

Yearning for Knowledge

Encyclopedic Endeavor and the Internet

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Abstract: While the impact of the Internet over our established institutions is widely discussed, many opinions lack proper historical knowledge and theoretical understanding. In this study, I take up the topic of *Wikipedia* and aim to provide a more historically grounded and theoretically sound analysis of its significance. A presentation of key texts from the media studies literature is followed by a thorough historical review of the encyclopaedic form. I then turn to *Wikipedia* and discuss its model and go over some of the important criticisms directed towards the project. Drawing on these sections, I provide my insights concerning both the future of *Wikipedia* and also how it can better our understanding of the encyclopedia in general.

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1. Introduction

The Internet is everywhere, from opinion pieces in magazines to scholarly journals, the talk is all about how this new medium is changing our established norms and practices. Some condemn it as a wave of destruction that will wipe out all that is good while others hail it as a revolution that will enrich and enlighten us. Although ambitious in nature, most of the time such grand claims lack true insights about the nature of the Internet, which means they miss the point concerning the ways it is revolutionary. Furthermore, such claims lack the proper historical knowledge of the interaction between communication media and society, so in addition to the fact that many opinions on the Internet and the revolution it brings fail to grasp what the revolution truly is, they also often misrepresent what is actually being replaced.

Amongst this loud confusion and the gradual apathy it induces when it fails to deliver immediately on high expectations, there are a number of very articulate studies on the true promises and dangers of the Internet as our principal form of communication. But, while most of these studies concentrate on the new media and explain their unique qualities excellently, they fail to provide historical links that would be of great significance in establishing the cultural impact of these new media.

My motivation for this thesis is to go beyond the analysis of the latest technologies per se and conduct a much more comprehensive and grounded study of the effects of the Internet on our societies. Amongst the myriad areas where the impact of the Internet is being felt, I have chosen one of our primeval urges as my subject matter; collecting, organizing and storing information. Since our yearning for knowledge is accountable for many things throughout history, for the purposes of this study, I have concentrated on the paragon of this urge, namely the encyclopedia.

Recorded history of the encyclopedic endeavor is as old as the proliferation of writing, and presenting this rich and fascinating history will be an important part of this study. Although our 20th-century understanding of the encyclopedia is a fairly established and limited one, reviewing this history more fully is a revealing exercise that provides insights into the true motivations of encyclopedia formation and the specific areas where it serves the greatest good. But, merely presenting such a broad history can only be perplexing and some form of theoretical framework is essential.

While the 20th-century has seen the greatest multiplication of communication media in all of history, it has also seen the birth and development of the systematic study of the effects of media upon society. Just as the whole history of encyclopedias are helpful in understanding what today's most current examples promise, a thorough review of the media studies literature is relevant in accurately identifying the implications of the medium with which the newest encyclopedias are prepared and distributed. For this reason, I will start my analysis by providing a comprehensive overview of 20th-century media studies literature. Although the scope of the literature that will be covered may seem vast, from the effects of the stirrup in the Middle Ages, to the *soma*-induced euphoric dystopia of Huxley, with all their connections and cross analyses, they represent a much more coherent and powerful theoretical foundation than a simple selection of focused texts would provide, especially when the similarly broad historical coverage of my thesis is considered.

Both the literature review and the historical overview of encyclopedias aim to establish an understanding of what the new media brings to the encyclopedic endeavor. The enterprise that is best suited to represent the revolutionary aspects of the Internet is certainly *Wikipedia*, a web-based freely accessible encyclopedia whose content is open to editing by anyone. Since its establishment, it has become a role model for what the Internet-based technologies can achieve and many laud or condemn it as the future of the encyclopedic form.

For my analysis I will go over the history and mechanics of the *Wikipedia* as a case where many of the novel properties of the Internet can be observed in their prime. After this descriptive section, I will highlight some of the criticism that *Wikipedia* has elicited including ideological objections to its premise and method and criticisms that arise from the social dynamic that is formed within the community of users and editors of the online encyclopedia.

Studying *Wikipedia* through such historically and theoretically comprehensive backgrounds has never been done before and, I hope to address important questions regarding the new media and society with a heightened sense of cohesion and increased overall validity. What does *Wikipedia*, with its content and form, represent for encyclopedic writing in the future? In what issues does the history of the encyclopedia provide the new enterprise with helpful guidance and what aspects of established encyclopedias are merely dismissible conjecture? These are the most critical questions I am hoping to answer, and assessing the relevancy and explanatory power of media studies literature on this issue will be a very important addition to the findings of this thesis.

2. Literature Review – Discovering the Medium

Our writing tools are working on our thoughts.

F. Nietzsche, 1882

2.1. Origins – A Mediated Century

The study of various technologies and their effects on humanity in general and culture in particular has a considerable history. However, as the object of this study is relatively new, dedicated theoretical work is far from comprehensive. Therefore the urgency of a century of media studies is unquestionable in terms of its capacity to provide valuable insights and tools for establishing a theoretical framework in order to analyze the impact of the Internet. For this purpose a brief overview of the history of media analysis will follow, paying particular attention to the *media ecology* school of thought and its important components. The main aim here is not to provide an exhaustive account of theorizing of media but rather to highlight particular theorists and their work that could be related to the problematic of the present study and its object of analysis.

As the 19th century and its fervent industrialization was somewhat settled with help from the crushing force of the First World War, Western societies entered into a period of self-reflection in order to analyze the modifications to the whole social and economic structure. Another important issue was to remedy the institutional and structural shortcomings of rapidly industrializing society, which became devastatingly evident after the economic depression of 1929. In accordance with this stage, the intellectual environment became fertile for studies that related to the actual effects of these transformations and the effects of the machine on culture and the human mind in general. Such studies would eventually take on the issue of communication technologies and become the basis of the media ecology school.

At the outset however, the industry and the machine in general were the prioritized objects and the most comprehensive and influential work on the subject was Lewis Mumford's *Technics and Civilization* (1932). Mumford's main objective was to provide an insight into the way human and machines interacted with each other. Although not a history of machines as such, the book covers the whole history of the evolution of the machine, which Mumford considers to be an essential part of the evolution of humanity. Throughout this

analysis of joint evolution, Mumford pays particular attention to the effects of machine on culture and society, which he chooses to divide into three successive phases, eotechnic, paleotechnic and neotechnic.

The *eotechnic* phase covers the period from 1000 to 1700, where the dominant tools for energy production and manufacturing were related to water and wood. Many significant achievements were made during this period like the windmill, glass making, the printing press and ship-building. Mumford's analysis of the development of glass making and the eventual invention of mirrors reminds one of the later analysis his work partly inspired, as he points out to the connection of this invention with the development of the notion of a self in human minds (Mumford, 1934, 129). Mumford argues that the perfection of mirrors in Venice during 16th century led to an advancement of the notion of a self and heightened sense of self-awareness among those who could afford it. Later, he suggests that the mirror has contributed in the birth of literary genres such as the modern introspective biography. But, before moving on to the next, industrial, stage, Mumford states that the single most important invention of this age is "the experimental method in science" (132). As the method of science turned the chaotic and incomprehensible daily world into analyzable and calculable variables, the myths of everyday existence gradually began to relinquish their hold to the domination of the so-called natural laws of science. Mumford's study of the eotechnic phase is also where one finds Mumford's analysis of the development of the printing press and mass-produced paper, along with the mechanical clock, the two inventions which will become central for many theorists that came after him.

Mumford's work on the printing press starts with an evaluation of the press as a revolutionary technical invention. After a long journey both in terms of space and time, it was Johannes Gutenberg who perfected the printing press around 1440 and it was an astounding mechanical achievement. As Mumford writes, the printed sheet was the first completely standardized product, even before the military uniform, it was also the first uniform production line with interchangeable parts. Along with its cultural and social implications, which would be dealt with in immense detail by the theorists to follow him, as a mechanical production technique, the printing press also pointed to the modern and industrial times lying ahead. When evaluating the effects of printing on society and culture, Mumford claims that moveable type ended the reign of the local and the immediate for the highly atomized societies of the Middle Ages, an argument that will again prove to be very seminal in for his successors. Also of great significance was the mass production of paper which, together with

the printing press, created a society capable of recording all its transactions and encounters, thus enabling a reliable accountancy of time and money. The actualization of time and money were of course crucially important to the development of capitalism along with yet another invention that changed the outlook of society; the mechanical clock.

The development of mechanical clock marks the point at which machines first took form in modern civilization. Mumford's account of the mechanical clock places it in a central position in the transformation of society into its modern phase. The clock first proliferated within the monasteries of the Middle Ages, where time needed to be organized along with the rest of all the elements of social and spiritual life. Through precise adjustment of the timing of the bells of monasteries, the clock started to have a profound effect on urban existence as a whole. Mumford argues that the bell tower made the time-keeping possible, which in turn made possible time-serving, time-accounting and time-rationing (12). Another very important consequence of the mechanical clock, according to Mumford, was the dissociation of time from human events and rendering it an external, measurable sequence, which was essential in the development of the scientific method (15). With the ability to measure time accurately, scientific experiments can become much more standardized and replicated which are backbones of scientific knowledge.

Following the crucial developments mentioned above including the scientific method, the *paleotechnic* phase saw the perfection of production techniques with severe costs to societies and their natural environment. Mumford dates this era's beginning in the middle of the 18th century and ending, after its peak in 1870, at the beginning of the 20th century. The case in question is, of course, the industrial revolution, where coal and iron replaced water and wind as the main sources of energy and production. The steam engine entirely reshaped urban existence while the railways and mines that feed it changed the rest of the landscape. With the possibility of huge manufacturing lines and the standardization of production, the social and cultural status of the masses was altered. As the whole economic structure of society was reorganized around mass production and consumption, no aspect of society remained untouched. The *neotechnic* era that followed the steel-dominated industrial age was punctuated by the proliferation of electric lighting and the new methods of communication.

Even though Mumford's study is considerably dated and for this reason fails to cover the most influential developments of the 20th century, it still has considerable importance and not only because of the sheer number of important theorists it inspired. *Technics and Civilization*

features a perspective on the relationship between scientific and industrial inventions and human subject that will be revisited many times. Mumford, like McLuhan, regards all of the tools humankind uses as bodily extensions or instruments that amplify a part of the body and/or its senses, arguing that, as machines become independent from human power, they gain independent existence, implying new norms and new values within the human societies they influence. This influence can be observed from cultural to business practices that took several centuries to form and, according to Mumford, are more important than any material achievement or invention.

Following Mumford's ideas, and after a lifetime devoted to the understanding of the economic structure and interaction of populations and culture, Harold Innis, the distinguished Canadian scholar, turned his attention to communication technologies and their possible effects on the civilizations that utilize them. This constituted a pioneering endeavor that opened the field to many others to follow. In the introduction to *Empire and Communications* (1950), the first of the two books that Innis devoted to the subject, he tentatively writes, "It has seemed to me that the subject of communication offers possibilities in that it occupies a crucial position in the organization and administration of government and in turn empires and of Western civilization" (1950: 3). The fundamental concepts of Innis' analysis are time and space, where the central claim is the existence of a tendency, within different forms of communication, towards one or the other. This theme was first introduced in *Empire and Communications* and later analyzed in much more depth in the *Bias of Communication* (1951), both of which were published posthumously.

In the opening of his work, Innis concisely explains the point of media analysis, in an inspiring manner that influenced many of his students and colleagues, most certainly Marshall McLuhan. Innis states that "a medium of communication has an important influence on the dissemination of knowledge over space and time and it becomes necessary to study its characteristics in order to appraise its influence in its cultural setting" (1951: 33). The characteristics of a given medium would have an effect on the established notions of knowledge within a culture and in longer periods of time, the effects would render the culture resistant to any other media that has different characteristics. In such a case, a radical shift resulting from the proliferation of a new medium would result in a restructuring and, in extreme cases, the construction of a different civilization. Innis states that the reconstitutions of civilizations around different media revolve around time-biased and space-biased orientations.

It is a logical conclusion from these premises that a stable society should be based on a balance between these two extremes, but such a state is ever-elusive and, even when achieved, can be disrupted with the invention of a new medium that might tip the balance one way or the other. In the chapter titled “Plea for Time”, Innis states that visual media like print and photography emphasized individualism and created instability within societies with “catchphrases like democracy, freedom of press and freedom of speech” only to be countered by the ear-oriented medium of radio and the rise of nationalist sentiments it led to (80). Innis is critical of all the new possibilities that seem to spring from newly developing media when he states that the potential of greater realism also carries within greater possibilities of delusion (72). In his treatment of time, Innis is concerned with what later theorists have referred to as *immediacy* and the destruction of a sense of time through new media, where individuals are led to live “in the moment and for the moment”, which he sees as the banishment of all individual continuity (90). Interestingly, this very point became the opening statement in McLuhan’s famous work, where his primary concern was the individual and his/her senses, but Innis maintains his focus on political structures and how they might be affected by such changes in the communication technology.

During all his studies on the history of empires and their dominant methods of communication, what fascinated Innis was empires’ ability to sustain themselves over vast geographical spaces and long stretches of time. Upon reviewing the history of various empires and their epochs, Innis concluded that every empire has distinct methods of administration and communication embedded in its social and political structures. Each of these distinct combinations marks an epoch in history that favors, and even builds upon, a certain type of media. These media in turn determine the bias of the civilization in question.

Innis argued that this bias in communication also affects the culture and character of the civilization in question. A time-biased society would emphasize the stability and longevity of its customs and culture, a preference that would be clearly evident with the chosen durable materials on which communications are based. Such a society would give great importance to its customs, which would impede individualism. Ancient Egypt serves as a perfect example for a time-biased society, where the most important matters were always carved in stone and all the aspects of the culture were focused towards infinite stretches of time.

On the other hand, a society that has a bias towards space rather than time has, predictably enough, different characteristics. Societies that are biased toward space prioritize the future

and the present more than their past. They also tend to lose the sense of community that time biased societies hold in such high regard. Innis argues that contemporary western society is biased towards space in an unparalleled scope thanks to electronic technologies.

This distinction between media of communication also gave Innis a tool with which to analyze the transition from an oral based culture to a culture that is based on writing. Concerning oral traditions, Innis states that such societies utilize the properties of oral communication and their strong religious sentiments to direct and enforce a body or cooperative community of individuals. Innis states that in oral communication, all the senses, the eye, the ear and the brain have to act together, in supporting and competing roles, and these roles all have temporal characteristics. On the other hand, the detached and portable nature of print and the visual communication it entails, contributes to a civilization whose bias is rather towards space. The written word, the book as an object and its physical transportation are all oriented towards space, whereas speech is a time-dependent act that comes into existence and passes away with the passage of time.

Throughout his analysis, Innis uncovered issues that would ignite a discipline and by shifting the focus from Mumford's Technics-oriented approach to media of communication and its effect on culture, Innis laid the groundwork for a whole new perspective. His work has provided important insights for new generations and, it may be argued, his work acts as an inspiration to the vast development of the field, which would to be spearheaded by one of his colleagues, Marshall McLuhan, to whom the discipline of media studies arguably owes its fully-fledged existence.

2.2. Understanding Media

After a brilliant career as a scholar in English literature in the UK and Canada, McLuhan became more and more interested in the effects of communication technologies on culture and civilization in general. His endeavor in uncovering the laws of media started with the *Mechanical Bride* (1951) in which McLuhan analyzed several advertising campaigns and their possible implications for the society. Apart from pointing towards McLuhan's future subject of interest, this work included clues to his famous writing style, which he called the "mosaic approach", that is, writing that produces a book comprised of independent essays that can be read in any order. After what may be called his first probe, a term he used to refer to his short and very accurate incisions into precise subjects such as popular culture, he turned his attention to his main topic of interest; the printing press and its transforming effects on

society. *The Gutenberg Galaxy*, which was published in 1962, opened the floodgates for work on media and its effects on human existence. Although McLuhan himself stated that the whole book was just “a footnote to Harold Innis’ work”, and that he wrote it simply because someone had to.

The Gutenberg Galaxy was full of new insights into emerging media theories. McLuhan’s primary objective was to dissect the impact of the development and proliferation of the printing press on the western civilization. In his very detailed analysis covering fields of literature, social organization and thought, McLuhan provides ample evidence of the crucial importance of the printing press for the emergence of civilization, as we know it today. Among his claims as to the features we owe to the printing press are the rise of nationalism, and scientific research and automation, which led to the industrial revolution. McLuhan is supported by Mumford where he claims that the printing press was a pioneer of standardization and uniformity in production, which he seen as the core values of the rising industries of the 19th century. What McLuhan himself was pioneering, was his conceptualization of the way the printing press has changed the ratios and priorities of sensory perception and the way in which people and media relate.

The Gutenberg Galaxy also included some of McLuhan’s most famous insights into the future, most widely known is perhaps his prediction that the post-literate society of the future will form a Global Village, which he elaborated in much more detail in his next volume. In suggesting the extent to which the printing press has formed modern civilization and the modern subject, McLuhan was utilizing the notion that all the tools, gadgets and every medium of communication are all directly connected to the way human beings perceive their own bodies and the world around them. Although such an understanding of tools can be traced back to Mumford and his *Technics*, it was McLuhan who detailed and sophisticated this theory. The title of his next volume broadened the scope of the *Gutenberg Galaxy* and aimed to cover the whole field of human-media interaction along with all the other significant creations that eventually shaped the civilization. *Understanding Media: the Extensions of Man*, published in 1964, owes its title to this investigation and it has become the book that made McLuhan the-medium-is-the-message-man, a legacy that lives on today.

In his most influential work, McLuhan did not hesitate to open with his most overarching ideas, later moving into detail with particular examples in order to support his arguments. After echoing Innis in stating that “every culture and every language has its favorite model of

perception and knowledge that it is inclined to prescribe for everybody and everything”, he argues that the mark of the time he writes in is an aversion to imposed patterns and an ambition to “declare our beings totally” (6). McLuhan suggests that in order to understand the effects of various media of communication, psychic and social consequences should be given the priority.

The rationale for this is McLuhan’s famous, and much abused, statement that the medium is the message. What is meant with this statement is not always entirely understood and indeed McLuhan himself used to complain that no one had fully grasped what he intended. The primary concern of his statement is to separate the content of a medium from the medium itself. In arguing that the media of communication shape and control to a great extent the way humans perceive the world, McLuhan was concerned with the media itself as a mode, or a perspective. The actual content, whatever end to which one chooses to apply that medium is of no importance to McLuhan. This may be illustrated with his excellent example of the electric light, as the pure medium: “Whether the light is being used for brain surgery or night baseball is a matter of indifference” (8). In addition to the unimportance of the content of the media where their effect on human perception is concerned, focusing the analysis on this content is even harmful for McLuhan’s ends, as the content tends to blind the viewer to the true nature and effects of the medium itself. If we are unwatchful, any newly emerging media will be able to impose its assumptions on our perceptions. The fact that the true importance of any media lies in the way they deliver their contents, and how they lead us to perceive them, the media become the real message in any quest to understand the effects of our extensions. McLuhan argues that these effects are not concentrated on “a level of opinions or concepts, but (they) alter sense ratios or patterns of perceptions steadily and without resistance” (19).

After stating his perspective as such, McLuhan returns to the printing press, again claiming that by establishing uniformity of actions and prescribing sequential ordering, print has revolutionized western civilization on such a fundamental level, that the emergence of nationalism and individualism may be credited as its products. In fact, McLuhan argues that the whole concept of rationality has been confused with literacy and the mindset it embodies, all of which were proliferated by print technology.

In an attempt to better understand the differences brought about by literacy and what could possibly await it in the future, McLuhan introduces his division between cool and hot media. As humankind moved from oral communication to written, literate media,

participation in the processes has decreased and society has undergone a detribalization process. This is a typical illustration of a transition from a cool medium, to a hotter one. A cool medium provides little information and leaves gaps to be filled by the listener, and is therefore inclusive and participatory, like oral cultures. Cool media tribalize, whereas a hot medium provides much more information and does not require the same amount of participation from the user. Hot media are mechanical and repetitive and in that sense they are easier to grasp, and therefore more inclusive than cool media.

So, in effect, the hot medium detribalizes. Most societies undergo a change from cooler media to a hotter one, due to technological innovations or exposure to other cultures, and these periods of transitions are always prone to reactions and shifts in the perceptions of the people who experience the heating up. Such a change tends to impose hypnosis on the subjects, as it involves a sudden concentration of senses onto a singular medium. On the other hand, a society that has adapted to hot media is prone to slide into hallucination when its senses are suddenly cooled down.

An understanding of these transitions is critical, as McLuhan delivers his insights concerning developing electric technology using the hot – cool metaphor. Electric media, as they allow instant action and reaction, as they move with the speed of light, render geographic locations less important, especially urban centers, which are still structured around older techniques that require centralization, such as the railway and the factory. Electric media entail such a speeding up that the process of fragmentation achieved by previous modes of communication is reversed and the society enters a phase of retribalization and decentralization.

In order to better understand what exactly electric technology entails for society in general, it is useful to return to the idea of media as extensions of man. According to McLuhan, since the dawn of time, every tool, every gadget humans have invented acts as an amplification device for one of our bodily parts and technologies of communication are no exception, as the ‘content’ of any medium is always another medium, each successive one extending the one that came before it. The discovery of writing was an extension of speech that came before it and the primary function of the printing press was to amplify and extend writing to a wider scope and to increase availability, just like the telegraph later did to print. Among all the other prosthetic enhancements like cars that extend our feet and glasses that extend our eyes, McLuhan reserves a special place for the latest developed electronic media.

He argues that electric media extend our very nervous system and tap directly into our consciousness, realigning our sense ratios and perceptions. As a result, connecting with the network of electric media implies a transcendence of our local, physical beings, with effect that, “in the electric age, we wear all mankind as our skin” (52).

The results drawn from this analysis are extremely significant as they illuminate McLuhan’s perspective on electric technology. With the previous great shift, wherein literacy replaced orality and gave an *eye for an ear*, the assumptions and mentality of print culture began to dominate and with the advent of electric media, literacy in turn is facing a similar challenge. But, before the transition is complete and before the old dominion of print cedes its dominant position to electric media, the phase of transition bears a special importance for the understanding of both eras. When two media collide, argues McLuhan, there is a moment of clarity where the effects of both can be observed, free from the total effects of either one and free from what McLuhan calls as the *Narcissus effect*. Just as Narcissus didn’t realize that he was looking at his own image reflected on the water, we do not realize, in our fascination with our impressive gadgets, that they are in fact extending our own bodily functions. “Any invention or technology is an extension or self-amputation of our physical bodies, and such extension also demands new ratios or new equilibriums among the other organs and extensions of the body” (49). The sudden transformation of these ratios requires a shift in focus and this enables better observations of the crucial effects that were previously so present. In essence, the crack made in the centuries-old mentality of literacy by the proliferation of electric media enables us to see what literate mentality was and how it shaped our sense-ratios and assumptions. In the same way, since electric technologies were not fully established as the dominant form of communication, at least not when McLuhan was writing, we might have a chance to make accurate observations into the nature and possible effects of what is rapidly becoming our next love affair.

Even though some of his ideas can be traced back to Innis or Mumford, McLuhan made a greater impact on the subject. Due to his eloquent style and even more clever publicity strategies, he became a well-known figure among the masses and was often criticized for his popularity by his peers. But with hindsight, one might argue that he saw the coming of the TV age and what it would do to culture and therefore he tried to reach people at the most basic level. Nevertheless, he made issues like media studies and especially orality-literacy studies extremely popular among academics. The following decades saw a wide range of published works that deal with these issues and furthered our understanding of these fundamental

concepts. Some of these works are bear considering either because of their significant contribution to the understanding of the cause of this study or simply because of their indispensable importance to the general field of media studies.

2.3. Beyond McLuhan

Although the popularity of McLuhan's work was very influential in bringing many of the debates inherent within the media studies to the forefront of academic agendas, other branches of the humanities were also advancing in their methods of understanding the interaction between societies and their dominant forms of communication. With parallel developments in anthropology during this period, the liveliest area of research was concentrated around the shift from orality to literacy. But before moving on to useful links provided by this vast literature, one of McLuhan's contemporaries deserves to be mentioned for his considerable contribution with an approach that is closer to Mumford's than any later theorist.

Lynn White's *Medieval Technology and Social Change*, published in 1962, traces the roots of the most fundamental technologies that proliferated in the early Middle Ages, around 9th and 10th centuries, and ultimately helped to shape the later Middle Ages and even some characteristics of the industrial age that followed. White identifies three key technologies that are central to his analysis; the first is the introduction of the stirrup and the mounted shock combat it enabled. With the massive advantage this gave the new cavalry over the old methods of warfare, it was inevitable that every political force aspired to add the advantage of the stirrup mounted cavalry to their ranks, but maintaining horses and the production of ever-developing armor meant that these new and very effective units were extremely expensive to run. In order to finance the new cavalry, the land ownership schemes and landowners' participation in the army was reshaped. Instead of supplying manpower for a low-skilled army, peasants began to supply the newly formed professional class of warriors economically. This changed both the style of warcraft and the organization of society itself.

The second important technological advance that happened during the early Middle Ages was the agricultural revolution. With the introduction of new ploughs, advances in the ability to harness horsepower, and with the introduction of the three-field rotation system, the way in which agriculture was managed, especially in northern Europe, was revolutionized. Thanks to faster speeds of travel possible on horse, more people moved to larger cities and this led to a rapid increase in urbanization. Likewise, with the introduction of other advanced technologies, the efficiency and output of agriculture increased immensely, permitting the

citizenry to surpass mere self-sustenance and to move beyond being a part of nature, to being the supposed master of nature.

With close attention to detail, White contributes ample material evidence to the timeline of introduction of these technologies to Western societies and the social changes that followed. As a work that completes the picture of the process through which modern societies came to exist as they do, White's work preserves its importance as a brilliant effort in researching the evolution of technology. Likewise, a body of scholarly research that aimed to uncover the true characteristics of the oral and literate mindsets of human perception and the exact ways they differ from each other emerged in light of McLuhan's theories. Although the literature is very broad in this area, it is not the aim of this thesis to provide a comprehensive review of the whole field.

One of the earliest and most influential works on this topic was written by Eric Havelock, whose work was also crucial for McLuhan, particularly his *Preface to Plato* published in 1963. Havelock's focus in this study is ancient Greek civilization, whose primary importance to the field is the fact that they were the first civilization to have shown the properties that researchers now associate with literacy by using a phonetic alphabet. Havelock aimed to analyze the shift that occurred within the Greek society during the time of Plato from an oral based culture, typified by the Homeric poems, to a literate one of which Plato himself constituted an important example. Although the arguments and methods of Havelock's study are controversial and been criticized by many historians, many emerging studies concentrated around the orality-literacy divide have embraced the book and has built on its premises, the chief among which was the hugely influential and widely recognized work of Walter Ong, *Orality and Literacy* (1982), which was building upon his earlier works, like the *Presence of the Word* (1967).

The central notion in Ong's work is the fundamental divide in the way the human mind is structured after the proliferation of writing technologies. In the preface of the *Presence of the Word*, Ong writes that the modern, literate, individual has to "labor to regain the awareness that the word is still always at the root of the spoken word. Early man had no such problem; he felt the word, even when written, as primarily an event in sound (ix)". In his later, and more detailed, study on the differences between oral and literate cultures, Ong concentrated mainly on this transition of the corresponding mentality and its various implications. He sketches out general characteristics of primarily oral cultures in the following points:

- Additive rather than subordinative.
- Aggregative rather than analytic.
- Redundant or ‘copious’.
- Conservative or traditionalist.
- Close to the human lifeworld.
- Agonistically toned.
- Empathetic and participatory rather than objectively distanced.
- Homeostatic.
- Situational, rather than abstract.

Based on these distinctions, Ong argues that an oral culture does not have the potential to create scientific or philosophic thought, because of the way it organizes and transmits information. Also, in line with McLuhan, Ong sees oral cultures as featuring more tribal characteristics, where individuals stuck by their groups and define themselves with common identities. For the development of rational, scientific thought and philosophical discourse, and for the emergence of independent identities, a literate society has to emerge, where the knowledge itself is separated both from the one who created it and from the one who will acquire it. This, according to Ong, is the creation of objectivity and such a mode of approach to knowledge is, of course, the bedrock from which all the modes of thinking stated above emerge.

Ong also argues that, as a result of the latest developments in electric technology, a new mode of communication is starting to cover the whole culture and is signifies a return to some characteristics of our pre-literate era. Following the development and proliferation of the literate culture and mindset for centuries, Ong calls this new set of values secondary orality. Like McLuhan, who has argued that electric technology with its speed-of-light awareness will retribalize our individual sensibilities on a global scale, Ong states that secondary orality features a very strong group sense. But, unlike primary orality, the group sense, the instantaneousness and all the rest of its features are to a large degree engineered and put into place because “we want them to be there.” Also, there is the fact that the audience of the new oral mode of communication is vastly increased and our new group of tightly connected individuals now forms, in McLuhan’s famous words, a global village.

The study of the so-called orality and literacy divide has continued well into the present day after Ong, but since the late 80's, the study of the effects of the electronic technologies themselves have come into focus and become gradually more illustrative regarding the objective of this study. Therefore, it is now more helpful to shift the focus on the works that primarily concern themselves with the electric media and by Ong's terms, secondary orality itself.

2.4. Understanding (New) Media

The 20th-century can be characterized in general as the age in which the dominance of print was challenged and partially overthrown. The rise of the electric technology, along with the development of visual media like photography, have all affected literate minds and one of the first analyses that is concentrated on such new media was written by Neil Postman of NYU. As a student of McLuhan, he was particularly interested in the way the new media affects the dominant mode of social discourse. The particular media he concentrated on in his acclaimed *Amusing Ourselves to Death* (1985) was television, which, for the second half of the 20th century, assumed the role of the primary channel through which information disseminated. In his analysis, Postman presents a very interesting contrast between the presidential debates in the USA that were held in the early 19th and late 20th century. He illustrates how political discourse is simplified and substituted with images in place of arguments. A process that can also be observed is concerned with the way in which news in general is presented, the way the education system is organized and even the way religions opt for popular recognition. According to Postman's argument, all facets of public discourse obtain new language, based on the conventions of TV. Such conventions can be characterized as the very short duration of time spared for any individual item and the way new items characterize themselves as complete substitutes of the former ones. Postman typifies this attitude as the "Now...This" approach where everything became as important as a flashing light that passes by.

For Postman, the broadcasting logic behind television carries a grave danger for various forms of public discourse, which he compares to the dystopia described by Aldous Huxley in his *Brave New World*. In contrast with George Orwell's *1984*, Huxley's future does not involve a constant state of fear where each and every citizen is watched by the infamous *big brother*. Instead, Huxley suggests a future where people don't ask questions not because they are subjugated but because they do not care. Huxley's is world where even the smallest

concern is immediately vanished under the haze of an obligatory drug, *Soma*, a world where people are seeking instant satisfaction and entertainment, not fulfillment or enlightenment. It is exactly this state of numbness and disinterestedness that Postman fears modern culture centered on TV is leading the public discourse.

When a population becomes distracted by trivia, when cultural life is redefined as a perpetual round of entertainers, when serious public conversation becomes a form of baby-talk, when, in short, a people become an audience and their public business is a vaudeville act, then a nation finds itself at risk; cultural death is a clear possibility. (156)

Postman hopes to prevent such a cultural meltdown with education and especially with furthering the understanding of media. As an admirer, and student, of McLuhan, Postman regards his work as critical and he claims that by further uncovering the mechanics of communication technologies we can be much more effective in preventing the threats that are imminent. “What afflicted the people in *Brave New World* was not that they were laughing instead of thinking, but that they did not know what they were laughing about and why they had stopped thinking” (163).

In the following years, the study of television and its effects on different areas of public discourse became a very important branch of media studies, but the same period of 80’s and early 90’s also corresponded to the sudden and immense proliferation of the personal computer as, first of all, a writing tool. The ever increasing role of computers in creating, storing and accessing text had profound influences on the way authors and readers interact with textual content and the study of this topic began to draw interest among media scholars. Later multimedia capabilities of personal computers made the issue much more complicated and interesting while the study of the computer interface itself was becoming an object of analysis in itself due to its unique way of interaction with the user.

2.5. Writing onto a New Space

Changing characteristics of writing due to a change in the nature of dominant writing tools was analyzed in depth by theorists like Innis and McLuhan who wrote about the effects of transition from papyrus to paper codex and later to the printed book but the proliferation of personal computer as a writing tool was clearly posing new issues concerning the interaction between the author, text and the reader. Jay David Bolter’s *Writing Space* (2001) was concerned with precisely this transition. Bolter clearly states at the introduction of his work that we are living in the late-age of print culture and the introduction of computers into the process of production, storage and accession of texts is reshaping those processes radically.

Bolter begins by reiterating the cultural significance of the printing press and its accompanying cultural mindset, an issue that was covered extensively by Innis, McLuhan and Ong. Bolter is on the same line with these authors, arguing that the printing press established the notion of text as a stable entity and constituted a dichotomy between the author and the reader. Bolter claims that at the late age of literacy, computers are challenging the stable notion of texts and reconceptualizing them as potentially ever-changing liquid entities that are formed and reformed between unique and multiple interactions of the reader and the author. Although previous passages that saw text as hieroglyphics, papyrus rolls, codices and printed books all had individual characteristics, “electronic writing is mechanical and precise like printing, organic and evolutionary like handwriting, visually eclectic like hieroglyphics and picture writing. On the other hand electronic writing is fluid and dynamic to a greater degree than previous technologies” (Bolter, 2001, 8). Bolter echoes Mumford’s classification when he compares computer generated writing to post-industrial methods of production: while the printing press resembles the industrial stage and the technologies to come before print, papyrus and codex, represent the pre-industrial stage. For Bolter, specific technologies of writing never exist in a vacuum and they always create their corresponding mindsets and cultural values. Every method of inscribing letters to relative permanence brings with it a unique understanding of those letters and the subject who produced them. These technical and cultural aspects of writing constitute writing as a technology (19).

Bolter proposes the concept of remediation for understanding the way electronic writing is reconstituting characteristics of old media within itself. Remediation is defined “in the sense that a newer medium takes the place of an older one, borrowing and reorganizing the characteristics of writing in the older medium and reforming its cultural space” (23). In this sense, it is hard to think of a medium that the computer can’t remediate and build on given its characteristic flexibility and interactivity. In this way computers contribute a truly revolutionary practice of writing in the form of hypertext. The ability to construct hypertextual writings with computers will be a central concern of this thesis in the following sections.

Within a hypertextual system, individual words, traditionally the smallest meaningful unit of language, can carry additional significance along with their linguistic meanings. An author can define each word as a link that would take the reader to another part of the text or to a completely different environment. By selecting this link, the reader can be immediately transferred to the destination. This ability effectively creates what Bolter calls a topographic

space out of the written piece and each linked word gains a spatial meaning in the mind of the reader. The reading activity itself is restructured, hence instead of going along the predefined and linear path the author and convention have created, every reader can construct an individual reading order by following different sequences of links and visiting different parts of the total space the work constitutes. In a sense, it can be argued that being a hypertextual topography strengthens the *presence of the word* within the text.

Although hypertext brought fundamental changes to the writing space, it took another technological development in the last decades of the 20th century to revolutionize the way people interact with texts and other audiovisual content and maximize the impact of the computer-based writing on the notion of texts and authoring.

2.6. Towards a Network Culture

Initially constructed to share computing power and research data among the very few institutions that actually had computers in the 1970's, the Web was an open access network that proliferated a growing number of personal computer owners around the beginning of the 90's. Although its prospects as a commercial outlet have followed a turbulent path, the Internet as a communication medium has been enjoying an exponential growth rate in the number of users for years, interconnecting more than a billion users worldwide.

It is a widely acknowledged fact that the Internet provides a very powerful tool for the distribution of information, knowledge and culture but a potentially much more revolutionary aspect of the Internet is concerned with its effects on the production side, thanks to the novel opportunities of collaborative authoring and its other social applications. Although these possibilities are endemic to the nature of the medium itself, most of the early theorists have overemphasized this fact, in line with the speculation-driven, sudden economic growth of the medium itself during the 90's. This somewhat harmful pattern came, predictably, to an abrupt end with the burst of the so-called *Dot-Com-Bubble*.¹ But such speculation based writing, fortunately, does not reflect the whole character of the development of a radically new communication technology and the Internet was only struggling to find its unique voice. So were the intellectuals analyzing it and the 21st century brought with it much more unique

¹ *Dot-Com Bubble*: The sudden, and mostly speculative, increase in the value of stock markets of the Western World due to the expanding base of businesses that are related to the internet is generally referred as the dot-com bubble. Most of the businesses were focused on rapid increases in market shares rather than actual growth and their founders have spent their earnings on their personal consumption rather than investing on the business. The speculative increase came to an abrupt end at the end of 2000 and many such businesses perished with the following recession. (http://en.wikipedia.org/wiki/Dot_com_bubble, Accessed 25.11.2007)

applications of the Web, and accordingly insightful and grounded analyses of the true potential of the networked society, and in indeed the networked economy.

One of the most insightful and comprehensive analyses that have been published recently on the topic was written by Yochai Benkler. In his 2006 book *The Wealth of Networks*, Benkler primarily focuses on new ways of producing and distributing information, knowledge and culture. As a professor of law and economics, Benkler's main concerns are the economic underpinnings and the desirability of creating information, knowledge and culture with the new social tools of the Internet as well as the various existing and future institutional and legal issues surrounding these activities.

Benkler establishes a very thorough analysis of the mass media landscape during the 20th century, which he defines as an industrial information economy, in order to accurately track the changes brought on by the Internet. He identifies two deep and structural changes that have altered this industrial scheme and claims the establishment of an alternative in the form of non-market production. These two radical shifts are the emergence of an information economy and popularization of Internet as a communication tool. As a result of these two significant shifts, "a good deal more that human beings value can now be done by individuals, who interact with each other socially, as human beings and as social beings rather than market actors through the price system" (6).

According to Benkler, the networked information economy enhances the capacities of individuals and enables them to participate in the production process more fully on three levels. Specifically, the new economy improves individuals' ability to do more both for and by themselves, it increases the capacity of individuals to do more in "loose commonality with others, without being constrained to organize their relationship through a price system of in traditional hierarchies" while also increases the capacity of individuals to do more in formal organizations (8).

Another development that is very critical for determining the effect of the Internet on the political and social sphere is the recasting of the individual from a moderately engaged part of a great mass of receivers, to a possible part of a smaller but a much more actively interested group of participants.

The basic economic principle that leads to the successful emergence of non-market production is the nonrival nature of information goods. Nonrivalry means that when one person enjoys a certain product, this won't diminish further use of another individual of the

same good. Unlike any other source material, many people can use the same information at the same time without interfering their respective utilities. This property arises from the fact that once produced, the marginal cost of reproducing any information good immediately drops to zero. In a normal competitive market where prices are ultimately determined by the marginal cost, the pure information good poses a problem. The traditional approach to this problem has been to establish governmental and institutional support for producers of these goods in the form of patents and copyright laws that enable producers to make profits from information goods that actually have zero marginal cost. Although this model has worked for the broadcast media of the 20th century, Benkler argues that the networked information production and distribution fits better with non-market frameworks where value is not determined solely by a price system. Another inefficiency that would be disbanded by a non-market production scheme results from the unique feature of Information in being both an input and output of its production process. Institutional arrangements that will, artificially, increase the cost of information as an input has hampering effects on processes where that information acts as an input source.

Benkler claims that the alternative non-market production scheme will be based on the social behaviors that have been governing so many aspects of our daily lives for centuries. Thanks to the networking capabilities of the Internet, these social behaviors can now be channeled into a sustainable production and distribution scheme for information, knowledge and culture without the need of formal hierarchies and a governing price system.

Benkler calls the newly emerging scheme “commons-based peer production”, which is characterized by a radically decentralized, collaborative and nonproprietary structure (60). Such a system is based on sharing resources and output alike and, although every individual contributes to the end product, no single one of them can claim ownership and exploit the rewards under a price scheme. Such ability to interact with resources and the output brings immense freedom of participation and use, which underlies the particular efficiency of peer production.

In order to understand the specific change represented by this new model Benkler identifies three distinct functions in the process of communication; the initial utterance of a statement, mapping of this statement within the existing knowledge map (relevance/accreditation) and its distribution. In the most general sense, the traditional mass-media, has presented a model in which these functions were integrated, but with the Internet

all of them can be partitioned and delegated to more specialized outlets where individual parts can be handled more efficiently and openly.

In its current development stage, the Internet provides a wide variety of tools to individuals and groups to publish their statements in various forms, while it is equally important that the peer production model generates reliable relevance and accreditation mechanisms whose examples can be seen in the likes of Google's search algorithm, or Amazon and Slashdot's rating systems. Also, on the distribution side, there are numerous distributing computing projects that represent a radical new approach to data processing that achieve very impressive results, apart from the now obvious extreme ease of distribution of digital content over networked computers.

Benkler states that, as effective as it might be, the non-market production scheme still poses three questions that can be puzzling at first glance for economists, namely why do people participate in such projects? Why now, why here? And, is it efficient to have all these people participating with their time and resources? In order to answer these questions, Benkler argues that we do not need to assume any change in the fundamental nature of humanity. A very important characteristic of the peer-production that greatly contributes to its efficiency is the very high modularity of users, projects and the capacity of the model to integrate many finely grained contributions. Modularity refers to the extent to which a project can be broken into smaller parts that can be worked on by different groups and assembled back together when they are complete. The very popular open-source Linux operating system presents a good example of this property. An operating system like Linux is made up of various components that can be developed independently by coordinated groups. Granularity can be best explained with the workings of Wikipedia, where a dedicated user can write several articles from scratch and edit many others in a session of a few hours, whereas another user may simply correct a typo she encounters while looking something up: The wiki model lets users contribute as much as they like without impeding the overall progress of the project or laying out increasingly complicated organizational schemes that eventually become a barrier to operations.

These limiting behaviors of traditional organizational schemes are clearly illustrated by Clay Shirky in his recently published *Here Comes Everybody* (2008). Shirky bases his argument on Ronald Coase's famous 1937 paper "The Nature of the Firm" where Coase argues that a completely free market would underperform because of the transaction costs

involved in bringing together every interested or effected party individually, so in situations over a certain complexity, a formal organization that would oversee these transaction costs would ultimately advance the workings of the market. Of course, and as it has manifested itself over the course of 20th-century organizational history, the utility of such organizational schemes generally take shape as a formal hierarchy and, therefore, have their limits. Shirky argues that, after a certain point, a traditional organization hits a Coasean ceiling, where the very cost of organizing defies the benefits of the increase in the organizational scheme; this is usually considered as a natural limit of growth for firms. On the other end of the scale is the Coasean Floor, where the potential benefit to be extracted by forming an organization is not worth the cost of setting up a traditional organizational overhead, so many tasks that lie under this floor remain undone. Shirky gives many examples of this organizational barrier and he argues that networked communication tools headed with the Internet radically alter the cost of forming organizations for every purpose that was previously deemed unfeasible, a phenomenon Shirky calls, quoting social scientist Seb Paquet, “ridiculously easy group forming” (54).

The plummeting cost of forming social groups and maintaining them around a common interest leads to opportunities for solving complex problems with ad hoc groups that would not be possible to form before the new networked communication tools. Tapscott and Williams in *Wikinomics* (2007) present examples of this phenomenon from a wide variety of fields, but perhaps one of the most illuminating concerns how the newest tools in communication can be harnessed to achieve beneficial results for the most traditional of businesses. Tapscott and Williams cite the example of Goldcorp, a Canadian mining company, who put all their geological data on the web as a part of a challenge to find the next drill site. The company’s open approach to its previously proprietary data has attracted a wide range of participants from all around the world and the submissions made through the challenge have provided the company with many digging sites that they wouldn’t have discovered with their in-house surveyors, at least not in the same amount of time.

In light of all these preliminary studies, the nonmarket production possibilities of the new social media emerge as a valid and sustainable method of producing information, knowledge and culture. Peer-production in many cases proves itself better for identifying the best person to do a specific job within a specific time frame, from a much larger pool of people without increasing the cost of reaching out.

Both Shirky and Benkler note however, that the technologies and applications discussed, although they are natively good at group forming, don't guarantee any level of sharing for knowledge or culture. The tools, however, strongly influence the threshold constraints in the effective domain of sharing and, by radically altering the Coasean floors and ceilings, they are "reshaping the market conditions under which businesses operate" (Benkler, 126). Social production harnesses what Shirky calls social surplus; "impulses, time, and resources that, in the industrial information economy, would have been wasted or used purely for consumption" (Benkler, 122). Therefore, by engaging users to collaborate and create on matters that they are passionate about, the immediate effect is likely to be an increase in overall productivity. It is also important to note here Shirky's proposition that true social effects of technological improvements can only be observed when they become mundane aspects of daily lives of people and started to be taken for granted.

After laying down the economic principles behind non-market peer production, Benkler turns his attention to another topic of core importance to the desirability of such a scheme, that of individual freedom. Benkler's argument in this case is that "the emergence of the networked information economy has the potential to increase individual autonomy" (133). A more detailed analysis of the issue reveals three aspects of individual freedom that are affected by the introduction of the new tools. First is the direct increase in the "range and diversity of things that individuals can do for and by themselves" (*ibid*). Second is the emergence of nonproprietary sources for communication and third, a qualitative increase in the range and diversity of information available to individuals.

The key change that leads to the results Benkler lists above is the repositioning of the individual with respect to the media, exemplified by the concept of user-generated content. For Benkler, what the users actually do is secondary. More important is the fact that users are participating in the process of creating content instead of sitting on a couch and receiving what is being transmitted to them by the mass broadcasting apparatus, of which TV is the most obvious symbol. It is critical that users begin to regard media products as unfinished goods that are under constant scrutiny, rather than as finished, polished products to be consumed passively. Benkler notes that while there is nothing implicitly wrong with the model of TV or a movie theatre, there is a problem when this scheme "becomes an apt metaphor for the relationship the majority of the people have with most of the information environment they occupy" (135). It should be noted, in order to clarify Benkler's arguments, that the change that is being described is positioned against the previous dominant mode of

communication, which is the broadcast media of 20th-century. As McLuhan and Postman have demonstrated earlier, this mode of communication has replaced the print-based culture in the beginning of the 20th-century.

Of course, there are criticisms to be made of the development of a user-generated content ecosystem and one of the most prominent of these is what Benkler calls the ‘Babel objection’. The ‘Babel Objection’ entails the argument that the vast multiplicity of voices in the new emerging space will bog down opinions and the ensuing cacophony will render it impossible to form a consensus. Benkler renews his argument that accreditation and editorship mechanisms will enable people to navigate through different opinions and to engage in a constructive dialogue. Where needed, this will evolve with the tools that enable people to participate and we will not simply degenerate into mindless chaos. Networked information tools provide individuals with better and more open ways to access information, and “information underlies the very possibility of individual self-direction. Information and communication constitute the practices that enable a community to form a common range of understandings of what is at stake and what paths are open for the taking” (129).

After mapping out the possibilities of the increase in individual freedom, Benkler ties the issue to political freedom where he sets out his argument concerning peer-production by illustrating what, in his view, is the “trouble with mass media”.

In order to demonstrate the potential for political freedom of the new communication tools, Benkler stresses the motivation levels of participants in the new media and the typical recipient levels of the broadcast media.

A typical user of the new participatory tools “is driven heavily by what dense clusters of users find intensely interesting and engaging, rather than by what large swathes of them find mildly interesting on average. And it promises to offer a platform for engaged citizens to cooperate and provide observations and opinions, and to serve as a watchdog over society on a peer production model” (177).

According to Benkler, such a model would enable an idea of a public space that is not constituted by finished and ready-to-consume statements presented by a select group that constitutes “the media”, but as an invitation for a conversation. “Individuals can work their way through their lives, collecting observations and forming opinions that they understand to be practically capable of becoming moves in a broader public conversation, rather than merely the grist for private musings” (180).

In order to analyze the problems of the mass media in the 20th century more analytically, Benkler presents five characteristics that a communication system should possess in order to contribute to the democratic ideal. These are universal intake, filtering for potential relevance, filtering for accreditation, synthesis of ‘public opinion’ and independence from government control. A consideration of traditional mass media according to these criteria reveals severe shortcomings on at least three points. The resulting asymmetry between the small creative force and the masses that receive the programming, mass broadcast media cannot achieve universal intake. It is focused on broadcasting finished goods to a large number of people. This same control issue is also responsible for potential shortcomings of the filtering function for political relevance. The broadcast media owners simply have too much control over the content.

The broadcast model of traditional media comes under the greatest scrutiny however when the underlying economic foundations are brought into question. As traditional media has to attract as large an audience as possible in order to maximize advertising revenues, hence programming often moves away from the genuinely politically important, challenging, and engaging, and to the more titillating and soothing. This is exactly the observation made by Neil Postman in *Amusing Ourselves to Death*, where he warns against the move towards spectacle rather than a substantive conversation of issues, even when political matters are concerned, caused by the commercial interests of the dominant broadcast media. Postman addresses this issue as the reformatting of both news and educational programming as ethereal entertainment, thereby emptying them of their potentially serious content.

All these shortcomings lead Benkler to conclude that “advertiser supported media markets are hardly good mechanisms for assuring that the contents of the media provide a good reflection of the information citizens need to know as members of a polity, the range of opinions and views about what ought to occupy the public, and what solutions are available to those problems that are perceived and discussed” (203).

According to this analysis, the following three issues are considered the most detrimental to democracy in an industrial mass-communication environment:

1. Advertiser-supported media need to achieve the largest audience possible, not the most engaged or satisfied audience possible. This leads such media to focus on lowest-common-denominator programming and materials that have broad second-best appeal, rather than trying to tailor their programming to the true first-best preferences of well-defined segments of the audience.
2. Issues of genuine public concern and potential political contention are toned down and structured as a performance between iconic representations of large bodies of opinion, in order to avoid alienating too much of the audience.

3. Business logic often stands in contradiction to journalistic ethic. While there are niche markets for high-end journalism and strong opinion, outlets that serve those markets are specialized. Those that cater to broader markets need to subject journalistic ethic to business necessity, emphasizing celebrities or local crime over distant famines or a careful analysis of economic policy. (205)

In contrast with the public space, and potential for political engagement of its users, in a broadcast media environment, the collaborative and social media offers considerable promise where political freedom is concerned. But Benkler is also very concerned with some of the early analyses of the potential promises of the networked society. After stating the obvious failure of the web to fulfill the expectations of the early 90's dreamers, he suggests repeatedly that the potential of the web should not be judged by some democratic utopia, but by the advances it brings over the broadcast model of the 20th century. When distanced from this clearly flawed utopianism, the peer-production model and the society it can achieve still carry very significant political promises, which Benkler summarizes as the "fundamental difference between the new information economy and the mass media are network architecture and the cost of becoming a speaker" (213). Given its political and social potential, the networked society utilizing the nonmarket production tools and group forming opportunities promises a more open and critical culture, where individuals are more engaged and active on topics that they are passionate about.

A revolutionary change that has such deep implications in the areas of individual freedom and political sphere is bound to have profound impact on the cultural level as well.

The Internet as a dominant communication tool "affects the way we, as individuals and members of social clusters, interact with culture, and through it with each other. It makes culture more transparent to its inhabitants. It makes the process of cultural production more participatory, in the sense that more of those who live within a culture can actively participate in its creation. We are seeing the possibility of an emergence of a new popular culture, produced on the folk-culture model and inhabited actively, rather than passively consumed by the masses. Through these twin characteristics—transparency and participation—the networked information economy also creates greater space for critical evaluation of cultural materials and tools. The practice of producing culture makes us more sophisticated readers, viewers, and listeners, as well as more engaged makers" (Benkler, 275).

It is crucial however, not to assume that this newly acquired ability to collaboratively produce, organize and contribute will translate into the freedoms associated with them. None of the novel opportunities presented by these new media tools should be taken for granted. "The practices of cultural and counter-cultural creation are at the very core of the battle over the institutional ecology of the digital environment" (277).

The institutional framework will be critical in the cultivation of the shift of the social relations among individuals and their possibilities of collaborating on topics of common interest, for our new tools of communications are also shifting our dominant social ties. “We are evolving from individuals who depend on social relations that are dominated by locally embedded, thick, unmediated, given, and stable relations, into networked individuals who are more dependent on their own combination of strong and weak ties, who switch networks, cross boundaries, and weave their own web of more or less instrumental relatively fluid relationships” (362). Benkler acknowledges Manuel Castells’ writings on “Networked Society” on this point as being accurate.

After reviewing all the potential delivered by the Internet, it is tempting to assume a technological determinism and rejoice in the coming days of increased freedom and productivity.

However, “the Internet does not make us more social beings. It simply offers more degrees of freedom for each of us to design our own communications space than were available in the past. It could have been that we would have used that design flexibility to re-create the mass media model. But to predict that it would be used in this fashion requires a cramped view of human desire and connectedness. It was much more likely that given the freedom to design flexibility to tailor it to our own individual needs dynamically over time’ we could create a system that lets us strengthen the ties that are most important to us” (371).

With the framework they provide on the possible impact of the Internet on the society, Benkler and the other authors mentioned can be taken as a solid benchmark to evaluate some of the current applications of the new non-market production and distribution technologies. Although these latest texts have primary relevance to the problematic of this thesis, nearly a century of media theory reviewed before them is still capable of significant explanatory power. Nearly a century of media studies, from Mumford to Benkler, has seen an exponential increase in its depth and coverage, with the introduction of new media almost every decade of the 20th-century. Interestingly, amid this rapidly reshaping cultural and social landscape, one media object that has changed very little is the encyclopedia. Although this might account for its widespread perception as a stable and established institution, a wider overview of its history proves such a notion deeply flawed.

3. The Encyclopedia – Everything that is worth knowing

The purpose of an encyclopedia is to collect knowledge disseminated around the globe; to set forth its general system to the men with whom we live, and transmit it to those who will come after us, so that the work of preceding centuries will not become useless to the centuries to come; and so that our offspring, becoming better instructed, will at the same time become more virtuous and happy, and that we should not die without having rendered a service to the human race.

Denis Diderot, excerpt from the article “*Encyclopédie*” in the *Encyclopédie*

It is hard to think of a major civilization that has risen that did not look for a way to store its accumulated knowledge. Understandably so, since the passing down of the past experience and knowledge that has grown from that experience is within the very essence of what makes human beings unique as a species. Regardless of the form it takes and the ideological mission it incorporates, the encyclopedia as a storage house of a general body of accumulated information has existed for centuries and it is safe to predict that it will exist into the foreseeable future. However, it is not the existence of encyclopedias to which I want to devote my analysis, but rather the shapes encyclopedias take and the various implications they entail. While the main focus is on the latest emerging form of encyclopedia, I will also discuss the history and evolution of the concept and the forms it has taken, in order to understand what exactly changed at the turn of the 20th-century.

3.1. From Emergence to Establishment

Like many other things that later generations came to regard as natural, encyclopedias came into existence with recognizable goals with the discovery and proliferation of writing. As the origins of the word itself suggest, the encyclopedia was the result of the ambitions of the ancient Greek philosophers to catalogue and categorize the world around them.² Because the encyclopedia had its origins in ancient philosophy and a devotion to the cause of understanding nature and existence, assumptions concerning the categorization of things and the point of view this categorization implies will always be an inherent issue in analyzing different encyclopedias of different ages.

² Encyclopedia literally translates from Greek as “a well-rounded education”.

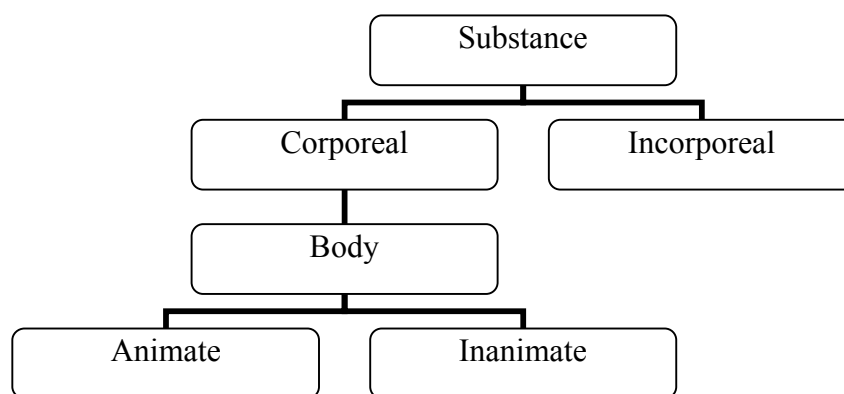
As the definition of the word implies, the original intent of the very earliest works was to provide an adequate education, bearing in mind the huge masses who were not able to easily access books. Within their covers, these works were meant to contain all the knowledge that a well-educated person should be in possession of and what was knowable. With an encyclopedia it is possible for peoples of remote areas to learn what can known about the world at large. Collison, in his extensive treatment of the history of encyclopedias published in 1964, attributes the earliest traceable encyclopedic effort to Plato (428/427 BC – 348/347 BC), whose academy in Athens had the purpose of providing an *encyclopedia*, in the most literal sense, for the young men of the time. Unfortunately, as the later studies by Ong (1982) and Havelock (1963) illustrated, Plato had a problematic relationship with the newly established technology of writing and did not leave an encyclopedia behind. Plato's student, Aristotle (384 BC – 322 BC) has never written an encyclopedia yet, he had a fundamental and continuing effect on the understanding of encyclopedias to follow, well into the Middle Ages. Aristotle followed an encyclopedic approach in his categorizations and his scope, which was considerably wider than most of the following examples, including most works in Middle Ages. Aristotle's categories were:

- Philosophy, psychology, ethics, metaphysics
- Politics, government, education
- Sciences
- Aesthetics
- Poetics, rhetoric

A common characteristic of such works dating from the same time was the fact that they were mostly the brain-child of a single philosopher, whose categorization is implemented as an organizational scheme in line with the philosophy of its creator.

As the Western world came under the dominance of the rising Roman Empire, the social and political outlook of the continent has changed drastically. The change in the dominant mentality had its effects on the categorization of knowledge, where the affairs of the subject and state are given priority over divine and religious issues. Also changing was the way in which readers regarded encyclopedias. With expanding knowledge, the number of works written increased, not to mention the scope of the encyclopedia itself. This increase rendered the encyclopedia more and more of a reference book, not to be read from cover to cover but as a volume or volumes, to be consulted as a reference.

An example of such a work is *Historia Naturalis*, written by Pliny the Elder in A.D.77, composed of 37 books, and 2500 chapters. Although the work has its weaknesses in terms of accuracy, it nevertheless became a guide for encyclopedia making for the following fifteen hundred years, both by setting an example and by providing a rich source for other writers from which to freely borrow. Collison states that the work was a must-have for every self-respecting medieval library (26). Later compilations still bore the influence of Aristotle's *Categories* and expanded it in order to accommodate newly acquired knowledge, one example of which was by Porphyry of Tyre (c.232- c.301). Collison provides the categorization of knowledge in *Historia Naturalis* (31):



A common feature of all the encyclopedic works until the Middle Ages was the intense interrelation between the ambition to provide an encyclopedia and to make a statement concerning the organization of knowledge. The first Christian encyclopedia, one that would lead the way for many to come, was the work of St. Isidore (C. 560-636). Carrying the title *Originum seu Etymologiarum libri XX*, the encyclopedia had a broad and lasting popularity, which resulted in widespread borrowing of its contents by later authors, given that the notion of plagiarism did not exist at the time, nor did copyrights. Thus it can be claimed that Isidore's work started the tradition of Christian encyclopedias, a form that would be rigorously challenged by the Enlightenment thinkers in a few centuries.

This early period in the development of encyclopedias has seen the development of some features that were become essential for later generations. Early authors, and compilers, of encyclopedias developed a reliance on written authority, of which they may be considered the spearhead, regardless of the inherent dangers this entails, specifically at this stage of writing. Since written sources were limited and they were taken at face value, many fallacies or unsubstantiated rumors have survived for centuries. The original intent of the encyclopedia

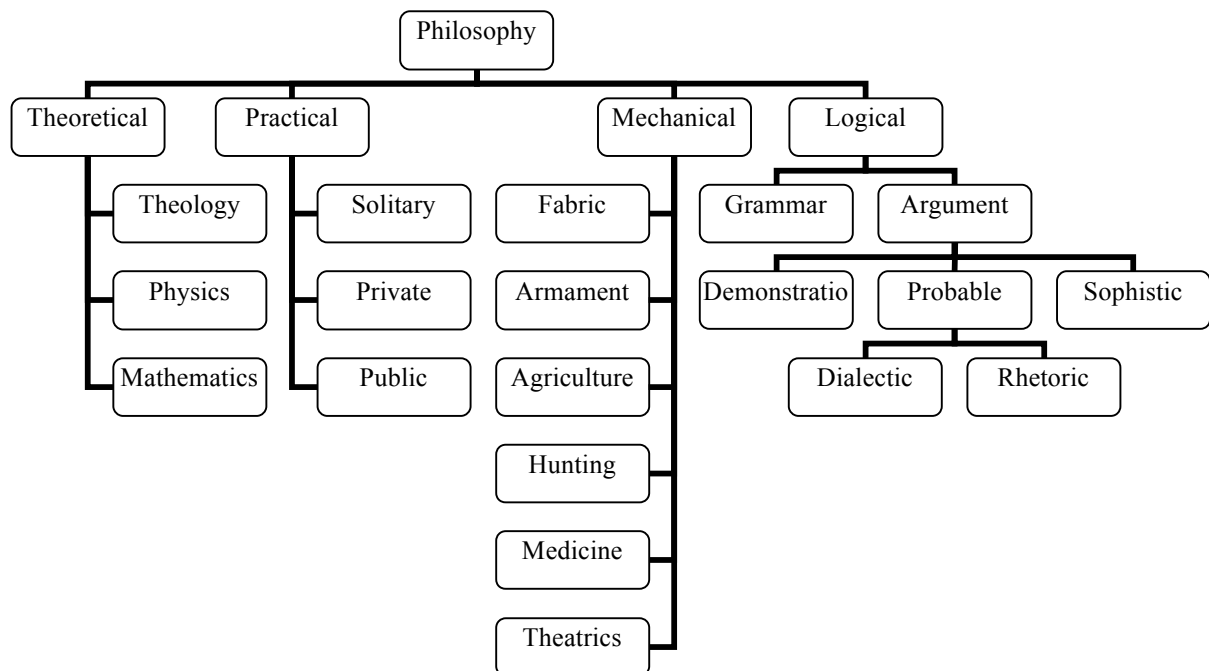
was ever-present in its ambition to cover all scopes of knowledge and this was also emphasized by the authors' intense efforts to arrive at a definitive categorization for their vastly expanded knowledge. The introduction of the alphabetic arrangement also took place during the period before the Middle Ages, although it was neither widely adopted nor essentially understood for its benefits. An interesting feature of this period was the collaboration between different sources for their compilation, which was lost during the following centuries and resulted in the emergence of different schools of encyclopedia making, almost unaware of each other.

3.2. Establishment to Enlightenment

As Christianity established its near-absolute control over the production and distribution of all intellectual effort, encyclopedia making adopted itself to the conditions of the age. Most encyclopedias aimed to cover the whole area of knowledge, transforming the ancient Greek ideas of a good education with the Christian ambition to complete and bind the knowledge of the world, in order to better understand the creator. The underlying assumption to such an ambition is the belief that God had two books, one being the Bible and the other being the nature. A complete encyclopedia would then complete our knowledge, therefore enabling us to be closer to the creator. Another characteristic of the medieval encyclopedias that led them to such ambitions was their lack of a fear of obsolescence in any conceivable future. Most of the works written in the medieval era had as their primary goal the conservation of the past accumulation of knowledge, and reporting the latest advancement in any field did not pose any serious urgency. Yeo illustrates this by stating that the mediaeval encyclopedias are directed towards the past and not the future (2001, 6). Despite the lack of appeal from an Enlightenment perspective to the later generations, the period has provided its moments of great achievements.

An early example is the dictionary known as *Suidas* whose completion is dated around tenth or eleventh century (Collison, 46). The importance of this work is attributable to its status as an early example of encyclopedic dictionaries and its utilization of the alphabetical order. Such an organizational scheme was found very rarely in preceding examples. Another very important figure of the period was Hugh of St. Victor, who compiled the highly influential work *Didascalicon: de studio legendi* in the 1120's. Apparently, he was not influenced by the organizational method of *Suidas* and proposed a classification of knowledge, continuing in the tradition of Aristotle. An illustration of this organization,

presented by Collison, proves useful as it demonstrates the increase in the breadth of knowledge in the millennia that passed since the scheme of Porphyry of Tyre cited above:



The *Didascalion* represents, in its system of classification, the age-old monastic tradition of Christianity and aims to counter-balance the growing influence of secular works, such as the *Suidas* mentioned earlier.

These very fine examples of encyclopedia making were highly successful and hundreds of manuscript copies survive to this day. Apart from their wide readership, they also influenced other encyclopedia makers who copied them freely to compile their own works, therefore enabling these most influential works to make their mark on many other readers under different titles.

Nevertheless, the crowning achievement of the medieval encyclopedic tradition belongs to the 13th century, and the *Speculum Maius*. Vincent de Beauvais’s outstanding work relied on both collaboration from colleagues and copied passages of past works such as Isidore’s, but what resulted is an excellent collection of essays and more importantly “a work of inestimable importance as the only repository of excerpts from some works no longer survive, as a mirror to the state of knowledge during 13th century” (Collison, 62). The *Speculum Maius* continued to be the only major encyclopedia for a long time to come, and its influence widened as it was translated into various languages. Collison states that following works aimed to appeal a

wider readership while sacrificing the depth and scope of areas covered, with respect to *Speculum Maius* (*ibid*).

Among most of the encyclopedias of the Middle Ages, some commonalities can be observed. Although alphabetical classification is known, thematic classification was more widely used. The scheme for various thematic arrangements differs among works as they depend upon assumptions concerning the moral significance of the knowledge being handled. The Christian notion that an appropriate moral state is the precondition for any advancement in knowledge was dominant among the schemes of organization conceived for encyclopedias. Many organizational schemes based on this assumption were manifested in various metaphors and graphic illustrations within different works.

A famous example is the tree of wisdom, which implies a common origin for all knowledge. A later illustration was as a map, which did not imply a common origin but lay down all that is knowable as a navigable, and therefore, conquerable territory. This was a conception that was shared by philosopher Francis Bacon (1561 – 1626) whose work represented the transition from the Middle Ages to the age of Enlightenment. Bacon's writings were one of the most important influences on the pioneers of the Enlightenment of the following century, in particular where Bacon called for the collection of new facts and the periodic revision of knowledge. Bacon's own encyclopedic ideal would also embody a much more interconnected structure of knowledge, not negligent of the explanations of connections. Such ideas were a harsh critique of the scholastic philosophy, which idealized the stability of knowledge, based on the past and a stable encyclopedia based on such knowledge, all organized around the moral basis of Christianity. Along with the scientific calling of Bacon, the beginning of the 17th century saw the undeniable need for encyclopedias in vernaculars, mostly resulting from the deepening and widening of knowledge in many fields (86).

Serving such a need was Ephraim Chambers' *Cyclopaedia*³, published in 1728 a work which would become the pride of the English nation. Chambers himself received a fellowship at the famous Royal Society for his achievement, and *Cyclopaedia* became a very popular reference. From many points of view the work was a pioneer, and one of its many significant features was the very elaborate and detailed cross references it incorporated into its alphabetic organization, supported with lucid illustrations. Not only it gave the impetus for the French

³ The full title was: *Cyclopaedia: or, An universal dictionary of arts and sciences, containing an explication of the terms and an account of the things signified thereby in the several arts, liberal and mechanical, and the several sciences, human and divine, compiled from the best authors.*

E. L. B. Taylor *W. B. A. S.*
CYCLOPÆDIA:

OR, AN

UNIVERSAL DICTIONARY

OF

ARTS and SCIENCES;

CONTAINING

The **DEFINITIONS** of the **TERMS**;

And **ACCOUNTS** of

The **THINGS** signify'd thereby,

In the several **A R T S**,

Both *L I B E R A L* and *M E C H A N I C A L*,

And the several **S C I E N C E S**,

H U M A N and *D I V I N E*:

The **Figures**, **Kinds**, **Properties**, **Productions**, **Preparations**, and **Uses**,
of Things *N A T U R A L* and *A R T I F I C I A L*;

The **Rise**, **Progress**, and **State** of Things **ECCLESIASTICAL**,
C I V I L, *M I L I T A R Y*, and *C O M M E R C I A L*:

With the several **Systems**, **Sects**, **Opinions**, &c. among **Philosophers**, **Divines**,
Mathematicians, **Physicians**, **Antiquaries**, **Criticks**, &c.

The Whole intended as a Course of Antient and Modern LEARNING.

Compiled from the best **Authors**, **Dictionaries**, **Journals**, **Memoirs**,
Transactions, **Ephemerides**, &c. in several **Languages**.

In **T W O V O L U M E S**.

By **E. C H A M B E R S** Gent.

Floriferis ut apes in salibus omnia libant,
Omnia nos ————— *LUCRET.*

VOLUME the FIRST.

L O N D O N :

Printed for **James** and **John Knapton**, **John Darby**, **Daniel Midwinter**, **Arthur Bettefworth**,
John Senex, **Robert Gosling**, **John Pemberton**, **William** and **John Innes**, **John Osborn** and **Tho.**
Longman, **Charles Rivington**, **John Hooke**, **Ranew Robinson**, **Francis Clay**, **Aaron Ward**,
Edward Symon, **Daniel Browne**, **Andrew Johnson**, and **Thomas Osborn**. M.DCC.XXVIII.

ENCYCLOPÉDIE,
O U
DICTIONNAIRE RAISONNÉ
DES SCIENCES,
DES ARTS ET DES MÉTIERS,
PAR UNE SOCIÉTÉ DE GENS DE LETTRES.

Mis en ordre & publié par M. *DIDEROT*, de l'Académie Royale des Sciences & des Belles-Lettres de Prusse; & quant à la PARTIE MATHÉMATIQUE, par M. *D'ALEMBERT*, de l'Académie Royale des Sciences de Paris, de celle de Prusse, & de la Société Royale de Londres.

*Tantum series juncturaque pollet,
Tantum de medio sumptis accedit honoris!* HORAT.

TOME PREMIER.



A PARIS,

Chez { *BRIASSON, rue Saint Jacques, à la Science.*
DAVID l'aîné, rue Saint Jacques, à la Plume d'or.
LE BRETON, Imprimeur ordinaire du Roy, rue de la Harpe.
DURAND, rue Saint Jacques, à Saint Landry, & au Griffon.

M. DCC. LI.

AVEC APPROBATION ET PRIVILEGE DU ROY.

Encyclopédie that followed in *Cyclopaedia*'s footsteps, it can also be credited as the stimulus behind the *Encyclopedia Britannica* of the later age. Collison states clearly that "almost every subsequent move in the world on encyclopedia-making is thus traceable to the example of Chambers" (104). When all its novelties and breakthrough are considered, *Cyclopaedia* is generally awarded the honor of being the first modern encyclopedia. It was reading this work of immense influence and popularity that led French bookseller André-François Le Breton (1708-79) to think that a translation might be a good investment. What Le Breton set out to accomplish would prove to be one of the most influential intellectual projects ever undertaken.

3.3. *Encyclopédie*, the Enlightenment and Beyond

Until the 18th-century, the influence of the medieval works was still great and the hold of the Church and the Crown over all intellectual output was immense. Considering the censors, the police spies and the authority of the established Church orders, publishing such a fundamental work as an encyclopedia would be a dauntingly intricate and brave task; especially if the encyclopedia in question was to be compiled by the controversial, and dangerous, philosophes of Enlightenment. The particular philosophe chosen for the job of editing it was Denis Diderot (1732-1784), a young man who was trying to build his reputation as one of the voices of the Enlightenment and, more importantly, for the immediate purposes of the project, an able French translator. *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers*, published between 1751 and 1766, would shortly evolve into something completely different, with little in common with the two volume work of Chambers, and spanning "28 volumes, of which 11 were illustrations, 72,998 articles totaling some 20 million words written by hundreds of collaborators" (Blom, 2005, xvi). The sheer volume of such a work would also have widespread economic implications, "involving a thousand printers, etchers, draughtsman, bookbinders, and others, meaning that almost one out of every hundred Parisians benefited from the enterprise financially, directly or indirectly" (58). It was this economic leverage that the project entailed which would save it from imminent oppression from the authorities. Publishing *Encyclopédie* would prove to be too lucrative a business to kill in spite of the dangers it presented and according to Blom, this was already a sign of the increasing political power of the newly developing bourgeoisie and its accumulation of capital (235). But, the intellectual framework of the *Encyclopédie* was far more important than any of its other features, and it had to come under many guises, most of

which required the subtle, and sometimes not so subtle, genius of Diderot and his contributors.

The whole project is full of signs of its philosophical stance, starting with the way the articles are arranged. The selection of alphabetical arrangement was not revolutionary in itself, but the *Encyclopédie* can be credited as the first major work to have understood the categorical implications of this organizational approach. Although it made the task of editing and writing the encyclopedia much more arduous, because the whole scheme and the complete list of keywords have to be laid down from the beginning with all the cross-references, it had very significant advantages. If the editors have organized the *Encyclopédie* by categories, they would be expected to devote a rather generous space to theology. But, since alphabetical order democratizes all titles, and mixes the categories up, the editors could get away with completely ignoring many such titles as devoting very little space to them. Apart from the alphabetical structure, the *Encyclopédie* also employed a tree of knowledge, like some of the previous works, but this also had its peculiarities for the careful eye. One would find heraldry next to pantomime and theology “found itself relegated to a withered and unproductive branch, leading directly into divination and Black Magic” (84)

Most of the subversive ideas within the articles have employed various techniques to deliver their sometimes subliminal messages. Diderot himself or his co-editor d’Alembert would skillfully disguise their opinions about matters behind competently written essays, which would discuss all the aspects of the issue in a scientific, and sometimes dull, manner but ultimately leave no conclusion other than the author’s, although this position is never explicitly revealed within the article.⁴ Entries concerning religious matters, which will be under the closest scrutiny of the censors, also had a curious feature. In the *Encyclopédie*, one would find that all the required religious articles for a reference work of the time have been dealt within immense detail and great length but also with staggering dullness and a lack of emotion. Not one member of the clergy could object to the content of the articles but the prose and the approach to the subject was so cold and lifeless, that it was guaranteed to kill any religious sentiment. The chosen author for these articles was Abbé Edme Mallet and he was responsible for almost all of the articles on religious matters, totaling up to a massive 484

⁴ An illustrating example is given by Blom, where Diderot in the article *Soul* explains that where in the body the soul might be located, refuting all the suggestions by case studies, ultimately leaving nowhere to put it and therefore implying its non-existence (78).

entries. Whether his articles reflect his state of mind or an intentional plot to debunk every pillar of the Christian faith, continues to be a topic of debate.

Still another important aspect of the *Encyclopédie* was its detailed descriptions of *arts et métiers*. The ambition of the publishers and the editors was to include all the crafts in existence at the time, not only by way of carefully detailed descriptions but also by means of elegantly crafted plates. This detailed treatment of the common people further highlighted by a lack of coverage of the noble families amounted to a significant social statement of the Enlightenment. By putting the people who undertake the actual production in the centre, and by valuing their crafts and trade secrets, the *Encyclopédie* presented what really mattered in society and widened its own base of prospective readers to a general public, who could actually learn practical things about their craft. Such a detailed portrayal of the pre-revolutionary France is also important, as it is now an invaluable historical document that described a world long gone in the fires of two revolutions to come. The artisanal crafts that are documented so meticulously, and the socio-political institutions depicted so critically were recast first during the French revolution. Following industrial revolution they were further revised to reflect a Western civilization that would have been alien to the creators of the *Encyclopédie*, although this new age realized some of their most passionate dreams.

Despite its shortcomings, the significance of the *Encyclopédie* cannot be overestimated. The *Encyclopédie* surpassed everything that has come before it, both in terms of depth as well as coverage. Never before had an encyclopedia covered the real-life issues of the common people in such detail while spearheading the most progressive ideas of its time. After the *Encyclopédie*, encyclopedias could at last be considered as look forward to the new developments within the sciences and society rather than being preoccupied with preserving and copying old knowledge. Yet another achievement of the *Encyclopédie* was establishing the encyclopedia as a very lucrative printing business, which was very important in motivating other entrepreneurs into the area, spawning copies that endeavored to surpass the original.

One such enterprise was the *Encyclopaedia Britannica*, first published in 1771 and went on to evolve into a publishing phenomenon, defining the ultimate in printed encyclopedias for many generations to come. The initial motivation behind such a venture was reaction against the anti-religious stance of the *Encyclopédie*. Although the Scottish founders of the *Britannica* may not have approved all the ideological posturing of Diderot and his work, they

were most certainly impressed by the financial success and saw the publishing potential for a locally provided reference work of similar, or even improved quality. Although the first edition fell short of the intended goals of its publishers, *Britannica* has succeeded in developing with every passing edition, and has kept itself up to date, continuing its existence through to the present. During the history of the enterprise, two editions rise above the others and deserve mentioning namely the 9th and the 11th editions. Published in 1888, the 9th edition, also known as the scholar's edition, featured a volume solely devoted to a comprehensive index and its subject coverage was ranged from color maps to practical, day-to-day information. Mostly thanks to its editor, Thomas Spencer Baynes, the encyclopedia featured a stellar quality of scholarship. In similar fashion, the famous 11th edition also featured articles from the best scholars of their time on their area of expertise and hailed by Collison as "probably the finest ever" (147). This edition, published in 1911, also has a historical importance as it epitomizes the ideals and the ambitions of pre-first-world-war industrial civilization.

During the 20th century, *Britannica* adopted the continuous editing system instead of separate editions in order to grapple with the increasing speed of new information. This method allowed editors to rewrite only the articles where the subject matter has changed considerably since its last treatment. This line of continuous evolution in editorial policy and the unchanging commitment to incorporating the greatest amount of human knowledge to date has earned the *Britannica* an unmatched reputation among encyclopedias. With the longest continuous publishing history of any encyclopedia, the *Britannica* arguably represents the most refined achievement of the genre and has established itself in a broader sense as a landmark achievement of the modern civilization.

Another notable title that came into existence in the two centuries that followed the *Encyclopédie* was the *Brockhaus*. The German compilation, first printed at the beginning of the 19th Century, adopted a very rapid cycle of updates from its beginning, both in order to catch-up with the latest developments as well as to protect its uniqueness in a market of readily available copies. Its emphasis on being up-to-date and its prose that aimed at presenting the subject matter in the most accessible and simple way, earned it great popularity and regard. *Brockhaus* has also enjoyed a longevity like that of *Britannica*, having enjoyed continuous print run well into the 21st century, when its publishers announced that they are considering discontinuing the print publication to concentrate on a digital edition.

Other examples of the genre that aim to follow similar principles were ample throughout the centuries and together, all these projects strengthen one overarching insight that, first surfaced during Diderot's time, namely that it is absolutely essential that a good encyclopedic endeavor combine both elements of excellent scholarship with a solid business plan. Combining these advances, the beginning of the 20th-century can be regarded as the culmination of the encyclopedic efforts of generations. The rising tides of nationalism of the past century have created many independent nations that are eager to establish themselves, and compiling their own encyclopedia was a common strategy. A general survey of these publications reveals common features, most of which can be traced back to Chambers and Diderot whose legacy stands on a tradition as old as memory. Collison lists these almost universally accepted principles of what an encyclopedia should be as:

- Written in the language of the country in which it is published
- Alphabetical order
- Articles written by specialists
- Subject specialists employed as sub-editors
- Biographies of living people
- Maps and illustrations.
- Bibliographies
- Analytical index of people, places and minor subjects
- Supplements for staying up-to-date
- Numerous in-depth cross-references.

In search for refinement and advancement, such principles inevitably make up a body of criteria against which every emerging form or work will be judged for credibility and longevity. Collison states that any enterprise neglects any of the above principles have suffered either commercial failure or failure to be recognized as an authoritative reference (199).

Regardless of its era or core principles, encyclopedia making always aims to achieve the impossible. With the ever-increasing momentum of events and developments changing the outlook of every facet of civilization, the speed of the printing press falls behind the goal of covering the entire world's information, even more so than a few centuries ago. Also, the fact that the articles in a classical encyclopedia are written by a few experts limits the possible coverage of topics, despite the efforts of the editorial team. According to Collison, an

excellent bibliography becomes one of the most important ingredients of a reputable encyclopedia set in print. On the other hand, it is natural that the task of organizing and distributing humanity's knowledge also seeks out different outlets.

As illustrated in the previous chapter, during the last decades of the 20th-century, computer-based writing has had profound effects on all aspects of print culture and it is only natural for encyclopedia publishers, once the leaders of the printing revolution, to search for ways to appropriate its benefits. The next part of this thesis will indeed demonstrate these efforts, but more importantly, it will analyze a new form of encyclopedia that came into existence with the proliferation of the Internet as a medium for sharing and collecting information with unprecedented speed and agility.

4. Wikipedia – The Free Encyclopedia

...for though it has many omissions and contains much that is apocryphal, or at least wildly inaccurate, it scores over the older, more pedestrian work in two important respects.

Douglas Adams, *The Hitchhiker's Guide to the Galaxy*

4.1. Encyclopedia Embraces the Digital Age

A digital encyclopedia has been a compelling idea since the great potential of computers for processing large amounts of textual content became evident. As David Bolter argues, computer-based writing provides the possibility of a completely different approach to texts, an approach that would serve the core objectives of an encyclopedia very well. David Weinberger's *Everything is Miscellaneous* (2007), in line with Bolter, surveys these unique possibilities of the computer-based storage of information and explains that a text in a computer can be indexed and categorized in an infinite number of ways, depending on the tastes and needs of the current user. So while one user might look at the same database in alphabetical order, another can sort the data from longest articles to shortest, or any other way he or she chooses. The key aspect of this ability is the fact that all possible schemes of organization become arbitrary and the whole presentation of data is open to interpretation, limited only by the user's imagination.

Another complimentary aspect of computer-based writing is the massively increased ability to conduct searches within texts, something that could not be dreamed of at the time of paper based text storage. In an electronic database, searches can be conducted down to the smallest particle that constitutes a meaningful whole and then the whole data structure can be reorganized according to the results. In fact, the most obvious example to this ability is the Internet search that any periodic user conducts tens, maybe hundreds of times while browsing. The results page of a random search on Google is nothing less than the whole Internet, indexed on the fly according to the criteria given by the user.

It is very clear that the capacity of instant reorganization, of being miscellaneous, as Weinberger would call it, has very fundamental implications for encyclopedias. First of all, the long-established tradition of alphabetical order is now only one of the possible methods of classification. Also, the length of the articles does not need to be standard which means the

compromise between providing an easily accessible article and one that provides detailed information can be avoided. Different users with different needs can select between shorter and more detailed versions of the same entry. Such functionality results in a reference work that can “address both the educated novice and the expert” as Bolter suggests (11).

An equally important aspect of the digital encyclopedia is its ability to transform its system of cross-references from a linear list to links of hypertext. With the ability to create links from every component of an article, be it the title, an individual word, a photograph or a diagram, the digital encyclopedia offers nearly limitless potential for cross-referencing and connecting parts of knowledge to each other, providing greater versatility. Added to all these advantages is the better ability to handle visual elements, photography and even video, so a digital encyclopedia offers many opportunities to expand the basic idea of an encyclopedia.

The major publishers have, of course, noticed the merits of the new medium as well, and some have started to compile works that are adapted to the new standards and the new media, along with some of the newly formed giants of the rapidly developing computer industry. *Encyclopedia Britannica* has produced digital versions with multimedia and hypertextual links since the early 1990’s on CD-ROMs and later DVD-ROMs. Microsoft has also developed the *Encarta* 1993, and followed with revised editions, also featuring rich multimedia content. Among others, these works aimed to bring the versatility of the computer based writing to the world of the encyclopedia.

In addition to the CD-ROM and other portable media, after the proliferation of the Internet, online editions were conceived. *Britannica* started to provide an online version of its content in 1994 with a model that allows free short versions of its articles and an option to access full articles with a paid subscription. Microsoft has also adopted an online version of its *Encarta*, where full articles can be accessed with advertising on pages. Despite the efforts of these top-down content providers, yet another model for conceiving and sharing information on the web was developing and its contribution was to bear the mark of both the internet and the computer-based writing space to a much greater degree.

4.2. An Encyclopedia by the People, for the People

When the Internet entrepreneur Jimmy Wales set out to establish a free, online encyclopedia, his plan was not completely different from the rest of the online content available at the time. The name of the project was *Nupedia* and Wales appointed a philosophy scholar, Larry Sanger, as the editor-in-chief of the peer-reviewed project that was to be written by the experts. Unfortunately, after three and a half years of compiling and editing, only 24 articles were fully completed and a disappointed Wales started looking for alternative ways to realize his original mission, to create a free encyclopedia that would make the knowledge of the world more accessible to everyone. Upon being introduced to wiki technology by Ben Kovitz, a computer programmer, Wales realized that a wiki site could be a model for an encyclopedia. Wiki, meaning “fast” in Hawaiian, is a website that is specifically designed to allow its users to change its content very easily. Its designer Ward Cunningham has described it as “the simplest online database that could possibly work” (“What is Wiki”). Based on this model, *Wikipedia* came online at its own domain at Wikipedia.com, on 15 January 2001. The original intent was to utilize user input to *Wikipedia* as a feeder for the struggling *Nupedia* project, but the user driven content of *Wikipedia* proved at a very early stage to be a phenomenon on its own. Impressed by its success, Wales abandoned *Nupedia* to concentrate on the rapidly expanding new project.

Since its creation, there has been a constant influx of users to the site and the amount of content generated has been rising steadily. According to the figures quoted by *Wikipedia* itself (“History of Wikipedia”), the first year of the project saw the creation of over 20.000 articles. In tandem with Wales’ original mission to provide free information to all people, localization efforts of the online encyclopedia began very early in its development. The first in the series of non-English versions was the German edition, launched in March 2001, and very soon after that, most languages spoken by significant populations developed a local *Wikipedia* with both unique and translated articles. According to *Wikipedia*, “as of 2007 around 75% of all Wikipedia articles are contained within non-English *Wikipedia* versions” that span more than 250 languages (*ibid.*).

During its development over the last five years, *Wikipedia* has vastly expanded both in the total number of articles, and the breadth of individual entries. The total number of articles in all languages has reached 7,5 million, of which more than two million are in English. As its coverage becomes more extensive, and as each article becomes more refined, the already very

enormous popularity of *Wikipedia* is becoming a presence in the daily lives of millions of Internet users.

It is evident from the outset that the *Wikipedia* represents a completely revolutionary entry into the world of encyclopedias and its presence has created much turmoil and discussion. But before moving onto these issues, it is important to review the actual process by which the free encyclopedia is written, for most of the criticism is based on a lack of knowledge concerning the mechanisms and internal workings of this, sometimes perplexing, enterprise.

4.3. The Wiki Way – How *Wikipedia* is written?

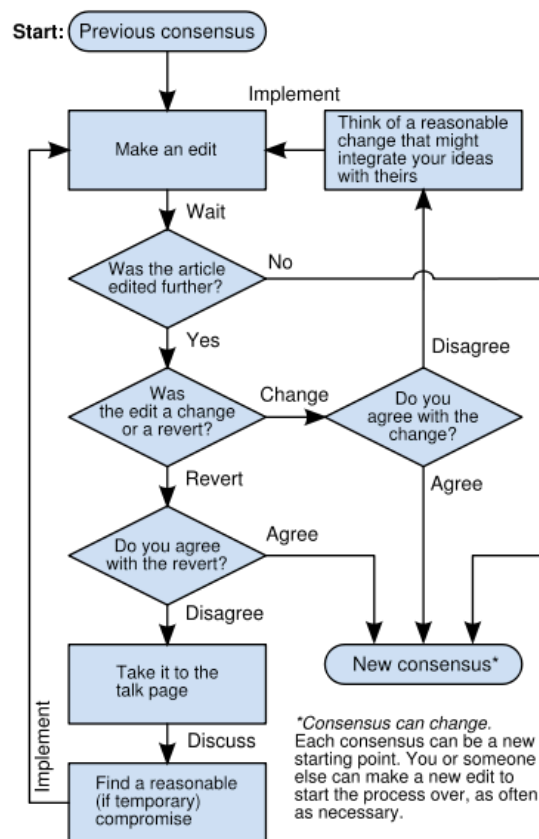
At the core of *Wikipedia* lies the *MediaWiki* software that enables the enterprise's ambitions to openness, scalability and internationalization. As a result of an intense development phase, the software aims to provide the users and editors of *Wikipedia* with the most streamlined and efficient flow at the highest possible speed. Such an experience is crucial, if the common user is expected to contribute to the free and openly-edited encyclopedia. Of course, merely setting up the software does not a *Wikipedia* make. In order to provide a framework in which irregular contributions from numerous users are to be submitted, it was essential to lay down certain policies and style guidelines.

Although Jimmy Wales himself initially announced a number of principles, most of the policies were developed and later edited by emerging editors and, like most of the articles, they have an evolving life of their own. According to the "Policies and Guidelines" page on *Wikipedia*, certain core principles are non-debatable and form the bedrock of assumptions on which the rest of the policies and guidelines are written. The *Wikimedia Foundation* is the exclusive authority deciding over such fundamental issues. The *Foundation* defines itself as "a nonprofit charitable organization dedicated to encouraging the growth, development and distribution of free, multilingual content, and to providing the full content of these wiki-based projects to the public free of charge" ("Wikimedia Foundation").

The Board of Trustees, consisting of seven directors, of the *Foundation* constitutes the "ultimate corporate authority" ("Board of Trustees"). Probably the most important principle set by Wales and later by the *Foundation* is the *Neutral Point of View* ("NPOV"), which aims to direct all the editing and contributing practices. In the broadest sense, NPOV addresses the need of an encyclopedia article to present an objective and unbiased perspective of its subject matter. The rest of the issues addressed by the *foundation* are mostly complimentary to the

NPOV policy and in general state that the way to achieve the goal of any enterprise of the *foundation* is the “wiki process”, whereby the content meets the required standards in an iterative process and by multiple contributions from various users.

The *Official Policies and Guidelines* presented on the *Wikipedia* is the combined result of such an effort. The policies listed range from the way users should behave while using the encyclopedia to possible legal and copyright issues. One interesting point is the only global policy listed, which requires that users “ignore all rules” if a rule, policy or a guideline hinders the development of *Wikipedia*. The combining principle, along with NPOV, of all policies and guidelines is *Consensus*. The idea of consensus simply aims to bring together the established rules and “ignore all rules” maxim together. In matters of both content and general editorial policy, the establishment of a reasonable consensus among differing opinions is always the defined goal of the project and, when combined with the idea of iterative edits, it aims to evolve into a developing and self-structuring system. The relevant article (“*Wikipedia:Consensus*”) in the encyclopedia itself presents a flow-chart on how an editorial process should work based on the principle of consensus⁵.



⁵ <http://en.wikipedia.org/wiki/Wikipedia:Consensus> (Accessed: 26.07.2008)

Apart from *Consensus*, there are other governing policies set out over time and the current accumulation of policies and guidelines is categorized under the *Five Pillars* on which the whole project rests. The *Five Pillars* are listed as follows;

1. ***Wikipedia is an encyclopedia.*** Incorporated in this definition are the policies regarding the content, which address issues like *Neutral Point of View*, *Verifiability* and *No Original Research*. By defining its aim and content, this pillar also related to issues such as *What Wikipedia is Not*, such as a publisher, a directory, a blog, social networking site or an advertisement medium.
2. ***Wikipedia is free content.*** Policies that define the open character of the project are grouped here. A main principle is that anyone can contribute and no one owns any specific part of the project. Distribution and sharing of the knowledge accumulated is given primary importance.
3. ***Wikipedia works by building consensus.*** As discussed above, seeking a reasonable consensus is the main editorial policy guideline.
4. ***Wikipedia has a code of conduct.*** Policies relating to the way articles should be written and edited are categorized here, starting with “act in good faith” and *assume others are acting in good faith too*. Among more specific policies are “never disrupt Wikipedia to illustrate a point” and “avoid edit wars”. It is clear that the code of conduct aims to provide a free and open working space where the basic principle is mutual respect and the seeking of consensus over matters of disagreement.

Along with the four pillars outlined above, there is a fifth one that leaves the door open for further developments in various areas of policy and usage in general.

Wikipedia does not have firm rules. Apart from the general principles outlined above, any contributor should not be afraid to damage the project and make his contribution if he/she thinks it will benefit the ultimate goal of being a free encyclopedia. Such attempts will be perfected by further edits and corrections made by others based on the consensus principle. Resulting in a system where openness and good-will becomes the most important requirement.

Accompanying the official policies is the *Manual of Style* placed in another article that presents the guidelines of how to write about certain topics and how to preserve a coherent structure within the entire encyclopedia. The manual covers details from how to lay an article out to specific typographical rules. Although the comprehensiveness of the rules is very impressive, some new users, and veterans find the sheer number of rules and regulations intimidating. This paradox is one of the problems that will be highlighted in the next section.

Finally, one very important feature of the editing system implemented in the *Wikipedia* is the preservation of all previous versions of every single article. This means, a regular user can track every individual change that has been made to it since its creation. The result of such a policy is the fact that nothing is actually changed in *Wikipedia* as a result of continuing edits, knowledge and various ways of presenting it are only added to the whole. It is evident that

such a possibility adds an extra layer of information for researchers and regular readers who aims to comprehend the *Wikipedia* thoroughly.

Regardless of the safeguards that this cumulative approach to edits offers, probably the most important parameter of the free encyclopedia's content is the *General Disclaimer*. In it, the editors explicitly state, in bold capital letters, that "Wikipedia makes no guarantee of validity", followed by a declaration that the whole project does not intend to be a complete and reliable source of research, and that none of the information obtained through the site should be treated as such. By openly declaring its lack of ambition in this regard, *Wikipedia* arguably summarizes its greatest distinction from traditional encyclopedias. The free-encyclopedia positions itself as a starting point, where very competent introductions to diverse subjects can be made and found, while it encourages users to consult other sources for further verification.

Of course, even such an open disclaimer does not prevent a variety of problems that may arise from the creation of an encyclopedia that anyone can edit. A number of controversies have risen over *Wikipedia* since its conception, and some examples deserve to be treated in some detail as they illustrative the advantages and shortcomings of this new and popular resource. In the following section, I will illustrate some of the most relevant criticism directed at the *Wikipedia*, covering both oppositions to the project on ideological grounds, and on the issues that originate from the community dynamics of *Wikipedia* itself.

4.4. Criticism of *Wikipedia*

Since its founding in 2001, *Wikipedia* has been criticized for many different reasons and by a wide variety of parties. Interestingly, the most comprehensive list of these criticisms can be found in the relevant article in the encyclopedia itself. The entry, *Criticism of Wikipedia*, is well-structured in listing which aspects of the project have been criticized with references to the relevant sources. Although topics of accuracy and the widely-reported controversies about biographies are mentioned, the article goes deeper and also lists more interesting issues like "use of dubious sources", "difficulty in fact checking" and the mode of language employed in the articles. Issues such as the claimed systemic bias in the coverage of the encyclopedia, and the much-debated issue of anti-elitism are also addressed, along with *Wikipedia's* wider exposure to vandalism and political debate. Of course, the most significant aspect of this article is its mere existence. As harshly criticized as it is, the open model of *Wikipedia* nevertheless shows how it accepts what previous encyclopedias would never have included.

But this in itself certainly does not mean that *Wikipedia* is perfect, and represents a goal accomplished by new media, yet it is certainly a notion to be considered for the conclusions of this study.

Although not the most constructive, but the most widely covered and repeated criticism of *Wikipedia* is concerned with the reliability and accuracy of the collaboratively written encyclopedia. Some popular press outlets and advocates of the established notions of knowledge creation have voiced their concern over the openness of the wiki system, warning all users to refrain from citing the content of *Wikipedia* as a valid source. Probably the most famous, and most systematic, study of the reliability issue was conducted by the respected scientific journal *Nature*. In the report published December 15th, 2005 *Nature* cross-tested the accuracy of certain scientific articles in *Wikipedia* and the *Encyclopedia Britannica Online* by consulting experts on the respective fields. The results of the study showed that the collaboratively written and open structured, free-to-access *Wikipedia* has comparable factual correctness with *Britannica's* articles which are written by experts and are only accessible to paid subscribers. The results of the study are reported widely and created much controversy about both its findings and its methodology.

Probably the most significant, and substantial, response to the *Nature* study has come from *Britannica Inc.* whose refutation of the study's accuracy was published in March 2006, to which *Nature* replied in a point-by-point answer. Also fuelled by a number of incidents that involved biographical errors on publicly visible figures, the factual reliability of *Wikipedia* articles seemed to occupy the majority of the criticism at the enterprise, but accuracy is certainly not the only aspect of the open encyclopedia that has come under scrutiny. Moreover, finding a factual error in an article as the grounds for launching criticism of the whole project is not entirely constructive, since the original premise of the open encyclopedia is based on a continuous editing process. All articles in *Wikipedia* are continuous works in progress and any user accessing them is only viewing a temporary stage. Although this notion is alarming when considered from a perspective where encyclopedic knowledge has a claim of longevity, *Wikipedia's* openly fluid approach should be understood not as a failure of the old model but as an alternative to it.

Overall, rather than pointing towards a final answer, the debate around *Wikipedia* helps to focus the project onto its priorities because definitive answers and the notion of arriving a conclusion is against its very nature. In that sense, the above mentioned criticisms are very useful in pointing out weaknesses and strengths in *Wikipedia* but also in suggesting ways of mending the perceived problems. But of course, external criticism can go only so far when a

project like *Wikipedia* is concerned, because the active community of users are as determinant as the theoretical premise of the encyclopedia and issues related to them are just as critical for the project's future. *Wikipedia* community consists of both anonymous individuals who contribute only once and tightly organized and very hierarchical social groups formed by dedicated individuals participating in hundreds, even thousands, of edits. As an organic and highly active social sphere, *Wikipedia* community, quite expectably, goes through conflicts of various severities.

As argued by Benkler in his study, the biggest challenge faced by the community of *Wikipedia* is developing an alternative system of accreditation. Similar to the open-source software projects, *Wikipedia* has naturally developed into a meritocracy where prolific editors who combine useful contributions and longevity in their efforts started to make a name for themselves. As intended in any socially open enterprise, likeminded individuals found each other and started to form ad hoc workgroups. Such groups and dedicated editors are also mainly responsible for clearly defining various policies and guidelines that aim to standardize certain critical actions throughout the project like the deletion and editing of articles. It is now beyond question that these relatively small communities of dedicated individuals are responsible for the majority of work done in *Wikipedia*. But, even though these editors are critical and their accumulated knowledge and wisdom in running things central to the overall stability of the project, their internal struggles and disagreements are also amplified to the uninitiated and inexperienced users.

While the core of dedicated editors concentrate their efforts on their reputation and credibility, established within their tightly-knit community, and contribute to the ever broadening and deepening body of regulations and rules of the enterprise, one question is beginning to surface quite often among the commentators from various levels of involvement; "Are the barriers of entry slowly rising?" or "Has *Wikipedia* started to betray its own founding spirit?" It is now a commonly encountered criticism of *Wikipedia* around the Web that newcomers and non-frequent contributors can no longer find the open community that they once cherished. Over-complicated bureaucratic processes and hostility towards newcomers from established editors can, in most cases, be traced to a central dichotomy that currently exists within the *Wikipedia* community, namely the debate between inclusionists and exclusionists.

Although the premise of the antagonism can be represented by the discussions concerning the purpose and content of the *Wikipedia*, the editorial stances and behaviors surrounding this debate have started to draw attention only now that the project has reached a certain critical mass. On one side of the spectrum is the “Association of the Deletionist Wikipedians” who have pledged to achieve a better and higher quality encyclopedia by removing all that is not necessary or useful. According to their homepage, they argue that *Wikipedia is not a junkyard* and its content should be filtered. They call for the speediest deletion process possible for all articles that do not conform to core *Wikipedia* principles like *neutral point of view* and their position is defended on the basis of arguments of quality and integrity. The deletionist approach also calls for the deletion of articles that are “not notable” and editors who have adopted this approach have also gained a reputation for deleting “stub” articles much too swiftly. Stubs are snippets that contain minimal information and aimed at acknowledging the existence of a subject and the need for an entry on it. Since its founding, stubs have been a central part of *Wikipedia* and critics of the deletionists argue that pruning them much too early without, giving them a chance to become real articles, will hamper the development of the project.

On the other end of the spectrum is the “Association of Inclusionist Wikipedians” which defends the position that *Wiki is not paper*. According to the inclusionist approach, *Wikipedia* does not suffer from the limitations of paper, and therefore can afford to contain any piece of knowledge, hence there is no need to apply selection criteria that relate to judgments of whether certain things should or should not be in an encyclopedia. One of the central arguments of the inclusionists is that any inadequately written or sourced article will represent a true value in the future when it will be cleaned up and rewritten according to standards.

As a result of this polarization among established contributors, two editors with different allegiances treat the same article in a completely different way, and it is clear how such behavior might hinder the future of the whole project. Although much of the debate within the community seems to revolve around the creation and deletion of new articles, an equally important issue is the quality of the existing ones. As illustrated by Jones in his paper “Patterns of Revision in Online Writing: A Study of Wikipedia's Featured Articles” (2008), the information content of *Wikipedia* articles generally does not pose any incompetency but the language in which they are delivered often leaves much to be desired. So, polishing existing articles becomes as important as adding new ones, and the routine monitoring and editing tasks is not as involving or rewarding as creating a whole article.

In order to continuously increase its level of accuracy and lucidity while improving its coverage, *Wikipedia* has to keep delivering an intellectually exciting and motivating experience both for experienced users and invaluable contributors. Striking the balance between being welcoming to outsiders and satisfying the needs of experienced editors will be a time consuming task at the least and will require cooperation and goodwill. In the light of these criticisms, it is fitting to analyze the future prospects of an open and free encyclopedia within its own framework before assessing its place amongst the encyclopedic tradition.

4.5. Future of *Wikipedia*

The debate concerning the plausibility and usefulness of a project like *Wikipedia* has become almost passé and, as I have been illustrating, the pressing issues are what exactly should be in the encyclopedia and how information should be monitored, along with the eventual problems that emerge out of the intense social interaction that has to take place during the day-to-day activity of users and editors. But, even the harshest criticism proves itself to be addressable within the premises of *Wikipedia* and the analysis put forth by Benkler and Shirky mentioned earlier are helpful in postulating the ways *Wikipedia* improve on its goals.

Clay Shirky argues that it took more than a decade for the social ramifications of email to appear. Adopting his argument to wiki style editing, feelings of insecurity and confusion on the part of the uninitiated might gradually transform into an understanding of the workings and principles of a collaboratively written encyclopedia. *Wikipedia* is already one of the most frequently visited sites on the Internet and has become a daily part of the lives of many millions of people. It is not hard to imagine a future where *Wikipedia's* existence as a quick and a free source of information is taken for granted. Of course, most instructors are currently against its use as a reference source in research projects and many people find its internal workings a bit arcane. But, following Benkler's framework, the benefits of collaborative authoring should not be judged against a utopian understanding of what something should be, but against the ecosystem it replaced.

With their ability to create an environment where a previously unimaginable diversity of people could gather to work on a single project with immense speed and interactivity, online collaborative authoring tools signify changes in many of our assumptions concerning how to interact with knowledge creation and management. *Wikipedia* is arguably the most successful and visible project based on this method up to now and a brief evaluation of its dynamics

point towards a system that is slowly but constantly maturing. The possible effects of collaborative authoring schemes for individual and political freedom, as are explicitly discussed by Benkler and Shirky, are much more fundamental but their evaluation is beyond the scope of this thesis.

Overall, the collaborative authoring model proves to be a valid alternative production method for an encyclopedia. *Wikipedia* represents a move towards the future for the whole encyclopedic form and for this, it is revolutionary. As various authors mentioned in the first chapter argued, our perspectives regarding how to handle information, knowledge and culture is in a flux. When stripped from its current, and manageable, problems, *Wikipedia* offers an agile and able framework very much fit for the needs of the 21st Century affordances and demands of collecting and storing knowledge.

5. Towards a Better Understanding of Encyclopedia

A review of the *Wikipedia* points to a system of collecting, editing and storing knowledge that has no direct precedents. Over the passing centuries, the trade of compiling and publishing encyclopedias has become a well-established business. Although what Diderot and his collaborators achieved with the *Encyclopédie* was anything but common, the relatively slow evolution of the format they successfully established has set the shape of encyclopedias for the coming centuries. Now faced with such a radical alternative as the *Wikipedia*, this established notions of what an encyclopedia should be is finding itself under scrutiny.

When the emergence and wide popularity of *Wikipedia* is placed within the general context of the proliferation of the Internet, it becomes clear that the dominant form of communication is shifting towards a new paradigm. We could call it a new era to surpass the *Neotechnic* phase of Mumford because, as Benkler's arguments have so eloquently demonstrated, Western civilizations are leaving behind the 20th-century's established norms, and are slowly, painfully constructing new ones around their new abilities. As Shirky argued, this is largely due to the inherent ability of our new media to facilitate group action and collaboration. What both Benkler and Shirky so precisely identify as the economic enabler of this ease of group forming is the fact that networked personal computer is becoming ubiquitous, and this very affordable piece of hardware is the principal tool for both producing and consuming informational and cultural content.

As a result of this ease of connecting and group forming, the world is becoming more and more of a *Global Village*. In fact, McLuhan's insights into our future with our electric media in general are gaining much more validity. In his *Digital MacLuhan* (1999), Paul Levinson argues that McLuhan was early with his analysis and that most of his propositions are very much applicable to the Web with even more precision. When McLuhan claimed that the extreme acceleration of communication media would reconnect our previously fragmented subjectivity, he foresaw a retribalization of our societies. The Internet, in similar fashion, fosters communities that could never have formed in the past and giving these communities tools that enable them to do previously unthinkable things, like collectively writing an encyclopedia.

The need for an encyclopedia has almost been endemic to human nature, as seen throughout the study of its history. As much as we need social groups and communication, we need some form of repository for our accumulated knowledge. Over the centuries, the form of

this repository has evolved as a result of the interaction between societies and their dominant form of communication media. Going over this pattern with the combined knowledge of media theory and the history of encyclopedias is an exercise that reveals the relevance of *Wikipedia* to networked societies.

As the work of Havelock and Ong illustrated, the ancient Greek civilization around Plato's time was struggling with the slow change over from a predominantly oral culture to a literate one. This shift was in part responsible for their encyclopedic efforts. Although ambitious in nature and true to the later encyclopedic norms, philosophers of ancient Greece sought to combine the components that would make up a *well-rounded education*, but their works was a reflection of their own minds. Both their narrative style and their approach to categorization and writing in general have made the oral structures of their discourses evident.

The subsequent Christian domination over knowledge and consequently the encyclopedia throughout the Middle Ages lent a distinct character to the works that were produced during the era. While written manuscripts became the norm for storing and distributing knowledge, encyclopedias become much more organized and comprehensive. As I argued above, the focus of these, usually gargantuan, works was to preserve the wealth of knowledge in as complete form as possible. Returning to Innis's proposition that there is a bias in every communication medium, the handwritten manuscript and the obsession with preserving knowledge in monasteries fits his description of time-biased societies.

The passage from orality to literacy created a rupture in the fabric of culture and consciousness, and similarly, a rupture marked the arrival of the printing press. Some of the first people to truly understand its power were the publishers of the *Encyclopédie*. Of course, it wasn't the first encyclopedic work to be printed but it was the first one to conjoin its commercial power with the advocacy of the ideals that the printing press would help spread during the following decades. It was Diderot's achievement, to combine, with the help of others, both a record of the soon-to-be extinct arts and crafts of the pre-industrial world and advocated ideals of the coming age. The *Encyclopédie* is a masterpiece chiefly because it excels in two critical areas; it is a reliable and comprehensive repository of the existing knowledge that remodeled the medium in which it is delivered; the tomes of the *Encyclopédie* were demonstrations of the capabilities of printing press.

Passing centuries saw the proliferation of the print culture, which found its excellence in the encyclopedic works with the *Britannica*. With every consecutive edition, the editors of

Britannica perfected their trade and brought into existence what we now regard as the gold standard of encyclopedias. Both as a repository of knowledge and as a business enterprise, *Britannica* represented the pinnacle of its age, but one that would adapt to changing knowledge over time. McLuhan and Postman's formulations of print culture found their expression in the late 19th century, which corresponds to the publication of the landmark 9th and 11th editions of the *Britannica*. The scholarly prose and overall comprehensiveness of these editions made them exceptional within the timeline of the enterprise, yet their characteristics are typical of literate culture of their time.

After the First World War, shortly after the turn of the 20th-Century, the media landscape was reshaped. With the introduction of radio, cinema and later television, the dominance of print culture made room for mass media, whose characteristics were discussed by McLuhan, Postman and Benkler in great detail. Encyclopedias in general, and *Britannica* in particular, have spent the 20th century as if in a race to stay relevant. Few structural changes have been suggested and they were mostly unsuccessful. The print encyclopedia set that was the cornerstone of its age has become a somewhat cumbersome, yet necessary, repository of the mass media era. As the broadcast media of the 20th century did not offer any alternative to the encyclopedia, it has become a niche product, increasingly justifying its existence by claiming to be irreplaceable. Of course, as a result of the analysis I have presented, the incorrectness of such a claim can be presented.

Encyclopedias, as we came to know them in the 20th century are products of a certain conception of knowledge and subjectivity, and a certain production technique. They are not an embodiment of an ever-relevant ideal in their current form. As my overview of their history has shown, they have adapted to the dominant notions of how to arrange and disseminate knowledge of the societies that have produced them, which I have analyzed with the canon of media studies literature. In many cases, encyclopedias have been the crowning achievement of their epoch and proliferated the dominant mode of communication of their time, and they were always repositories for the ideas that will bring the next great era. From this perspective, it was almost inevitable that, with the turn of the 20th-century, with the computer revolution and the proliferation of the Internet, a new form of encyclopedia would come into existence.

Although many recognize the Internet's potential, the profundity of its effects has been understated by all but a handful of theorists. Benkler and Shirky are amongst those few and

their texts, as illustrated in the first chapter, give the concept of the Internet revolution a fuller content. An example to the promise of the Internet is *Wikipedia*, a reworking of our urge to collect and organize information and knowledge; what motivated Plato, Vincent de Beauvais and Diderot, and the editors of *Britannica* for 237 years. Like all the outstanding efforts before it, *Wikipedia* combines the dedication to achieve its goal by using the cutting edge communication tools of its age and becoming a repository of the ideas that make it appropriate to its time. It is, of course, not certain that the *Wikipedia* experiment will prove to be a continuing success, but the *Encyclopédie* did not have a second edition. It succeeded in changing the world in its first print run. *Wikipedia* charts a future for the encyclopedic endeavor that is more flexible, open and accessible, traits that advance the core objectives of an encyclopedia.

But where does this leave *Britannica* and other paper-based old bastions of knowledge? Will they simply vanish into obscurity or do they still have a role to play in this next phase of encyclopedias? Erin McKean, chief consulting editor for American dictionaries at Oxford University Press, provides an answer during her lecture “Redefining the Dictionary”, “When cars became the dominant mode of transportation, we didn’t round up all the horses and shoot them” (McKean). David Bolter and Richard Grusin, in their 2001 volume devoted to the concept of remediation, previously mentioned during Bolter’s *Writing Space*, argued that any remediation of an old medium by a newer one also implies a repurposing of the old one as well. In the case of encyclopedias, my study has argued that the model represented by *Wikipedia* can be considered as a viable alternative to the print encyclopedia while it also remediates the old from in many respects. Meanwhile, the print encyclopedia, in accordance with the theory, will continue its existence mostly for its tactile feel and the value it represents emotionally, culturally and historically.

Encyclopedias have evolved with their cultural and technological surroundings throughout the times and it would be a mistake to consider the emergence of a new form in the shape of *Wikipedia* as a threat to an established institution. As I have illustrated, the purpose behind compiling an encyclopedia transcends a single form or method and the contribution of a new work should be judged with respect to its ability to address our yearning for knowledge and not with direct comparison to previous norms and practices.

6. Conclusion

It is a common mistake to misjudge the effects of a shift in our dominant mode of communication, especially one that we are presently experiencing. In this thesis I have aimed to remedy this problem by offering a broader and deeper analysis of an issue that is central to the debate surrounding the effects of the Internet. I choose encyclopedia as my object of analysis because the permanence of the idea behind it outdates all specific media.

Operating under the belief that a common cause of the above-mentioned misjudgments is a lack of perspective and historical knowledge, I have, first of all, aimed to provide a comprehensive conceptual framework. In my presentation of the media studies literature, I have aimed to cover as broad a historical period as possible, while selecting only the most accomplished and relevant texts, in order to both understand the evolution of the discipline and to uncover critical connections and influences within. In so doing, I was able to present a more complete theoretical framework that would match the historical depth of the analysis that will follow.

In order to fully comprehend the evolution of the encyclopedic form, I have presented an extended history. Most of the studies concerned with the effects of the Internet on the encyclopedia assume the latest print form of the encyclopedia to be the only possible one. I have demonstrated by combining a historical overview with the theoretical framework of media studies that an encyclopedia is a much more organic and evolutionary tool that adapts itself to changing conditions. In order to understand the implications of the Internet on the encyclopedic form, I have chosen *Wikipedia* as the best implementation. After a presentation of the workings of the project I have covered some of the most grounded criticism concerning *Wikipedia* and, also with help from the relevant media studies literature, I have concluded that it represents a sustainable model for an encyclopedia.

Overall, by providing a much more historical and comprehensive analysis, I was able to present a more grounded perspective on the importance of *Wikipedia* for the encyclopedic form, which is currently in a critical position for understanding the impact of the Internet on our societies. It should be noted that my historical survey was largely limited to the Western civilization and a study of the encyclopedic form for other regions of the World would certainly reveal interesting data. It was, however, in this case, adequate to the task of demonstrating the way in which *Wikipedia* and the model it represents is only a stage of our yearning for knowledge and a suitable way to preserve and share it.

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