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The Question of Linear and Nonlinear Reading in the Digital Age

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For decades, there has been a debate in the European space concerning the relationship between technology and man[1]. Techniques and technical achievements are so connected with our naturalness and life that we do not even have to discuss legitimacy of this debate. Already in the 19th century, in 1877, a specific discipline was created under the influence of Ernst Knapp[2]. It speculates about the function of modern inventions, mainly tools and weapons, their impact on human thinking and behaviour, and calls them "organ projections", *Die Organprojection*. Subsequently, due to influence of the Frankfurt School, he talks about the "instrumentalization" of our thinking, which is also caused by technological achievements and reformatting the original structures of socio-economic relations.

The aim of this essay is to think about the relationship between the technique and man in common use over the last decades, based mostly on M. Heidegger's line of thinking. We will analyse the theory of M. McLuhan († 1980) and V. Flusser († 1991) dealing with various scenarios of this influence. Based on the relationship between humanity, modern technologies and new communication possibilities, we will try to demonstrate ways of new nonlinear reading in the context of these new challenges resulting from the already mentioned virtual stimuli.

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1 Among these first "epigones" of this theme, we must definitely mention Romano Guardini and his *Letters from Lake Como* (1927) or f. e. Dominik Pecka and his work *Man and Technique* (Praha: Vyšehrad, 1969).

2 Ernst Knapp, Grundlinien einer Philosophie der Technik (Düsseldorf: George Westermann, 1877, new edition: Felix Meiner Verlag, 2015).

We do not want to approach this topic by mapping the technological boom that we are experiencing nowadays. Our goal is to look at it from the epistemological and anthropological perspective, and to explore how it changes us and our thinking. Many of these motivational thoughts have been taken over by the Second Vatican Council when it discusses acute changes that occur in both individuals and societies[3]. Even before, M. Heidegger in his article *The Question Concerning Technology* claims that the technique in modern era is not only something that was agreed (bestellt), but also something that establishes (gestellt); we can say it is something that "creates", and it helps us to "uncover" the being in a more extensive way[4]. He talks about an example of a power plant in the middle of the river, which gives it a shape as well as a new face; it is a lively symbol of the fact that technique and "that what is technical" is becoming our intrinsic part, that it forms us and that it is not something extrinsic. Technique is not only a "medium", it is our intrinsic, deep-seated deep seated essence that we are no longer able to get out of. We can manipulate what we have or what is available. The technique is imprinted in us and cannot be "put aside", as we are not able to control it, nor can we "prescind" it, like our language cannot be prescinded (literally, as we think in it).

1. Desacralization of space by technical inventions

Similar to Heidegger, philosopher Marshall McLuhan has also created thesis concerning technical progress. He wrote several strategic books outlining the line of transformation of social and personal revival under the influence of the media (technological achievements).

In his book Under*standing Media,* he writes: "The impact of technology does not appear at the level of opinions or ideas, it mainly changes patterns of perception and changes them smoothly and without resistance"[5]. In the main line of thinking, he agrees with Heidegger. At this point, we need to clarify what he understands as "medium". McLuhan argues that the medium is always the result of the extension of human senses[6]. First, there was an expansion of the territory; later, man takes over this territory by discovering the media, which represent an extension of his senses.

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3 Second Vatican Council, *Pastoral Constitution on the Church in the Modern World, Gaudium et Spes*, nr 5, 6, 15, 18.

4 Cf. Martin Heidegger, *Die Frage nach der Technik* (Frankfurt am Main, Vittorio Klostermann, 2000) 11.

5 Marshall McLuhan, *Understanding Media* (McGraw Hill Book Company, 1995), 18.

6 Ibidem,19.

Once these extensions exist, man only perceives the world through them, he is no longer able to "prescind" them. On the other hand, the tool (medium) is not just a medium in the contemporary word meaning, or the tool we use and throw away, but this medium changes our way of thinking.

Probably the best-known McLuhan's assumption is that "every invention (medium) changes our thinking, transforms and shapes it". It is not about the content of the medium, the message or invention, it is their use that is crucial. Just as Heidegger said, the power plant does not become "relevant" for a common citizen, but nevertheless becomes essential for the flow of the river. And so, according to McLuhan, media and technological achievements are becoming a new, imperceptible background of our thinking and perception. The medium is a new technologically adapted sense that helps us to orientate ourselves in every new reality.

He further states: "All media are active metaphors in their power to translate experience into new forms"[7]. The best way we can imagine this is through a map. Since its invention, it has been brightening and making the space clearer, changing our thinking and orientation in space. It desacralizes everything that used to cause admiration and encourage myths. Making the space clearer creates a new privilege. The synapses are created in the brain, representing our spatial imagination and orientation. It is the same with the discovery of the clock and with the mapping of time; the clock gives the possibility of the movement quantification and the possibility of distance calculation. Time helps to measure, but it also measures. The benefit can therefore be expressed by the amount of time flow, and activities can be understood more effectively. Every second, from the moment the measurement starts, suddenly happens to be much more precious and more valuable and we can add that it seems to us it is even shorter. Every such medium "expands" our inadequate senses. Technology outside the human body becomes extension of these senses. The number of extensions grow as they replace the weakening human senses. But extensions also affect us. Some authors claim that even Nietzsche's work changes, considering his weakening eyesight and the beginning of the use of the writing ball. His late period is suddenly born, and Nietzsche is much more restrained, as in the *Dionysus´ Dithyramb*. So, after 1882, Nietzsche's thinking begins to change undeniably when it comes to literary genre, supposedly because of the use of the typewriter – the Hansen writing ball[8]. McLuhan also mentions the term

[7] McLuhan, *Understanding Media*, 57.

[8] This example is given by Nicholas Carr, *The Shallows. What the Internet is Doing with Our Brains* (W.W Norton & Company, 2010), 52-53.

Tetrad (four-fold pattern)[9] through which he tries to formulate the laws of the media in some quasi-scientific form. He has created four laws or effects of the media.

A. Enhancement of the medium, B. its obsolescence, C. its retrieval (in case its usage declines) and D. its defeat (reversal). Amplification of the medium explains which social aspects the medium strengthens and reinforces. While obsolescence talks about the media aspects preceding the specific medium that outshine it or make it to become obsolete. But they also help to determine what may be still interesting from the point of view of the obsolete media, what it tries to analyse through the law of retrieval. The reversal deals with causes of obsolescence and media transformation factors, when the medium is rejected and its potential is not used.

Every medium has its own importance and moves society further. Once its weaknesses are found, it is improved. But in case these weaknesses prevail, it becomes less interesting, becomes obsolete. I would like to explain it through the example of software which represents a possibility for improvement and constant upgrade. Once a better programming language and a better environment are found, or "broad spectrum" of better use of another environment with lower data requirements is shown, some other, mostly newer software is preferred. The same can be observed with the language. The last few years have shown that the world's languages are mainly those that have undergone many revolutions, making it easier for both communication and learning, in contrast to languages that have undergone only a small number of revolutions and have been condemned to their archiving (dead languages). The evolution of man thus develops through the evolution of his senses that are improving and resulting in his own inventions.

McLuhan also claims the following: "For the message of any medium or technology is the change of scale or pace or pattern that it introduces into human affairs..."[10] The medium is therefore not important in terms of the content it brings (message, information as such) but in terms of its monitoring or use (resulting in using new brain centres that have not been used before). At one point, technological achievements change our behaviour. It is no longer important just to "have clothing" in order to survive winter (clothing as the extension of the skin), but the etiquette is born as a standard of dressing. It is no longer important to hide from the rain, the invention based on thermo mechanism, but to live in a nice and clean way. The bicycle or the car create the extension of human leg, but we choose the better bike,

[9] Cf. Marshall McLuhan, *Laws of Media*. *The New Science* (Toronto: University of Toronto Press, 1992), 129.

[10] McLuhan, *Understanding Media*, 8.

the better car. Computer as the extension of the central nervous system must excel when it comes to speed.[11]

2. Mcluhan´s and Flusser´s Phases of Development of the Society

2.1. The onset of the image as a sign in today's reading

Marshall McLuhan together with Vilém Flusser distinguish three cultural stages. McLuhan does it based on a way of communication in society that copies the way of perception of reality, and Flusser based on his perception of the model of cultural development of history.

In the first ancient stage, according to Flusser in the age of image, mapping the history thousands of years ago took place, and this stage was dominated by speech. It is, therefore, a prehistoric period called oral tradition. Even though people were using clay tablets, they were mostly writing lines that helped them to count and weigh. They are the first preserved media which were dominating until the time of the first philosophical natural tractates (6th century BC). The symbols of this oral era are picture, memory, and ears. For Flusser, these were the times of magical imagination[12]. Man was captivated by nature, the world around him, and this led him to create deeper unity with himself. The immediate vicinity of the subject did not cause doubtful questions, it was factual and convincing. Man was practically "sensually astonished by nature" (McLuhan). At that particular time, people used "direct" communication and lived in a deeper unity. So man was not distracted regarding „understanding oneself" and „understanding others".

2.2.Transformation of the image into writing – a period of greater abstraction

Another period follows, during which the real "medium", the technical invention, approaches people. It is a period when the "world of autonomous discourse" prevailed (Ong). At that time, the speech changed to writing and thus lost the quality it possessed in the period of oral-acoustic age. The centre of attention was sight, not the sense of hearing. From an evolutionary point of view, man has begun to behave anomalously for the first time, thanks to writing and written books and later because of book printing. Therefore, he was suddenly able to devote himself to one single activity (which was not possible before) at once and to concentrate only on the text, more precisely, on reading the text. At the centre of attention

[11] My strong paraphrase of the quote from ibidem, 99n.

[12] Vilém Flusser, *Za filosofií fotografie* (Praha: Hynek, 1994)*,* 10.

was the book, which isolated man and separated him from the community, absorbed him. The individual was therefore able to think critically and lead a discussion. Symbol of this time is the extension (of the medium) to other territories and the cultural subjugation of other continents. The voice lived through the written word. The written word has preserved in order to bring us back to the immediacy of the image (Flusser). The characteristic of this period is the linearity of reading. This means that the reading started on the first and ended on the last page, the logical thread in the tractates was tracked and corrected. The communication among people began mainly by being alone with their thoughts and by isolated writing, which consequently brought the answer. The onset of writing allowed greater abstraction, creation of linguistics, constituents of the sentence, categories (metaphysics), and the mutual opening of closed societies (based on hearing and speech). The discovery of a new world is therefore a distinctive sign of this time. The dilemma of textual versus oral culture continued through the unsolved Plato's dilemma – whether it is writing or memory that is more important[13]. With linear reading, intertextual culture and critical debate are spreading. The number of comments increases and consequently, they are read more often; the whole discourse is abstract and logically consistent.

2.3.Identification of possible problems with reading in the digital boom era

According to McLuhan, the repetitive onset of the "image" during the last decades of the 20th century symbolizes return to the image (which is called technological image in this case). According to Vilém Flusser, however, there is a difference between the initial image of the bison in the caves and today's technological image, the photography. For the digital era, the typical medium is the "photography". Even though the photography is a space picture of something real, today, as he would say, photography is no longer just a „photography of reality", it also helps with communication (Facebook statuses). Instead of memorising and mnemonic training, thanks to photography, the "capture"[14] era rises – everything is captured – by camera, video camera or recorded and archived on the web. The previously decent number of photos in the photo album has changed into the endless number of digital images, which, like the word, devaluate by their multiplication. In addition to this, writing becomes an image as well when we consider e-books and various electronic formats (mobi, epub, fb2, djvu, odt and others) that appeared along as a result of scanning of books and their easier propagation. Repeatedly, there is a return of "tribal" and herd

[13] Mainly Plato in 437c, Menon 85c-86d and Phaedrus 274c5-275b2.

[14] Let us say, they speak of a "culture of capture".

behaviour (chat, Twitter, Facebook, Whatsapp, McLuhan spoke of the "global village"). However, this is not an oral tradition in the true sense of the word based on communication, but a seemingly communicative culture that carries greater signs of isolation (and loneliness?). Acceleration of information flow is more important than sharing itself. Man is drawn into the whole world by media, the existence is not limited by space and time. He is everywhere and nowhere – his hot space extension possibilities, we could say, have cooled off, and so the reading has become a cold medium[15]. It has pulled and separated sight and hearing from one another; the medium of photography in this era is probably the most complex "extension", and there is a threat in it that the person will become dematerialized, disembodied and solipsistically by himself (let us just mention today's cognitive experiments with consciousness and "brain in vat", artificial intelligence as such bears signs of such monism). This is probably how McLuhan might have reasoned if he had lived today.

Besides, he and Flusser claimed that it doesn't matter which new technology or invention we are talking about, whether it is writing, alphabet (we can add computer or software), our senses and our brain do not remain unchanged. Today, most of our experiences with the world we as people acquire not from our real life, but through images – media, images of real objects, substitute symbols, more precisely "labels". The advertisement promises many such symbols, which we can also find in political speeches. The semiotics of these manifestations clearly maps the most sensitive and perceptive points of the human psyche. Reality today is being replaced by simulations, and so it stops being real today and the simulated world is gaining even stronger emphasis than it might have seemed a few years ago. Even Foucault used to talk about today's onset of simulacrum[16]. Simulacrum is a replacement of reality[17], representing real relationships and replacing them with virtual ones. Hypertext is a non-materialized version of the text where the identity of the text is indicated by its consistency and logical sequence, but what causes a different way of perception also carries

[15] McLuhan distinguishes hot and cold media. The hot media are those activating multiple senses – on the other hand, they make the culture weaker in communication. While the second culture that is based on abstraction was closely related to a cold medium – a book, was an extremely hot culture based on discussion. On the contrary, electronic culture is a culture using not only one sense – eyes, but greater visibility, and thus creates cold communication.

[16] Michel Foucault, *Toto nie je fajka* (Bratislava: Kalligram, 2010), 53.

[17] Baudrillard adds the following: "The simulacrum is never what hides the truth – it is truth that hides the fact that there is none", c.f. Jean Baudrillard, *Simulacra And Simulation* (Michigan: University Press 1995), 4.

a different way of reading. The "scanned book" becomes text again thanks to the OCR technology, but such text without material substratum enables different ways or modality of reading to take place.

3. New Forms of Nonlinear Reading and their multimodality

In the sense of digital media, the onset of digital image has perfectly changed the ways of reading of today's generation. Due to the great boom of electronic literature, the abstract thinking capacities of an individual have been replaced by a faster form of reading, ignoring fine semantic shades[18]. Reading is increasingly more about stimuli and speed, rather than attention. Reading is thus accompanied by other factor, the factor of performance that makes faster information accessible. Linear reading methods from the first to the last page were replaced by fragmentary, unconcentrated reading dealing more with the short-term than long-term memory.

While linear reading had the characteristics of a solid chronology; the reading had a clear start and a direction which was the end of the text and the method of analysis was closely linked to this linearity. In the digital era, reading is fragmentary, optional, one reads from the end to the beginning, it is faster, because it is the speed that stimulates the ability of reactivity to the environment, and this is what the reading method is adapted to. Reading is not dependent on the method as much, it is "more enjoyable" and asks for richer imaginativeness, deeper sensual "satisfaction" of reading.

3.1. Multimodality and multitasking of the digital era

Holistic multimodality of reading takes place on the scene; the times of linear reading are gone. Our generation reads the text from different sides, communicates meaning through "appealing" and impressive elements through which, compared to book, the hypertext in the environment of Internet domains can "excel" more. The text architecture can be both vertically and horizontally structured and can be also more inspiring. In addition to illustrations, it can offer various 3D visualizations and audio podcasts which cannot be used with printed text. In this case, the reader is somehow "pampered". Returning to the printed text may seem to him even more unamusing and emptier. However, the problem with multimodal texts is that the content of individual text elements of a non-alphabetical character is not always consistent with the content of the alphabetical text, or that content of the written text does not bear such importance.

[18] For this reason, Vilém Flusser named one of his books *The Praise of Superficiality* (Düsseldorf: Bollmann, 1993). Whatever is shallow is "above the surface"; he deals with two meanings.

This multimodality absolutely includes the thesis that Roland Barthes spoke about in the work Death of the Author[19]; an author who is irrelevant to reading and the work itself, because it takes its own direction and the history of new interpretations. Even the text itself is not that important and in the reader's centre of interest is his "creative imagination", so we can talk with Flusser about the death of linear reading under this influence.

Nowadays, we are witnessing how digital codes transcend linear writing. As in the past, the alphabet replaced pictograms and pictograms replaced ideograms or hieroglyphics. Every such change transforms thinking, and in this case, "we must move from process thinking to structural, system-analytical and cybernetic thinking"[20]. Flusser argues that such a transition from the alphabet and the alphabetical text to new codes will be complicated for older generations, but the youth will learn it relatively quickly. We can add that based on researches, it is now relatively easy to demonstrate how unpopular this old, linear way of learning, which requires updating, is with the youth. And as they do not like the old, linear way of reading, and they are rather close to the virtual world, it is an important symptom that reveals the need for a new reflection not only on the educational, pedagogical but also on the pastoral and philosophical level.

4. Conclusion

Manfred Spitzer, a psychiatrist, in the book *Digital Dementia*, states that young people today, despite better multitasking and more digital skills that are usually accompanied by greater creativity and fantasy, show "outwardly" better information handling. At the same time, however, he refutes this view. "Gaining real knowledge is not about surfing or skimming, but active confrontation, mental elaboration of all aspects of the issue, analysis and a new synthesis of contents. This is something quite different from transferring bits and bytes from one storage medium to another..."[21] Nonlinear and new way of reading and learning, mediated by software and digital world, highlights the importance of attitude transformation and understand-

[19] Roland Barthes, "Smrt autora", *Aluze*, nr 3 (2006): 77: "the birth of the reader must be at the cost of the death of the author..."

[20] Vilém Flusser, *Písmo* (Bratislava: Ivan Štefánik, 2007), 150.

[21] Manfred Spitzer, *Digitale Demenz* (Droemer HC, 2012), 193: „Die Aneignung von wirklichem Wissen erfolgt weder mittels Surfen oder Skimmen, sondern durch die aktive Auseinandersetzung, das geistige Hin-und-her-Wälzen und Immer-wieder-Durchkneten, Infragestellen, Analysieren und Neusynthetisieren von Inhalten. Das ist etwas ganz anderes als das Übertragen von Bits und Bytes von einem Speichermedium zum anderen".

ing of an individual. Concerning the youth, modalities of reading show and confirm new and creative skills and work with information. Dynamic time that includes easy data and electronic media access, on the other hand, brings along questions concerning deeper contexts. An individual has to confront himself more with the increasing stress resulting from the information flow. The world is characterized by fluidity (Bauman), which does not change everything around us, but also within us. This historical dimension of individual change has to be taken into account at different levels.

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Zagadnienie linearnego i nielinearnego czytania w erze cyfryzacji

Streszczenie

Współczesne czasy charakteryzują się rozwojem cyfryzacji, gdzie najbardziej uderzające dokonania związane są z rozrywką. Bardziej niż kiedykolwiek w przeszłości, łączą one w jedno różne formy rozrywki: telewizję, internet, radio i fotografię. Umożliwia to człowiekowi zdobycie informacji z niemal każdego miejsca na świecie. Dokonania te wpływają na zmianę percepcji oraz kognitywnego procesu w człowieku. Technologia przynosi nowy kod i nowy język, który tłumaczy i zarazem szyfruje wszystko. Ponadto dokonania te przynoszą nowy sposób czytania, który powoli zastępuje stary. Klasyczne czytanie linearne nie jest już interesujące, a nacisk położony jest na krótkie teksty i bardziej szczegółowe informacje. Człowiek może ograniczyć czas koncentracji, a dostępność większej ilości informacji nie przyczynia się do zwiększenia krytycznej oceny.

Słowa kluczowe: era cyfryzacji, czytanie linearne, czytanie nielinearne, multimodalność interpretacji

The Question of Linear and Nonlinear Reading in the Digital Age

Summary

The current time overflows with many digital achievements. The most striking ones are related to entertainment. More than ever, these inventions unite the previously isolated ways of entertainment – television, internet, radio, and photography into one. This allows us to access data from anywhere, which can impact and change perception and cognitive processes of man. The technology brings a new code – a new language that translates and encrypts everything. In addition, it has also brought a new way of reading which slowly replaces the old one. Classical linear reading is no longer interesting and emphasis is placed on shorter texts and more detailed information. Man can therefore concentrate for a shorter period of time, and the availability of large amount of information does not contribute to his critical orientation.

Keywords: Digital Era, Linear Reading , Nonlinear Reading, Multimodality of Interpretation