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Book and Byte

History and Theory of Information Transmission

**COMMUNICATION MEDIA: A SEQUENCE OF
REVOLUTIONS AND EVOLUTIONS.**

Analysis of the Nature and Effects of Major Changes in the History of
Human Communication.

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Introduction

Human communication media have been evolving for now thousands of years. However, the earliest stages are not well known because only a few or even no vestiges survived. For that reason, stages like oral era, its apparition and development remain in the domain of speculations ranging from biblical origins with the first man, Adam, to the Big Bang theory. As for the remaining stages, that is the manuscript, the print and the digital eras, much more is known.

The aim of this short essay is to analyse these four historical stages of human communication, their nature and effects on society. To achieve this, the following methodology seems the most appropriate: first each stage will be studied separately with particular focus on the revolutionary and evolutionary character of their nature and effects.

I. ORAL ERA

Despite the numerous studies that were carried out on the origins and evolution of the spoken word, no scholar has so far dared put forward a strong and indisputable hypothesis. When was the first words uttered? Where was it and in what language? Unfortunately, this section will not even attempt to answer these questions which are still covered by mystery and promise to remain so for long. Instead of spending time on the different theories on the origins of speech, one will rather concentrate on its nature, namely spontaneity, volatility, immateriality, vulnerability; and its effects, which are social creativity, interactivity, tradition-bearing and cultivation of memory.

To begin with, one should first deal with the uncertainty that surrounds the spoken words with regards to its beginning and developments. All researcher dealing with this topic always begins with the same regret about the lack of information about this crucial period in human development. For instance, John Niles begins his *Homo Narrans* with :

We can only guess as to how far back into prehistory the practice of oral narrative extends¹.

The aim of this essay being not the origins of speech, one will directly go to the other aspects.

The main characteristic of the spoken word is that one needs no medium to perform speech. This makes this communication medium more spontaneous, more natural. This spontaneity has its disadvantages, notably the fact that little time is devoted to preparing and thinking about what one will talk about. This leads thus to many uncertainties and incorrect declarations.

¹ John D. Niles, Homo Narrans, Philadelphia: University of Pennsylvania Press, 1999, P.1.

In his attempt to understand what the situation was like before the writing era, Marshall McLuhan wrote:

*Until writing was invented, man lived in acoustic space: boundless, directionless, horizonless, in the dark of the mind, in the world of emotion, by primordial intuition, by terror.*²

Moreover, spoken word is volatile, not durable and untraceable. Once words are uttered by the author's mouth and caught by the listener's ear, they no longer exist. "Verba Volant", used to say Romans. It is thus quite impossible to know who said what and when. Son heard from father and father from grandfather, and the chain goes back to time immemorial. The consequence is that not only the information gets altered along the chain, but also it ends up by vanishing.

By the same token, this immaterial character of the spoken word led to speculations about the authorship of a number of oral works that were later put into writing. The most illustrative example, even though it occurred long after the apparition of writing, is *Iliad*. This mythical work was primarily an oral poem attributed to Homer, a legendary blind figure, circa 800 BC.

All the above mentioned characteristics of the spoken word make it considerably vulnerable. As the only information transition medium was the mouth-to-ear channel, the message was highly exposed to alteration. We all know that two people will tell differently the same story they heard from the same source. One can now imagine what happens to a story after two generations. There was no way to prevent that since the human memory has always been fallible.

Beside this fragility and corruptibility of the spoken word, one should mention that it had and still has some effects that other medium never had. For example, neither manuscript, nor print, nor digital media ever equalled the creativeness of storytelling, the only way of transmitting traditions and knowledge from generation to generation in the pre-writing era. Both the listeners and the storyteller contributed to the shape and the content of the story. The listeners would react 'live' to the spoken word by laughing, crying or showing their emotion otherwise.

This interactive character of the spoken word certainly contributed to social cohesion. Unlike today's book writing and reading habits with the author spending days on a desk in solitude and the readers spending solitary, long hours and days on a book to decipher what the author wrote, storytelling was not aimed at one individual listener, but to a group.

In addition, oral transmission of information favoured greatly the development and sharpness of memory, even though the fallibility of human memory is inherent to his nature. Socrates regretted the coming of writing saying that "the discovery of the alphabet will create forgetfulness in the learners' souls, because they will not use their memories"³

In short, speech was the first revolution in the history of human communication. Though still covered by mystery, there is no doubt that this way of communicating was far better and more efficient than the sign or sound language believed to have preceded it. Also, it should be noted that at a certain point, oral traditions could no longer meet the needs of society to store information more durably and more accurately. Writing appeared as a response to the

² Marshall McLuhan, *The Medium Is the Message*, Corte Madera: Ginko Press, 2001, p.48

³ Socrates quoted by McLuhan, idem. p. 113

volatility, vulnerability and corruptibility of the spoken word, but people never renounced oral communication, which still exist and plays a crucial role in modern society. With sound recorders, one can now say “verba manent”.

II. MANUSCRIPT

The apparition of writing some 4,000 years ago, is perceived as the greatest revolution in the history of human communication. Mesopotamia, the cradle of civilisation, was the birth place for writing. Confronted with the vulnerability, volatility, immateriality and corruptibility of orally transmitted information, Mesopotamians found a solution to materialise and archive their records. This section will analyse the nature of this revolutionary medium, notably its durability and materiality and its ‘manuality’ and instability. One will also focus on its effects, which range from easier access to information to the beginning of literature and sciences.

Though a fanatic of another era of human communication, McLuhan acknowledged the decisive role of writing in the history of humanity and considers it as the starting point of civilisation. He wrote:

The goose quill put an end to talk...It was the basic metaphor with which the cycle of civilization began, the step from the dark into the light of the mind. The hand that filled a parchment page built a city.⁴

Unlike the previous era of ‘orality’, people could put important information into writing to ‘immortalise’ it. Aware that “scripta manent”, they used cuneiform tablets, papyrus, parchment, bamboo, bronze or other means to keep their private and collective records. This was a giant step, because all we currently know about those prehistoric times is thanks to the introduction of writing.

Apart from their durable character, manuscripts also distinguished themselves from oral narratives by their materiality. They could be touched and consulted many times by many readers. Despite this materiality, it is nowadays difficult to trace the origins and authors of some old manuscripts, namely because at that time, the name of the author and other related information were not as important as they are today.

The other aspect of the manuscripts is indicated in the name itself: ‘manu’ and ‘script’, which means that the manuscript was an exclusive fruit of hand work. The ‘manuality’ of manuscript made the task of duplicating written texts more difficult and, above all, exposed it to risks of corruption. Like in the oral era, the text went through stages including the author, the scribe and copyists scattered here and there and whose work was not controlled by the author for the sake of authenticity.

While still discussing the issue of instability, it should be noted that not only the content of the manuscript but also the form could be altered by copyist, mostly unwillingly, because the aim of copying a text, I suppose, was to have a text as close to the original as possible. This means that one manuscript could exist in different formats and forms depending on who copied it. Lucien Fèbvre and Henri-Jean Martin indicate that this hindered scholars’ work as it was impossible to cite page references as we habitually do nowadays, because the leaf signature or the page on which the passage was to be found would vary with each manuscript⁵.

⁴ McLuhan, op cit., p.48.

⁵ Lucien Fèbvre and Henri-Jean Martin, The Coming of the Book, London: NLB, 1976, p. 87

To tackle the effects of manuscript, it is obvious that its apparition made the access to information easier. One could no longer rely on story tellers but to stored, archived written documents.

More importantly, the coming of manuscript is perceived as the beginning of literature and other sciences. Scholars could then consult and get inspiration from the works of their predecessors or contemporaries and make new discoveries or develop new theories. Fields like medicine (with Hippocrates in the 5th and 4th centuries BC), law (with Marcus Cicero in the 1st century BC), history (with Thucydides in the 5th century BC) and mathematics (with Pythagoras in the 6th and 5th century BC) just to name these, developed during the antiquity and the Middle Ages thanks to manuscripts.

Like in any other revolution, manuscript did not suppress the oral culture. On the contrary, both went hand in hand as Marcel Thomas demonstrates while analysing the 12th-13th century manuscript in Fèbvre and Martin's *The Coming of the Book*:

*The literature of the day was meant above all to be recited or read aloud to an audience, since the reading public was not large enough to warrant any other form of publication*⁶.

From the foregoing, we come to the conclusion that the manuscript revolution and the evolutions that followed it for four millennia, certainly laid down the foundation stone of modern civilisation. Yet, whatever evolutions that took place, manuscript could no longer keep its dominant place in the mid-15th century western societies, which were at that time modernising themselves. The need of having a faster and more efficient way of duplicating texts was becoming tremendous. Thus, another revolution –the print revolution- had become indispensable.

III. PRINT

It is logical that much more is known about the print revolution than about its two predecessors. Many documents dating back to the first days of the revolution survived and make the pride of many libraries and museums. Like the previous sections, this one too will first focus on the nature of the printed text including its larger accessibility; its authoritativeness; its fragility and then on its impacts – religious, social, political, economic and linguistic- on society.

With Gutenberg's invention of the printing press in the mid-15th century, books became available in great quantities and more readers could access them. The larger and easier accessibility is the first difference between the print era and its predecessor. However, this accessibility should not be exaggerated since book distribution channels developed gradually to expand to rural areas, especially with the coming of railways.

In addition, the printed text had more authority and suffered less corruption with correction and proofreading being essential steps in the book production. S.H. Steinberg considers this aspect as the most revolutionary side of the Gutenberg's invention. He writes:

What was epoch-making in Gutenberg's process was the possibility of editing and correcting a text which was then (at least in theory) identical in

⁶ Lucien Fèbvre, idem, p. 23

*every copy: in other words, mass production proceeded by critical proofreading*⁷.

The above, added to the introduction of the errata sheets conferred more authority and stability to written text. Even though piracy itself became a flourishing business, the authoritativeness of the printed book has never been in jeopardy.

Despite the new inventions, printed texts remained physically vulnerable, even more vulnerable than manuscripts which were mostly on parchment or vellum. The perishable paper could not resist water, dust and climatic conditions for long. The books owe their survival to the great quantities of each of them, which was not the case for manuscripts.

The printing revolution had tremendous repercussions on the entire society and even reshaped it. On the religious grounds, the printing press played a crucial role in the success of the Reformation movement. Martin Luther succeeded where others had failed before him because he had a redoubtable weapon, the printing press.

The printed book and the trade related to it also brought deep social changes by creating new professions and carriers and a new pattern of relationships among people. People started establishing their names as printers, publishers, correctors, translators, type founders, booksellers, and later as authors, which all conferred a special social status.

In addition, society completely changed its shape with the growing literacy rate favoured by printing. The printing press boosted elementary education by making cheap books available and adults beyond the schooling age massively engaged in self-teaching.

Aware that masses could be reached through printed texts, political men exploited the opportunities offered by printing in their own profit. Political pamphlets appeared to vehicle political ideas and nobles took advantage of the printing press to maintain their domination. This was encouraged by privileges and patronage.

The same medium was also used by political free thinkers and philosophers, especially humanist and enlightenment thinkers, to put forwards their opinions despite censorship. The examples of Erasmus, John Locke, Jean Jacques Rousseau and Montesquieu are illustrative. Their writings brought radical and far-reaching changes, on top of which the 1776 and 1789 revolutions in the United States and France respectively.

The printed text was not only a source of knowledge but also a source of wealth for those involved in the book trade. Book was and still is primarily a commercial commodity. At all stages, that is between the author and the printer/publisher, the printer/publisher and the bookseller, the bookseller and the customer, the seller-buyer relationship prevailed. Individuals like Louis Elzevier, Christopher Plantin, and Benjamin Franklin, just to name a few, made remarkable fortunes out of book trade.

It would be incomplete to end this section without mentioning the role played by print in the standardisation of vernaculars. In fact, since printing industry had become a business, it would have been counterproductive to offer the consumers the same product under different forms. It was at this time that dialects shaped themselves into national languages with unique spelling and grammar. Citing the case of Britain, Steinberg writes:

⁷ S.H. Steinberg, *Five Hundred Years of Printing*, London: The British Library and Oak Knoll Press, 1996, P. 6.

Up to the invention of printing, spelling was largely phonetic; that is to say, every scribe rendered the words on parchment or paper more or less as he heard them⁸.

To conclude this section, it should be noted that during the five hundred years of the printed text, humanity achieved its maturity, not to talk of its modernity. With ideas, knowledge and information laid down on paper and disseminated, sciences exponentially developed. With the printed book, civilisation moved from the foundation-stone stage to the building of the house itself. To continue with this metaphor, in the late 20th century, the house needed to have electricity and other modern installations. These came in the form of digital media, which one can qualify as the most recent fruit of the printing revolution and which are being inspired and vulgarised through printed books.

IV. DIGITAL MEDIA

With the coming and the exponential growing of the electronic media, many scholars including Sven Birkerts and Robert Coover predicted the demise of the book in a few years. Far from engaging in the debate on the death of the printed book, this section follows the methodological line of the previous ones and explores the nature and effects of digital media on contemporary society. One will first look into their mobility, global accessibility, lack of authoritativeness, dependence, malleability and fidelity; and then into the interactivity, collectivisation, the linguistic changes, the risks of negative uses and dependency they created.

The first distinctive character of digital media is their astonishing mobility. The world has become so small that information can be accessed from Australia while being written at the other end of the globe. The invention of the World Wide Web (www) by Tim Berners-Lee in 1991 opened a new era, which we can confidently qualify as a revolution. With the www, information comes simultaneously to many readers and not the other way round as it was and still is the case with the book. Birkerts emphasised this saying:

Information and contents do not simply move from one private space to another, but they travel along a network. Engagement is intrinsically public taking place within a circuit of larger connectedness⁹.

This mobility facilitates global access to all information posted on the web. This aspect has its advantages and its drawbacks, but these will be discussed later.

The easiness with which information is posted on the web has provoked a growing distrust of online sources. With the www becoming a business, it is impossible to check the authenticity of authorship and of the texts. The texts previously in print and which could be quoted as authoritative sources lose their authoritativeness once on the web because of the integrity of “copyists” which can not be ascertained. However, with the introduction of new security techniques, there are still good reasons to hope that online products will be more reliable. In this respect, Joseph Branin reassures us:

Both access to and control over information take on powerful new dimensions in the digital age. The development of firewalls, encryption

⁸ S.H. Steinberg, op cit. P. 58.

⁹ Sven Birkerts, *The Gutenberg Elegies*, New York: Fawcett Columbine, 1996, p. 122

techniques, authentication devices, and cybercash, has made the Internet a much more secure environment today for commerce and publishing¹⁰.

Dependence is another characteristic of digital media at their current incunabulum stage. One can not have access to them if he has no electricity, appropriate equipment such as a connected computer and of course the skills to handle the computer. Whereas the first and the last obstacles can easily be overcome, the expensiveness of apparatus remains a major hindrance.

Digital media have also introduced a revolutionary phenomenon of malleability of the text. Unlike printed book, digital texts can be changed, expanded, partially or totally deleted. Their format can be manipulated at will, which is impossible for the book. This permits the correction, updating and enrichment of digital texts, which would require another printed edition in the case of the printed book. With the computer, time is saved. A small spelling mistake does no longer mean the re-typing of the whole text but just a quick select-and-delete operation.

While explaining how computer users save time, one should also say that space is saved. Offices are no longer cluttered with bulky files; libraries are no longer managing printed catalogues, which all were cumbersome.

Also, fidelity in the reproduction of texts seems to have been attained with the digital media. Chris Biemesderfer affirms that a digitally recorded information “can be reproduced with full fidelity” because, unlike the printed text “digital data do not degrade over time”¹¹. This means that digital texts are not exposed to external factors such as bad weather, moisture, cockroaches and other risks. A digitised text remains the way it was last saved.

Concerning the effects of digital media, easy interactivity comes among the first benefits of the www. Scholars can now collaborate in their research without spending fortunes and wasting time travelling to meet. Newspapers have also taken their share with correspondents and freelancers all over the world allowing readers to know about events when they are still happening. They are also offering online versions of printed papers, which is a tremendous revolution.

More interestingly, with the spread of the www, we are witnessing a new linguistic phenomenon consisting in the coining of a new telegraphic and non-grammatical language. It is somehow a step backward to the era where spelling was slave to phonetics. For instance, in MSNs, SMSs and e-mail, one frequently encounters such writing as “I tok 2 u” to mean “I talk to you”; “t 4 u” to mean “tea for you”.

Digital media, especially the www, are all double-sided, with the positive impacts on the one hand and negative ones on the other. Among many, one will mention the expansion of piracy and risks of propagation of destructive and negative ideas. Nobody can ignore that nowadays, the www is facilitating on-line bomb-making courses, human trafficking, the propagation of racism, etc.

The last impact, and not the least, I would like to discuss, is the dependency that the www in particular and digital media in general have created among their users. Internet disconnection

¹⁰ Joseph Branin in *The Changing Nature of Collection Management in research Libraries*, posted on <http://www.arl.org/collect/changing.html> (accessed on 29 September 2005)

¹¹ William E. Kasdorf (ed.), *The Columbia Guide to Digital Publishing*, New York: Columbia university Press, 2003, p. 34.

paralyses administrations, schools, hospitals, airports, banks, briefly the entire society. Would there be a long-lasting technical problem, what would happen? IBM or Microsoft experts are better positioned to answer this question, but what is certain, as Birkerts admits, is that “we are already captive in our web”¹².

To end this section, I would like to briefly mention the pessimistic ideas about the future of the printed book during the digital era. Contrary to these apocalyptic prophecies, the printed book has taken advantage from digital media, whose presence imposes itself at any stage of book production. The computer has made the book production much easier. The whole chain from the author to the reader passing by the printer, the publisher and the bookseller, is strongly marked by the use of digital tools. This phenomenon can easily be called the rebirth, and not the death, of the printed book.

Conclusion

The successive communication media that human beings used have been evolving alongside other human developments. Any time, when the level of development required a new medium fitting the new needs, a new medium appeared with a number of innovative advantages and specific characters and impacts on their users.

It should however be understood that once a new medium appeared, the old one lost only its predominant position but never disappeared completely. That is how speech remains somehow the most used medium even in modern society. It has been proved that drama, poetry, fictitious novels, autobiographies and other genres which are still in vogue, are all direct descendents of the pre-historic oral narratives. Likewise, to use McKenzie’s words, television and video are a combination of the most complete summation of a tradition of oral, visual, and written and typographic communication¹³. It also goes without saying that in some sense manuscript survived the printing revolution and the printed book is managing to survive the digital revolution.

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¹² Sven Birkerts, op cit. p. 131

¹³ D.F. McKenzie, Bibliography and the Sociology of Texts, Cambridge: Cambridge University Press, 1999, p. 63