between player, the Playstation 3, and the rules of NHL10, which also allows the player to extend himself into electric technology and become embodied in the gameworld. The reactions to the player's interaction with the controller can be seen nearly instantly on the screen, goals can be seen on a scoreboard overlay on the screen, another example of NHL10 remediating television, and wins in season, be a pro, and GM mode can be seen in tables showing the standings, just as GM points in GM mode and skill points in be a pro mode can be seen in game menus as well. The fourth requirement for an action being conducive for flow, the paradox of having control in an uncertain situation, is also described as the lack of the sense of worry about losing the sense of control that exists in real life. This fits NHL10 since the things that happen to the player controlled avatar in the game does not physically affect the player, and since a win or a loss does not affect the life of the player in any major way. Csikszentmihalyi states that the sense of control only comes by giving up the safety of protective routines which is what we do when we play a digital game, subjecting ourselves to the control of the rules which govern the digital game (Csikszentmihalyi 61).

The experience of flow is a subjective one that can be experienced differently by players, but it is possible to examine how NHL10 helps create the sensations that are attributed to the experience of flow. The merging of action and awareness happen when

the actions become near automatic. In the case of NHL10 the actions are the use of the controls to achieve in game goals. Due to the complexity of the controls of NHL10 it can be difficult for the use of these to become near or totally automatic to the player. This is alleviated by the possibility to use the simpler NHL94 controls which make it easier for a new or low skilled player to internalize the controls in a way so that action and awareness can merge. The loss of self-consciousness is a subjective experience that is hard to define though it can be tied to the extension of man into electric technology and re-embodiment in the avatar. The concentration necessary for flow is created by the constant demand for interactivity in NHL10 where a moment of not interpreting what is being displayed on the screen or giving input to the avatar can result in a goal to the opposing team. The feeling of transformation of time can also be aided by NHL10 through the possibility to separate game time from real world time. Csikszentmihalyi also writes that flow appears when the activity fits within a golden ratio of between frustration and boredom which NHL10 assists the player in finding by allowing him to change difficulty settings or adjust other game settings to create an optimal experience that will produce flow. The rules and the complexity and flexibility of these make the digital game NHL10 highly conducive to flow for players at various skill levels (Csikszentmihalyi 72-77).

This analysis has shown that the hybrid nature of NHL10, drawing on elements from the game and computer media that make up the hybrid, that creates a complex and flexible digital game. The digital game is more complex and flexible than the game of ice hockey whilst keeping its operational rules, and thereby utilizing the pattern of the game which relates to the inner lives of people and increasing its complexity. NHL10 extends beyond its components to allow man to extend into electric technology, and create a medium that is highly conducive to flow, creating a highly immersive experience thus retrieving the echo of the old magic of total involvement from the game medium. NHL10 functions to create a similar release of particular tensions provided by games whilst helping the player to adapt to the constant stream of information coming at us from all sides in the electric age by improving the pattern recognition skills of the player.

## 6.0 Reflections

Following the analysis of digital games and NHL10 as a media hybrid this chapter will reflect on some of the potential points of criticism which could be directed towards the use of McLuhan's concept of hybrid media and its application to the analysis of the digital game medium.

One issue that can be raised with regards to the use of McLuhan's concept of hybrid media is that his apolitical stance leads him to ignore factors outside of the media ecology, which may influence their creation or use. In relation to digital games such outside factors might concern economics of digital game production, which has become a major business. The increased complexity of the development process for many digital games and hardware platforms has made the production of many digital games a highly expensive venture and limits the possibilities for smaller developers. Such a development is also induced by the large marketing efforts that accompany some digital games and influence sales. Economics can also influence the creation of certain digital games such as those based on movie licenses or sequels, such as EA Sports' NHL series in which a sequel has been published yearly since 1991 (The Complete History). The economics of digital games thus affects the type of digital games available to players and as development costs need to be recouped the price of digital games can also limit the number of people who can afford digital games. McLuhan would most likely disregard such criticism arguing that the real power in relation to media is not found in political or economic structures, but in the power of media to shape and control the scale and form of human association.

Two other points of criticism can be that McLuhan's idea of the game medium as "[...]dramatic models of our psychological lives providing release of particular tensions" (Understanding 237) is unsubstantiated by scientific data, and that Eskelinen's belief that interpretations of digital games as cultural reflections are projections of the interpreter's own understanding of the digital game is true. It is true that the idea of games as a form of cathartic experience is not backed up by scientific data and should be studied further. However, the long standing notion of catharsis used in relation to Greek drama, literary theory and psychoanalysis would indicate that there is some validity to the notion of catharsis in relation to games as dramatic models of our inner

psychological lives. Narrative interpretations of digital games are a contented topic, but McLuhan's notion of games as cultural reflections, though admittedly underexplored, offers a partial explanation of why some games are more popular than others and why games seem to develop over time. The notion of games as cultural reflections providing release both relate to the definition of the game medium, and therefore one could potentially disagree with these points without discarding the hybrid media approach to the digital game medium.

It can be argued that by examining the media that make up the digital game media hybrid, we commit ourselves to a case of 'rear view mirrorism' or marching "[...] backwards into the future" (McLuhan McLuhan, Fiore, Angel 74-5). Therefore it is important to focus on how the various elements of these media that make up the media hybrid function in the new media, and how the media hybrid moves beyond its component parts rather than merely focusing on which elements are used. This allows us to study the new medium in the media ecology and examine how it functions and affects us.

## 7.0 Conclusion

The goal of this thesis has been to offer an approach to digital games which drew on the work of Marshall McLuhan to analyse the digital game medium as a media hybrid between the computer and the game media with the game medium functioning as its content medium.

The use of McLuhan's concept of hybrid media over the more commonly used concept of multimedia, defined as the combination of different media in one package, allow us to place the medium within the media ecology. This lets us analyse how the media hybrid draws upon other media and moves beyond these to form a new medium, as well as how this new medium affects its users.

In order to analyse the digital game as a media hybrid the pair of media that make up the digital game media hybrid, the game and computer media were defined. Drawing on McLuhan's description of the game medium supplemented with insights from Johan Huizinga and others the game medium was defined as extensions of group awareness expressed as "[...] dramatic models of our psychological lives providing release of particular tensions" (Understanding 237). These models take place within the temporal and spacial boundaries of the magic circle, defined by the conventions of the game, within which we "[...] consent to be puppets for a time" (Understanding 238), surrendering ourselves to be governed by the rules which obtain within the magic circle, and make up the formal pattern of the game that reflects our culture, fully aware that the gaming situation is separate from ordinary life. By drawing on McLuhan's tetradic analysis of the computer medium, supplemented by the work of others, the computer medium was defined by its computing power, memory, audio visual capabilities and its interactive qualities.

By combining the definitions of the computer and game media with McLuhan's tetrad laws of media, and applying these to the digital game medium as a heuristic device showed the pervasive function of the game medium in obscuring the operation of the digital game medium, and helped place the digital game medium within its media ecology. This showed its close relationship between the digital game medium and the computer and game media, and helped bring attention to the closely related

subjects of rules, interplay, interactivity, embodiment, immersion, time and space and their importance when analyzing the digital game medium as a media hybrid.

The closer analysis of these features of the digital game medium shows how it functions as a media hybrid by drawing on the elements of the game and computer media and moving beyond these to form a new medium. The examination of the rules of the digital game shows that these govern the goals, objectives, and interplay within the digital game, drawing on the rule element of games and the computational power of the computer. These also govern the player's interactions with the digital game through the computer hardware by mapping out the controls. Drawing on the computational power of the computer medium allows for a higher complexity of rules and a higher number of objectives. An example of this can be found in NHL10 where various game modes expand on the hockey emulation part of the digital game increasing the complexity of the rules as well as the number of objectives. The rules and objectives in digital games are usually not known to the player before play commences, but are learned during play. The many emerging objectives train the player's ability to 'telescope', meaning to remember and prioritize these objectives to create order, putting each objective inside each other like the elements of a telescope. Learning the complex rules of digital games whilst playing them trains the player's ability to recognize patterns in the rules of digital games. Digital games thus teach the player skills which are necessary to deal with the instantaneous flow of information from every part of a situation which comes at us from every direction in the electric age.

The interplay found in digital games can be found in both the give and take between players and the player's interaction with the digital game through the controls. When examining the interplay in digital games it becomes clear that the digital game draws on the game and computer media to create more complex interplay in solo play than was ever possible in the game medium by adding computer controlled opponents. By drawing on the Internet capabilities of the computer medium digital games also allow interplay among more players than ever before through online gaming. The interplay between man and/or computer controlled players is possible due to the interplay that exists between the player and the game rules through the controls. This is made possible since the digital game medium draws on the interactivity of the

computer medium, which allows the player to utilize the controls to control the avatar, meaning that an action creates a reaction in the game.

The interactivity, or interplay, between the player and the digital game through the controls is key when it comes to examining the concept of embodiment in relation to digital games. McLuhan notes that in communication the user of a medium is the content, and that the user of electric media of communication such as the telephone becomes discarnal- a figure without a body. Digital games differ from other electric media of communication in that the player becomes discarnal only to be re-embodied in the avatar present in the on screen gameworld of the digital game. Thereby he extends himself into electric technology. This is supported by findings in cognitive neuroscience which explains how the brain works to extend our body image to include the avatar through a sense of ownership and body and agency. The sense of body ownership and agency is created as the player experiences that he controls the avatar through his use of the controls of the digital game. Though the player thus extends himself into the gameworld he remains grounded in the physical world, and is fully aware that he is playing a game, meaning that he is aware of the disproportion between the ostensible situation in the gameworld and the real stakes.

By extending himself into the digital game the player extends himself into the gameworld which can represent any place and have its own separate physics and sense of time lending credence to the notion of being 'in the game'. This notion is often described using the terms immersion or flow. The state of flow requires a challenging activity which requires skills which can be supplied by a digital game. The challenge must not be too great however since the flow state exists in a golden mean between challenge and frustration. The flexibility of the rules of digital games, exemplified in the vast varieties of adjustable settings and the adjustable difficulty levels of NHL10, ensure that these can offer an ideal level of difficulty for a great variety of players. The fact that the player is seldom aware of the final goal in digital games seems to exclude them from meeting another requirement for flow, clear goals, but the emergence of objectives throughout the game leading towards the larger main objectives means that players usually have a clear understanding of what the next objective is. Another requirement for flow is clear feed feedback which can be seen in the interplay of digital

games whether it is in the form of reactions to the player's use of the controls or the reactions of computer controlled players. The last requirement for flow, the paradox of having control in an uncertain situation, can also be found in digital games. These give the player a sense of control and take away any sense of worry about losing control that exists in the real world since the player is aware that he is playing a game. Digital games are thus highly conducive to the state of flow which is described by a merging of action and awareness, loss of self consciousness, concentration and a sense of transformation of time which is aided by the possibility for digital games to operate with an independent sense of time. Thus digital games retrieve the echo of the old magic of total involvement found in the game medium.

This thesis has developed an approach to analysing digital games as a media hybrid between the computer and game media with the game medium functioning as its content medium. The analysis has shown that the game medium functions to obscure the workings of the digital game medium. It has also shown the digital game medium draws on the game and the computer media and moves beyond these to create a medium characterized by complex and flexible rules, a high number of objectives, a high level of interplay, the extension of the player into electric technology, and the audiovisual gameworld. These characteristics make the digital game medium a highly immersive medium which retrieves the echo of the old magic of total involvement found in the game medium whilst serving as highly complex dramatic re-enactments of our inner psychological lives that provides release from the tensions of our everyday lives and teach us to adapt to life in the electric age.

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## 8.0 Dansk Resume

Det er målet med dette speciale at skabe en tilgang til digitale spil, der analyserer disse som et selvstændigt medie. Dette gøres ved at trække på Marshall McLuhan's ide om medie hybrider, der gør det muligt at analysere digitale spil som en hybrid mellem spil mediet og computer mediet.

Specialet bygger på McLuhan's ideer om medier, der beskriver at medier er forlængelser af en fysisk eller psykisk del af mennesket, og former og kontrollerer formen og omfanget af menneskeligt samvær, uden at vi er bevidste om det. Derfor mener McLuhan, at formen af ethvert medie er vigtigere end det indhold det kommunikerer. Indhold er dog ikke betydningsløst, da alle medier er hybrider der kommer i par, med det ene medie fungerende som indholdsmedie der skjuler den måde hvorpå mediet fungerer. McLuhan mente, at vi ved at studere mediernes form, kan blive opmærksomme på den måde de påvirker os, og derefter gennemtænke nye medier, før de tages i brug. Vigtigheden af at studere digitale spil, ligger derfor i vigtigheden i at vide, hvordan disse påvirker os som medie.

I analysen benyttes McLuhans tetradiske medie love som et heuristisk værktøj, til at analysere det digitale spil medie. Dette hjælper med at placere det digitale spil medie i den bredere medie økologi, og viser dets nære slægtskab til spil og computer medierne. Brugen af McLuhan's love viser også, i hvor høj grad spilmediet fungerer, for at skjule den måde, hvorpå det digitale spil medium fungerer, og hjælper med at finde frem til de vigtige emner, regler, samspil, interaktivitet, legemliggørelse, immersion, tid og sted, samt det nære forhold imellem disse begreber, der skal undersøges nærmere i forhold til analysen af digitale spil.

Den nærmere analyse af disse elementer i forhold til det digitale spilmedie og det digitale spil NHL10, viser hvordan mediet fungerer, ved at trække på elementer fra spil og computermedierne, for derefter at bevæge sig udover disse og forme et nyt medie. Analysen af regler i digitale spil viser, at disse trækker på både elementer fra spil og computer medierne, for at skabe komplekse regler, et højt antal mål og et komplekst samspil imellem menneske og computerstyrede spillere, samt imellem spiller og det digitale spilmedie, igennem kontrolenheder som f.eks. keyboard, også kaldet interaktivitet. De mange mål og komplekse regler, tvinger spilleren til at organisere og

prioritere målene, og til at finde mønstre i spillereglerne for at vinde. Derved træner spilleren ubevidst disse evner, der er vitale i hvad McLuhan kalder den elektriske tidsalder, hvori vi konstant bombarderes med information fra alle sider.

Interaktivitet mellem spil og spiller igennem kontrolheden er vigtigt, når det kommer til at studere legemliggørelse i forhold til digitale spil, hvor spillerens opfattelse af ejerskab af handling og krop igennem kontrol af avataren, forlænger spillerens kropsopfattelse til at inkludere avataren. Dog ikke i højere grad, end at spilleren er bevidst om sin fysiske krop, og er klar over at han spiller et digitalt spil.

Denne forlængelse af spilleren ind i selve spilverdenen i det digitale spil, er relevant i forhold til immersion. Immersion kan beskrives med begrebet flow, der er kendetegnet ved en fornemmelse af sammensmeltning mellem handling og bevidsthed, koncentration, tab af selvbevidsthed og en ændret tidsfornemmelse, hvilket kan opnås gennem digitale spil, da dette medie kan opfylde de fire krav for at skabe flow: en udfordrende opgave der kræver evner, klare mål, klar feedback, og det sidste krav: paradoxet ved kontrol over en ukontrollerbar situation, eller fraværet af frygten for at fejle. Disse krav opfyldes igennem det digitale spilmedies komplekse regler, samspil, mål, og fordi spilleren aldrig er i reel fare, selvom han gennemfører halsbrækkende stunts igennem sin avatar.

Dette speciale har altså udviklet en tilgang til at analysere digitale spil, som en mediehybrid imellem computer og spil mediet, med spilmediet som indholdsmedie. Analysen af dette medie viste, hvordan spil mediet fungerer for at skjule hvordan mediet fungerer, og hvordan det digitale spilmedie trækker på computer og spil medierne, og går udover disse for at forme et nyt medie, der er karakteriseret ved komplekse og flexible regler, et højt antal mål, et højt niveau af samspil, forlængelsen af spilleren ind i det elektriske medie og den digitale spilverden. Dette gør det digitale spil medie til et medie, der er yderst fremmende for immersion. På denne måde bringer det digitale spil medie ekkot af det gamle magiske totale engagement fundet i spil mediet tilbage, imens det fungerer som komplekse dramatiske udspilninger af vores indre psykologiske liv, der frigiver spændinger fra vores hverdagsliv, og lærer os at fungere i den elektriske tidsalder.