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Media Cognitive Determinants

Introduction

Getting to know the world is a complicated process. The process of stimulating the senses in order to understand reality is long and complex. Our brain preliminarily selects stimuli and processes them in accordance to its biological conditioning. Additionally, there is the influence of culture which we acquire and interpret via language and its linguistic conditioning. There is also a theory that contact with media has got its consequences. Modern man is deeply intertwined with the media, he is made to constantly interact with broadcasts transmitted via different media means. The existence process within this space as well as switching from one medium to another is extremely complicated. Moreover, we are lacking the process of shaping media competences and, hence, the recipient is not well prepared. He is shaped by chaotic stimuli coming from the television, radio and the Internet. This leads to impairing human cognitive competences.

The goal of this article is to present different theories on media cognitive errors and to propose several theoretical strategies on dealing with them. First, presented will be three examples of simplifications and errors made by Web users. The choice of medium is deliberate since it is computer media that possess certain characteristics which allow us to clearly see the issue presented here. Following will be a presentation of several philosophic and scientific strategies useful in illustrating this issue. This presentation, supported by elements of theory by Cassirer and Gadamer, provides a solid fundamental view on the cognitive apparatus. Additionally, it is worth to look into biologic, social and media theories and achievements in this area. They support our cognitive apparatus in the area of memetics, heuristics and narrative structures. It will be shown that using these means enables us to create a theoretical model which will aid in the reflections on media.

This article aims to present a research strategy which, according to the author, could be useful. In the modern world, where the surrounding reality as we know it is predominantly portrayed by the media, particularly valuable is the ability to be well acquainted with the media world in order to avoid cognitive errors.

Three errors

Order of selection results

The ability to correctly select and evaluate the content presented by the media is a fundamental competence. It is a difficult task as it is easy to make mistakes and be influenced by content suggested by media. There are three types of basic mistakes people make.

The first regards the use of one of the most popular Internet search engines, Google (<http://www.google.com/>). Everyday, millions of internauts use Google when they are searching for information. They type in a search word or phrase and obtain a list of links on the given subject. Most often they select one of the first three choices that pop up, rarely do they go beyond the first page of selection results as they are under the impression that the top of the list includes the best and most reliable materials.

Meanwhile, even basic knowledge of the rules of the *PageRank* algorithm which determines the order of selection results tells us that it is not the most reliable mechanism as the most credible websites are not on top of the list. The top results are generally determined by website popularity as well as different technical conditions (such as key word in the URL address, frequency of key words, number of related links, etc.) and not its factual content. On the cognitive level, we can, therefore, say that the average user makes a mistake regarding this type of information source as a

valuable one, based on insufficient knowledge or even for erroneous reasons.

Partisan advertising strategies

Another frequently made cognitive error is used by the so called partisan advertising strategies such as virus marketing, product placement or surreptitious advertising. A good example of this is an infamous case from 2006. It took place on the blog *All I want for Xmas is a PSP*¹. At first glance, the website looked as if it was created by two teenagers. One of them had a *PlayStation Portable* and the other dreamt of getting one for Christmas. Together they looked for subtle ways of hinting it to their parents. On their blog, they presented specially made post cards, T-shirts, songs, etc. and it all seemed real, like many other similar blogs on the Web. Later, it turned out that it was a planned marketing trick, paid for by Sony and carried out by Zipatoni. When the cat was out of the bag, all involved parties came into a lot of criticism.

The advertising agency's goal was to create a website with an advertisement in such a way that people looking at it wouldn't know they were looking at an advert. It is true that a lot of people thought they were looking at a real blog, created by ordinary people like them. Today, still, many see blogs as a source of information independent of being manipulated by various media. In the discussed case, however, it turned out that recipients were wiser than the campaign creators and refused to be manipulated. We do need to remember, however, that it is not always the case. Hence, advertising strategies of this type sell well on the Web. If the recipient does not recognize the advertising, he is not able to defend himself against it.

Wikipedia case

The third error can be illustrated looking at the way people view Wikipedia (<http://pl.wikipedia.org/>). The average Web user does not question the credibility of information included there. This is because traditionally we do not question sources such as encyclopaedias and, hence, we give this broadcast value disproportionate to its real.² Anyone who is familiar with the way Wikipedia is created, is aware of the fact that although it is an excellent source of knowledge, it is far from credible and cannot be compared to the quality offered by renowned publishing houses.

In case of Wikipedia, users treat it as a type of encyclopaedia which is a valued source of information. This notion is entirely true when it comes to traditionally printed texts where prestigious publishing houses guarantee solidly prepared and documented information. This is not the case with Wikipedia. Here, the verification and selection process is completely different. As David Weinberger points out, if we compare Wikipedia and *Encyclopaedia Britannica* similarities are only superficial and, therefore, these two sources cannot be used in a comparable way. Classic encyclopaedias enable us to acquire knowledge passively while Wikipedia requires a more active approach, a conscious assessment of content based on the data source that accompanies each entry³. Meanwhile, many users are not aware of this and make the mistake of not questioning content and treating it as entirely credible.

Structure of cognitive apparatus

Philosophic roots

The examples discussed above are not the only types of errors that can be made by people when they use various media. They are only examples used to illustrate the subject of this article – that media greatly influence our cognitive processes and often in a negative way. Lack of knowledge of the technical, social and gender rules of media functioning impairs our cognitive mechanisms. The root of the problem can better be observed in view of philosophical tradition.

1 The original website no longer exists but its copy can be found at www.ukresistance.co.uk/sonylieblog/default.aspx.htm.

2 J. Kurowicki, *Dlaczego ozdoba zdobi?*, Warszawa 2006, p. 65–69.

3 D. Weinberger, *Everything is Miscellaneous: The Power of the New Digital Disorder*, New York 2007, p. 142–143.

The theory of cognition is a classic one in the history of Western philosophy. Since Ancient times, people have been asking questions about sources of knowledge, the difference between knowledge and belief as well as possibilities of searching for the truth. They have also recognized human cognitive deficiencies. Among Ancient Greek philosophers there are those who have questioned the credibility of our minds and senses. There were also those who have doubted the theory of cognition itself. Regardless the historical analysis, we can state that Western philosophy acknowledges the concept that the world is not seen in an obvious, clear and direct way. All knowledge that reaches us has previously been filtered by our cognitive apparatus. Our cognition is limited by our very own cognitive mechanisms within ourselves.

The above mentioned theory, an intriguing picture of our cognitive limitations so characteristic to humans, can be found in the works by Francis Bacon, a philosopher from the XVI century. He wrote about four idols which have “possessed human cognition”; four types of interferences which obstruct us from seeing the truth⁴. They are cave, tribe, agora and theatre idols or, in other words, biological limitations, stereotypes in the socialisation process, language weaknesses and non-substantial conditions for acceptance of theories and opinions. Each of these, in its own way, obstructs us from acquiring real knowledge. The cognitive interference typology presented by Bacon is particularly inspiring. It is insightful as it recognizes the different types of cognitive errors which, in modern day, can have either biologic or cultural character.

The next stage in the history of cognitive theory was Immanuel Kant’s analysis. Although he does not use the phrase ‘cognitive apparatus’, it is in his works where we can find the theory that it is us ourselves who shape what we see and the structures of our cognitive mind shape the way we see reality. Kant describes our limitations and uses phrases such as obvious forms or pure intellect categories, which in the context of modern discoveries may seem somewhat archaic. Nevertheless, his findings can definitely be considered fundamental to further research on the subject.

Kant’s theories were further developed by Ernst Cassirer. In his philosophy on symbolic forms he claimed that our reactions to stimuli from the surrounding world are symbolically conditioned. The difference between us and other animals is not the ability to think rationally or the use of tools but the ability to process symbols. In our functioning, between the stimulus and reaction there is a symbols filter⁵. Receptor stimuli are translated into symbols, interpreted and then reacted upon. In our heads, within the ‘symbolic sphere’ there are cognitive filters which are not biological in character, are not inborn but are learned through culture. Symbolic forms are complex ideas, thought and interpretation models which are part of our cognitive apparatus. That is why we are not dealing with a situation in which first we see, then interpret and finally react. The cognitive process is symbolically complex. Forms are within language in which we think, in myths and metaphors through which we see. This is how we construct our private reality. Examples of more complex symbolic filters are: science, religion, politics and various ideologies. They impose certain models and limitations on our cognition.

Cassirer laid the foundations for the modern model of the cognitive apparatus concept; he included culture in this process, providing us with tools to understand the determinants of our cognition. These philosophies can be supported by another XX century theory – hermeneutics. We can mention, at this point, cognition analysis by Hans George Gadamer. The interpretation process does not have a starting point from which the clear, unprejudiced mind would see the source and understand it. From the very beginning, prior knowledge, encompassed in language, tradition and teachings of others, plays a dominant, manipulative role⁶. This entire collection of knowledge conditions our interpretation process. Hermeneutic theory states that the way we understand anything is as a result of our entire human experience.

Aside from the discussed above philosophers, there are also those who have shaped the

4 F. Bacon, *Novum organum*, Warszawa 1955, p. 66–69.

5 E. Cassirer, *Esej o czlowieku. Wstep do filozofii kultury*, Warszawa 1998, p. 68–70.

6 H.G. Gadamer, *Prawda i metoda*, Kraków 1993.

theory of cognitive apparatus. In order to obtain a fuller picture, we should also take into account analytical philosophy, semiotics, semiology and post-modern theories. However, for the purposes of this article a general review of philosophic thought on the issue does suffice. Let's now turn to other sciences.

Memetic model

On the grounds of neo-evolutionism and socio-biology created was an interesting, naturalistic cognitive model. Now culture was understood with the assumption that evolution is not a mechanism that occurs only in the biological world. The same can be used in the analysis of culture processes.

In order to talk about evolution based on natural selection, several conditions must be met. There must be a unit that reproduces itself, a mutation mechanism, a mechanism for the transmission of mutations to subsequent copies of replicant (hereditariness), and an environment where the replication takes place and which provides chances for survival and subsequent replication. The most well known replicant is the gene. It is the most well known but not the only one. Richard Dawkins in his theories on culture introduced the term meme⁷. Meme is similar to a gene as it is the basic unit of culture transmission which includes more complex structures (memeplexes) such as science, religion or ideologies. If we assume the existence of such a replicant, it turns out that the world of culture meets all conditions for evolution. There exists the replication mechanism, individual memes and entire memeplexes can be transferred both vertically (between generations) and horizontally. We can, therefore, state that culture can be inherited. Replication mechanisms guarantee variety due to the fact that communication mechanisms and human memory are imperfect and that the human mind is extremely creative. There are many factors that determine whether an idea or concept becomes popular or is quickly forgotten. Culture definitely possesses basic evolution mechanisms.

Constructing a culture theory analogously to evolutionism allows us to also transfer other characteristic to Darwinism factors such as a meme pool, selection mechanisms and viruses. There are many other similarities, however, we do need to remember that there is still a big difference between a gene and a meme. Both are replicants transmitting certain information. What is more, both can be affected by similar evolution mechanisms, however, their effects will differ considerably.

What is man in this concept? Susan Blackmore compared him to a meme machine⁸. He is a carrier of both genes and memes. The replication process is somewhat different, however, key mechanisms are similar and make us something of a vehicle for 'selfish' replicants. The way we are built, our consciousness, thoughts and actions are a combination of processes that take place according to the rules of evolution. According to Blackmore, our individual ego is a great memeplex. She cites Daniel Dennett saying that, "consciousness is a great meme complex"⁹.

This hypothesis, however, is somewhat controversial. Kate Distin states that the Dennett-Blackmore theory does not differentiate the replicant from replication effects (there occurs a co-dependence similar to that between a genotype and phenotype). She declares that we should see the mind as an organ genetically modified but shaped by the environment. The environment that influences us is what surrounds us physically and culturally, and that is where memes come into play, they are cultural replicants¹⁰. Jack Balkin states that memes are people's cultural software¹¹. If we take this metaphor further, we can say that our cognitive mechanisms are shaped both by biological factors (genetic hardware) and cultural (memetic software).

7 R. Dawkins, *Samolubny gen*, Warszawa 1996, p. 261–266.

8 P. Blackmore, *Maszyna memowa*, Poznań 2002.

9 D.C. Dennett, *Consciousness Explained*, London 1991, p. 210.

10 K. Distin, *The Selfish Meme. A Critical Reassessment*, New York 2005, p. 83–84.

11 J.M. Balkin, *Cultural Software: A Theory of Ideology*, New Haven–London 1998.

Kant's symbolic forms can be compared to Kate Distin's representation systems¹². If memes are culture genes, then representation systems can be equivalent to DNA. Their main goal is to delineate mutation boundaries. Just like genetic mutation takes place as a result of change in the DNA code, a cultural mutation can take place only within the boundaries of a representation system. This regards content but not the system itself. Mutation not in accordance to system rules will be meaningless and, therefore, impossible to replicate. For example, an absurd sentence, constructed not according to grammar rules or using non-existent vocabulary is more difficult to remember and correctly repeat.

In contrast of biological evolution, based on one, universal DNA structure, cultural evolution is comprised of countless representation systems. What differentiates man from other animals is his extraordinary ability to assimilate new systems. What is more, we possess the skills to compare them and choose the best one under the circumstances; to criticise and to develop a representation metasystem. A good example of such a system is language¹³ but there are other memplexes, more complex, such as religion or science. We are conscious of the differences between systems, we know that any information can be passed on in different ways, based on different systems. It is this skill that puts us at the top of Dennett's "Tower of Generate and Test"¹⁴. Those who at the top of the tower, in contrast to more primitive 'inhabitants' of lower levels, are capable of using tools and build them into their system of generation and testing. They are skilful in using tools such as language and use it to create complex structures such as science¹⁵. If we use Distin's terminology, we can say that the top of the tower is for those who are capable of metaprogramming or using meta representation systems.

The proposed above model of man enables us to reformulate the issue of cognitive apparatus and its biological/cultural conditioning. Our cognitive apparatus is genetically conditioned which means it possesses certain limitations. The way our minds are constructed and how the brain works, all that shapes the way in which we acquire and process information. The way we are is a result of biological evolution and natural selection, perhaps for the needs of Darwin's 'selfish' genes. Our cognitive apparatus is researched by biologists, cognitive sciences experts and evolution psychologists but that is not enough since our cognitive mind includes a memetic component which, as will be shown in the latter part of the text, has got a media character in part.

Heuristics theory

Another research strategy to be discussed comes from the social sciences. It was initiated by Amos Tversky and Daniel Kahneman in the article *Judgement under Uncertainty: Heuristics and Biases*¹⁶. In their works they showed that if man lacks information or time necessary to make a rational decision, he will use simplified patterns of thought and conclusion. Sometimes that is good enough, other times it leads to *cognitive bias*. Since then, there has been many heuristics theories or cognitive strategies used when one needs to act in a situation of uncertainty.

It should be noted that actions which we take as a result of these cognitive strategies are not necessarily wrong. Gerd Gigerenzer proves that these types of strategies are useful and, at times, absolutely necessary. They are so much a part of human cognitive structure that the mantra "I think, therefore, I am" could even be replaced by "I make mistakes, therefore, I am"¹⁷. Joachim I. Krueger and David C. Funder are of the same opinion. They add that focusing on cognitive bias factor in heuristics leads us to not notice imperative functions of our cognitive apparatus¹⁸. In other words,

12 K. Distin, *The Selfish Meme...*, p. 147 and on.

13 Ibidem, p. 166–167.

14 D.C. Dennett, *Darwin's Dangerous Idea: Evolution and the Meanings of Life*, London 1996, p. 373–380.

15 Ibidem, p. 380.

16 A. Tversky, D. Kahneman, *Judgment under Uncertainty: Heuristics and Biases*, "Science" 1974, vol. 185, nr 4157, p. 1124–1130.

17 G. Gigerenzer, *I Think, Therefore I Err*, "Social Research" 2005, nr 185, p. 19–20.

18 J.I. Krueger, D.C. Funder, *Towards a Balanced Social Psychology: Causes, Consequences, and Cures for the Problem-Seeking Approach to Social Behavior and Cognition*, "Behavioral and Brain Sciences" 2004, nr 27, p. 313–

such an attitude is itself a cognitive error. Therefore, instead of focusing on negative phrases such as error or bias, it is better to talk about cognitive attitudes and determinants.

Heuristics theory interweaves with the evolution model. Evolution psychology provides many arguments for the adaptive character of heuristics¹⁹. There have even been successful attempts to use this concept in analysis on ideological and cultural cognitive determinants²⁰. This article will show that this perspective can also be useful in media research.

So far, presented here were key philosophic and scientific thoughts necessary in the discussion on media cognitive determinants. The next stage will be to show where media can be placed within the cognitive model.

Media and the cognitive apparatus

Open to synergy with media

Media influence on our cognitive processes was discovered early on. It is not surprising, if we take into account that language, especially symbolic, is the first medium with which we come into contact. Taking that into consideration, we can say that all our knowledge is influenced by the oldest medium there is, language and writing. Ancient philosophers were aware of this and we can find a criticism of this medium's cognitive consequences in Plato's works. In a dialogue, *Fajdros*, through Socrates' words presents some classic accusations. Writing will not save memory, since when we write something down, we cease to remember it. This seeming wisdom will replace real one²¹. Thoughts written down cannot defend themselves from being misunderstood and may reach those they shouldn't²². This is how authors, instead of valuing words, began to play with them²³. Plato's theory is that the new medium will change the world in a way that cannot be predicted or controlled. The medium is capable of changing how we acquire, process and create knowledge. Plato saw the influence of this medium on our cognitive apparatus and, what is more, he was aware of its multilevel effects.

In modern day, the most spectacular way of presenting a theory of media as an extension of man was proposed by Marshall McLuhan²⁴. Later, similar theories were proposed by other researchers. Walter Ong devoted much time to an analysis of the influence of speech and writing (including print) on the way we see the world and construct knowledge. Derrick de Kerckhove and Paul Levinson did the same regarding the influence of electronic media²⁵. All of these researchers attempted to capture the phenomenon of the influence of outside, technical devices on human personality. We can even mention at this point the theory of building technological (including media) tools into our cognitive apparatus. In this context we can mention Henry van Lier's concept of synergy between man and technology.

Technological progress constantly changes the relations between man and machine. Lewis Mumford wrote about three technological eras – eotechnical, paleotechnical and neotechnical²⁶. Van Lier focused on different types of machines – static, dynamic, and dialectic²⁷. It is the third type that we are most interested in. What is characteristic of dialectic machines is their inclination to create

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19 Cf. M.G. Haselton, D. Nettle, P.W. Andrews, *The Evolution of Cognitive Bias*, [in:] *Handbook of Evolutionary Psychology*, ed. David Buss, New York 2005, p. 724–746.

20 Cf. J.M. Balkin, *Cultural Software...*, p. 173–215.

21 Plato, *Fajdros*, [in:] tegoż, *Dialogi*, vol. 2, Kęty 1999, p. 275.

22 Ibidem, p. 275.

23 Plato, *List VII*, [in:], *Listy*, Warszawa 1987, p. 341–342.

24 M. McLuhan, *Zrozumieć media. Przedłużenie człowieka*, Warszawa 2004.

25 Cf. W. Ong, *Oralność i piśmienność*, Lublin 1992; D. de Kerckhove, *Powłoka kultury. Odkrywanie elektronicznej rzeczywistości*, Warszawa 1996; P. Levinson, *Miękkie ostrze. Naturalna historia i przyszłość rewolucji informacyjnej*, Warszawa 1999.

26 L. Mumford, *Technika a cywilizacja. Historia rozwoju maszyny i jej wpływ na cywilizację*, Warszawa 1965.

27 H. van Lier, *Nowy wiek*, Warszawa 1962.

synergic relations between machines and also between machines and people. The effect of synergies²⁸ is blurring boundaries between technology, nature and man. Technology has created a system of connected machines and as a result it became our 'natural' environment to which we sank in. Alienation from nature strengthened by the onset of dynamic machines have resulted in humans sinking into 'technicised' nature where man and his technology have become one inseparable entity.

Mumford and van Lier's theories today may seem somewhat oversimplified due to their focus not on the technology itself but on its by-product – the machine. This type of thinking leads us to envision a combination of man and technology in the form electronic and mechanical elements within the human body. But it is not surgery or implants which makes us cyborgs. Andy Clark in his book, *Natural-Born Cyborgs*, notices that what is specific to humans is their ability to enter into deep and complex relationships with non-biological constructions, tools and machines. Moreover, a physical, direct connection is not necessary. He states that man is a natural born cyborg, meaning that he is born open to cognitive connection with his own technology. The machines that we build are, "a deep and integral part of our systems for solving problems which we call human intelligence. Such tools should be considered part of our calculation apparatus, part of our brain"²⁹.

Technology, therefore, becomes part of our cognitive apparatus. Clark, in his work, gives more examples of biological elements intertwining with technological. If we accept this theory, it will seem obvious that man's synergy with technology began a long time before any factories or computers were built. Our top position on the Dennett tower makes our brains open to connections with outer tools. If we look for examples of technology tied closest to the cognitive process, it is the media that stand out among all other technological tools.

The media in our cognitive apparatus

A medium is not just a machine or a technological invention. A medium is not just a carrier of broadcast such as a stone, paper or an electromagnetic wave. A medium is just not a device which enables us access to content such as a radio, a television or a computer. A medium is not just a code, such as a language or a format, which we use in order to communicate and interpret broadcasts. A medium is not only that but it is all that. Such a broad definition of a medium was proposed in Jay David Bolter and Richard Grusin's book, *Remediation*, in which the hybrid character of a medium is focused on. To understand a medium we need to take into account all its aspects, its carrier, its genres, its content, and economic and social functions. They define it as "something which remediates/transmediates"³⁰. In this definition, we can find similarities to McLuhan's observation that the content of each medium is another medium³¹. Unfortunately, such definition may seem too ambiguous, although it does capture the one key characteristic of each medium – the capability of transmitting content in a specific to that medium way.

Bolter and Grusin point out, characteristic to the process of remediation, directness and hypermediality game³². Every medium strives to become transparent, invisible to the recipient, in order to ensure 'full saturation' where we do not notice the carrier. Also, at times, a medium aims to be noticed, to draw recipients' attention to its own limitations, capabilities, forms and conventions. This game of two contrasting trends – aiming, at the same time, to be transparent and visible – is a fundamental media mechanism. Moreover, this game, which will be discussed following, brings with itself certain cognitive traps.

In this article we will focus on the theory that each medium possesses its own media determinants. Each one has got its own form, narration and genre patterns, scripts, heuristics, social and cultural protocols. Some media determinants are cognitive in character or, in other words, are

28 Cf. ibidem and M. Sieńko, *Człowiek w pajęczynie. Internet jako zjawisko kulturowe*, Wrocław 2002, p. 56–60.

29 A. Clark, *Natural-Born Cyborgs: Minds, Technologies, and the Future of Human Intelligence*, Oxford– New York 2003, p. 5–6.

30 J.D. Bolter, R. Grusin, *Remediation. Understanding New Media*, Cambridge–London 2000, p. 65–68.

31 M. McLuhan, *Zrozumieć media...*, p. 39.

32 J.D. Bolter, R. Grusin, *Remediation...*, p. 21–44.

part of our cognitive apparatus. Our openness to technology enables us to form synergic relationships with every medium and, what is more, to keep up with changes. We need to remember that these determinants are historically variable. The fact that we do not function within a uniform media environment complicates the situation even more. Although in some aspects modern digital technologies are overtaking traditional media, forecasts of the 'death' of old media were definitely premature. As a result, we live in a multimedia world where the media constantly remediate each other and intertwine into complex, convergent structure. This makes people simultaneously adapt to different media which creates a difficult cognitive situation. At all times, we are bombarded with information that we cannot all possibly process. This leads us to use various heuristics which does not always turn out for the best. In other words, patterns which work in certain situations and one medium, are useless in another. Let's examine this situation based on the three cognitive errors mentioned earlier.

Three errors – recapitulation

Google black box

The black box error in case of Google regards the erroneous interpretation of the effects obtained as a result of the search carried out through Google. Without knowing how the search mechanism works, we assume that it works how we wish it should. For the average person, it is another black box which we do not understand nor do we need to understand but it does what it needs to do. This faith is deceptive as no search engine is able to assess the quality of information it provides, to understand it or to choose the best option. The *PageRank* algorithm eliminates the competition, it brings billion dollar revenues and it may seem extraordinary and perfect but in reality it boils down to several dozen lines of code. Unfortunately, most people are not aware of this, we do not understand the search mechanism and we attribute it more capabilities than we should.

The source of this type of error is due to people not understanding the mechanism behind a given medium. The recipient puts too much faith in technology and without thinking he accepts a particular media ideology. Google is considered to be the best search engine there is, it beat the competition as a result of numerous other services it offers (such as GMail, Google Reader, Froogle etc.) and all the more often it is offered as the Web's basic interface. Hence, it is easy for the average user to believe that when it says that it searches, it really does.

This type of error is not exclusive of digital media. The same is when a viewer automatically accepts the credibility of the information broadcasted in news services. He may think, if such services are created to inform, this is what they do. If one is not familiar with corporate or financial determinants of a given service, or lacks media consciousness, he is likely to believe that it is telling the truth. Normally, we do not see how many factors there are which can potentially influence the content of broadcasted information but it is definitely visible in all traditional media such as press and television³³.

Generally speaking, the black box error is an algorithm which leads us to evaluate broadcasts of a given medium a certain way, without questioning their validity. Since we know what a certain medium does, we do not need to understand how it does it. Looking at the Google example from a memetics perspective, we could say that it is in the search engine's interest to have everyone think that it is infallible. The fact that people use it successfully (they find what they are looking for) in addition to the image of a perfect search engine lead us to believe that the content it suggests is valuable.

33 Cf. B.H. Bagdikian, *The New Media Monopoly*, Boston 2004; N. Postman, P. Powers, *How to Watch TV News*, London 1992.

Genre shift in advertising

The second example, the *All I want for Xmas is a PSP* website story, illustrates two more cognitive errors. The creators of this advertisement were counting on people making the first type of error, the other one – they made themselves.

The first type of error, known as the genre shift error, is based on the premise that if we recognize the broadcast type, we interpret it in accordance with our knowledge of the genre. If the medium is a blog, which allows ordinary people to publish, we assume that its content is reliable and independent of manipulation. We are likely to believe opinions and reviews included there and, in most cases, we are right. It is true that we can avoid making wrong purchases if we first read others' opinions on their blogs. But what if someone pays a blogger to write favourable opinions about a certain product? Our interpretation pattern, generally useful, is now useless.

This type of error will be made anytime the user does not correctly recognize the genre or type of broadcast he is dealing with. In the above example, we are dealing with a situation in which an advertisement was created in the shape of a blog. It is another example of surreptitious advertising which is as old as the mass media. This type of cognitive error can also be made in different situations. Another famous example was Orson Wells' radio programme, *The War of the Worlds*. It was a fictitious programme but it was made to sound like a real news service without commercial breaks and, as a result, many people believed the dramatic information they heard to be real and fled their homes. These people did not recognize the type of programme correctly, they used wrong interpretation scripts and completely misunderstood the broadcasted content.

In the *All I want for Xmas is a PSP* example there is one more cognitive error, made by the Zipatoni agency, the creators of the fictitious blog. They underestimated their audience as they thought that their recipients, similar to TV viewers, will be passive. Meanwhile, the Internet turns out to be a very proactive medium. Web surfers are, all the more so, critical of the sources of knowledge offered to them and they possess the technical skills to expose blatant fraud and to quickly disseminate such news. It was enough for one inquisitive person to check the website's domain and see that it was that of a well known advertising agency. The catch is, however, that often information about a campaign's fiasco becomes more popular than the campaign itself. The advertisers have made an error which, analogously, can be called a *media shift error*. They predicted that users would confuse broadcast types and interpret the blog according to the creators' wishes. Meanwhile, it was the broadcasters that were wrong – they chose the wrong medium and used a strategy successful in media such as television or radio but not so on the World Wide Web.

Wikipedia within the intermedia gap

The Wikipedia is an example of an error which can be called an intermedia gap as it takes place in the process of transmediation. The acquisition of media competences takes place gradually and is based on adjusting man to a medium. Speaking metaphorically, if two elements fit as in a puzzle, everything is great. But if we take a man used to the printed medium and make him use a digital one, shaped entirely differently, the puzzles do not fit perfectly and between them there is a gap. This gap is the source of the error.

In this case, the user does not recognise the moment of encyclopaedia's remediation. Electronic media, in this case, are extraordinary. They are a metamedium through which we can access traditional media such as print or television but via which it is also easier to overlook their characteristic limitations or determinants. Electronic media are successful in remediating traditional media, on the Internet we can find books, television programmes, shows as well as films and music. Moreover, the computer is so successful at remediation of other mediums that it is easy to forget that there are differences between them, especially if the interfaces are visually similar, such as is the case with the monitor and the television set. This may result in some people, not too familiar with the technical and cultural regulations of the computer's functioning, incorrectly interpreting its broadcasts. Hence, it is easy to conclude that the Internet Wikipedia is the same as the paper

encyclopaedia and use the same cognitive patterns. Despite seeming similarities, we are dealing with two entirely different sources.

Conclusion

The cognitive errors described above are the tip of the iceberg. The goal of this article was not, however, to provide a comprehensive presentation of media cognitive determinants but to outline the problem and to indicate a research strategy which could be useful in sorting out this troublesome situation. Let's list the key assumptions of the presented above cognitive model:

1. Cognition takes place via complex biological and cultural mechanisms which are called our cognitive apparatus.
2. Elements of our cognitive apparatus are not transparent, that is they shape our cognition on the perception as well as the data processing (interpretation) level.
3. Culturally determined mechanisms which hinder our cognition are: heuristic cognitive errors, narration structures, scripts, associations, metaphors and cognitive models.
4. Cultural elements of our cognitive apparatus undergo changes. Some of these can be described using evolution models. This is possible on the biological (psychological evolution) and the cultural (memetics) level.
5. According to Clark, man is a cyborg open to synergy with his technology. It is media technologies which are particularly intertwined with our cognitive apparatus which leads to specific to the media sphere cognitive errors.

One fundamental mechanism is the source of the three errors described above. Each and every medium that we are dealing with requires some adaptation from us. Citing van Lier, we can talk about a synergy between man and medium or, using more modern terminology, about media competence or *media literacy*. The art of 'reading' a medium is not just about the correct interpretation of broadcast. We learn to ignore certain elements, ie. when we read a book, we do not pay much attention to the printer's imprint. Similarly, on TV we do not focus on commercials or on the Internet, we ignore the sponsored links. We learn to evaluate broadcasts in terms of their validity and authenticity. For example, a politician's declaration made during an entertainment talk show is not the same as one made at an official press conference and transmitted in a news service. Similarly, a text presented on a website such as sciaga.pl should not be treated the same way as an entry in Wikipedia. Such skills enable us to differentiate fiction from real information; ideological speeches from commercials, etc.

The complicated media environment does not make matters easy for us. We are surrounded by different media, each with their own cognitive determinants. Between these media there is content locked within genre and narration structures, each requiring separate cognitive strategies. According to Henry Jenkins, we live in time of culture convergence³⁴ where content and types of broadcasts move from one medium to another and are constantly remediated, processed and translated into a new media language. All that leads to people being faced with a chaotic collection of content that is all the more so difficult to comprehend.

The cognitive strategy proposed in this article could be treated as a remedy to all this chaos. A thorough analysis of cognitive errors made by people in their media use, supported by philosophical, humanistic, social and biological studies' accomplishments will, hopefully, aid us in avoiding at least some of them.

But there is an even better reason why philosophers attempt to understand media. Vilem Flusser in conclusion on his deliberations on photography wrote, "Philosophy of photography is necessary in order for photography practise to be fully conscious. And this is because from practise results a model for freedom in the post-industrial context. Philosophy of photography must show

34 H. Jenkins, *Kultura konwergencji. Zderzenie starych i nowych mediów*, Warszawa 2007.

how it is possible for this freedom to have its own space³⁵.

His words are a proper conclusion also for these deliberations. Understanding the mechanisms beneath the multimedia universe will free people from acting automatically and thoughtlessly processing set interpretation patterns. Perhaps this will enrich people's life experiences and enable them to avoid cognitive traps so commonly used by the world of media.

35 V. Flusser, *Ku filozofii fotografii*, Katowice 2004, p. 70.