Reflections on the Gutenberg Galaxy

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Abstract

We discuss the notions of sequentialness and repeatability within the context of "The Gutenberg Galaxy", examine their relationship with the phonetic alphabet and adopt an evolutionary perspective to trace their roots to the times before the typographic revolution, and even before the writing and speech. They were present already in the archaic auditorial world and the typographic revolution is possibly a period where these physical and cognitive features came into full prominence. The rapid return from the Gutenberg galaxy to the auditorially dominated world after the electric and electronic revolution is not surprising since it was a come back to the ancient familiar home.

Keywords: Gutenberg Galaxy, Typographic revolution, Phonetic alphabet, Sequentialness, Repeatability

1. Introduction

The grandiose book of Marshall McLuhan investigates the deep impacts of typography on human soul and the social life. The transformation of the mankind and the society caused by the typography is multi-faceted and is possibly comparable only to the big transitions brought about by the invention of the writing or by the later electronic revolution. We would like very briefly recall a few of the main points of Mcluhan, mostly in his own words (McLuhan, 1962;McLuhan, E. & Zingrone, 1995):

* The interiorization of the technology of the phonetic alphabet translates man from the magical world of the ear to neutral visual world.
* The invention of typography confirmed and extended the new visual stress of applied knowledge, providing the first uniformly repeatable commodity, the first assembly-line, and the first mass-production.
* Scribal culture could have neither authors nor publics such as were created by typogrphy.
* With Gutenberg Europe enters the technological phase of progress, when change itself becomes the archetypal norm of social life.
* Typography is not only a technology but is in itself a natural resource or staple.
* Print caused a split between head and heart, creating a long-lasting European trauma.
* The portability of the book added much to the new cult of individualism.
* The citizen armies in the print-age were the ideal manifestations of the new technology.
* Print altered not only the spelling and the grammar but the accentuation and inflection of languages.
* Print created national uniformity and government centralism, but also individualism and opposition to government as such.

2. Restriction in the Dominance of the Visual World

It is beyond question that all of these (and the other for the sake of brevity not mentioned) aspects of the typographic revolution are of extreme significance, but one should also admit that these aspects are deeply interrelated and at least partly causally structured. McLuhan stresses throughout the book two phenomena which are the pivotal dynamics of the bunch of transformations caused by the typography. The first is the transfer of dominancy from the auditorial world to the visual world by the phonetic alphabet and the second is the emergence of well-defined, standardized, repeatable commodities in conjunction with sequential thinking. Many of the changes brought about by typography seem to a large extent to be reducible to these fundamental primary components.

It is more than remarkable that the increasing weight of the visual world promoted the sequentiality in thinking and handling. The visual world, being embedded into a background of several space dimensions, is intrinsically non-sequential and devoid of a natural order. If any, we could only say that the distance between the objects and the eye could be an ordering parameter, as implicitly arises in perspective, but even in this regard, there are certainly several objects having the same distance to the eye, so that this group of objects are not sequential in themselves. Any effort to order them sequentially would be artificial since these objects with the same distance to the eye are distributed in a quasi-planar part of space and hence non-sequential. The auditorial (or acoustic) world however is naturally sequential. The running, directed, one-dimensional time, whatever its true ontological nature mightbe, orders the acoustic sensations sequentially. It can surely happen that we can receive simultaneous acoustic signals from different senders, but this is normally a noise and nuisance; it is the exception rather than the rule, and an exact simultaneity is physically rather very improbable.

So how did it come that by the advent of phonetic alphabet and then of typography the visual overtook the auditorial and promoted the sequentialness in a rather unexpected and almost contradictory way? Now, it is obvious that we read by our eyes and not by our ears. The more time we invest to reading, the more we use our visual sense and repress the auditorial sense. And not seldom we seek silence during reading. McLuhan reminds again and again that in pre-typographic medieval times reading was loud! This is a very remarkable circumstance. Could it be for the compensation of the repressed auditorial sense? Or a relict from auditorially dominated times when the message was the speech? It seems that reading needs to be learned and it can take centuries. Anyway, the exclusive sense for the reading is the visual without any dispute. But what is the structure the visual sense is confronted with? Though Ivins Jr. (1953) rightly stresses the importance of printed pictorial material and its impact on subsequent thinking, science and technology, a printed book is mainly a linear array of letters. They are printed ona page of paper and though the page is apparently two-dimensional, the array which exhousts the page by jumping from a line to the next, is genuinely one dimensional and thus sequential. And it was so since the dawn of writing. We will discuss the specifics of the typographically written word, but sequentialness was immanent already in the hand-written word. McLuhan attributes deservedly great transforming power to the phonetic alphabet, but sequentialness is not bound to it; it was inevitable even in the pictographic writing, since the pictograms had to be written in a structured sequential order and not displayed arbitrarily on a piece of surface.

Resuming this point, we can say that it was not the turnover from the auditorial world to the visual which brought as a byproduct the sequentiality, but it was the intrinsic sequentiality of writing which forced the visual sense to operate on a matrix alien to it. The three-dimensional visual apparatus took stage, but was forced to operate on a one-dimensional assembly line, rather reminiscent of “Modern Times” of Chaplin. We turn from the auditorial to the visual world, but at the same time restrict it from three dimensions to one. It wasn’t for nothing that McLuhan speculated that the schizophrenia might be a necessary consequence of literacy. The triumphal procession of the phonetic alphabet truly transformed the proportions between the senses in favor of the visual and in parallel to this the sequentialization of information processing and then of production. So, there is a vertract relationship between the shift from auditorial to visual on the one hand and the sequentialization on the other hand. They both have the same driving force, the (mainly) phonetic alphabet, but along the common evolvement the shift, and hence the visual, is the server, and the sequentiality lives on the visual’s expense.

3. The Ghost of Uniform Repeatability

Probably the most conspicuous trademark of typography is repeatability. The printed book seems to be the first uniformly repeatable commodity, produced on the first assmbly-line and giving rise to the first mass-production, as remarked by McLuhan. This evaluation has three components. We are not in a position to judge whether in 14. and 15. centuries in some regions of the world with highly developped manufacture industries (for example in Gujarat in India) some forms of assembly-line-like production procedures already emerged and mass-production was operational for overland and overseas trade (for the Ottoman Empire, China and for Europe); it would be at least an interesting topic to investigate how close those medieval economies came to assembly-line and mass-production(Hobson, 2004; Goody, 1995) In any case, the other property of the printed book, uniform repeatability, seems to be hardly expected from mainly hand-made manufacture products. Uniform repeatability certainly deserves further discussion. If there is a uniform repeatability, then it is certainly the printed letter! But what about the hand-written letter? Isn’t it uniformly repeatable? It depends on the writer.

We can conceive that some professional scribes could produce almost uniform hand-written letters without any discernable distortions for the reader, but admittedly they would do this in rather long timespans and to high prices without any chance to compete with typography. The average scribe would produce hardly uniform letters. At this point we must be aware however, that even in printed letter the uniformity is somewhat relative due to the usage of different fonts for the same letter. Even the same font can slightly differ from printer to printer and the reader had to master various shapesfor the same letter. It is sometimes amusingly and bitterly commented that medieval gotic was not easy reading.

Nontheless, the human brain was already a great master in recognizing, identifying, classifying and categorizing self-replicating signs and patterns long ago by the advent of typography. It was a childs play for him to recognize printed letters, or hand-written letters either. It is true that the printed book represented an ideal prototype for uniformly repeatable, available, portable commodity, but it seems that repeatability refers here not so much to the printed and recognizable letter and word, as to the printed book itself which is truely uncomparable to the hand-written book in every respect. The miracle of the printed book was surely enabled by the moving lead letters, bu its success is probably a more complex social phenomenon in a boiling and transforming society, transcending the mere repeatability and availability of the commodity itself.

4. Before the Phonetic Alphabet

One can surely not overestimate the impacts of the phonetic alphabet on the world-conception of the man resulting from the great shift from the auditorial world to the visual world, transforming him at the end (till the end of the era of the Gutenberg Galaxy) into the typographic man, with due blesses and curses. Some authors attribute to the phonetic alphabeteven more than that. Dantzig (2005) advocates the viewpoint that the phonetic alphabet even shaped the structuring of the Euclidean space in the minds of the ancient Greeks. Ivins however is of the opinion that Greek geometric thinking was primarily tactile (Ivins Jr., 1946).It is famously known that Kant considered the structure of the Euclidean space inborn and a priori for the mankind. These are deep controversial issues beyond our concern, but one should bear in mind that man had a billion-year existence in this space and in this environment, most of it without phonetic alphabet, even without speech, but with substantial tactile, auditorial and visual capabilities. He survived in this complex world, so he must somehow have produced some working models of the world surrounding him. This must surely be true for animals also. There are fishes who, by throwing a blob from inside the water, can hit an insect on a twig outside the water and above the water level. This shows that they must have somehow mastered the law of the refraction of light! So we could expect from the species of man, who stays a fewsteps higher on the ladder of evolution, that he develops a conception of space with the help of his tactile and visual senses, well before historical times (though we are not qualified to judge whether it was Euclidean or not).

One could even speculate that the development of our tactile apparatus was a response to the structure of the world (and space) in our vicinity, and that of the visual apparatus a response to the structure of the distant world (and space); the development of the auditorial apparatus a response to rapid movements in our environment. Of the basic needs and instincts of the human being, the security need seems to have the top priority. To perceive an acute danger from the near and far environment we can rely only on our visual and auditorial senses (and maybe to a lesser degree on our smell sense). The visual and auditorial senses are of very different natures and it would be illuminating to know more on their phylogenetic development routes. Seeing is passive in the sense that we can see only in presence of light and can not produce light by ourselves (The adjective “passive” here should not be misunderstood, as seeing, as a construction process on the basis of optical inputs, is an extremely active process).

As a result the visual apparatus is helpless in absence of enough light. On the contrary, the auditorial apparatus is our stronghold in the dark and has a companion in speech apparatus where we can utter comparable signs of the same modality we hear and make sense of. This enables us to use the acoustic modality as a means of communication which proves of utmost importance. Using the optical modality as a means of communication was very limited and negligible for eons, till the creation of writing, which made it possible to communicate without speeking, even without seeing the recipient. The typographic man was born with the birth of writing, though he had to evolve several thousand years to be finally possessed by it; till the revanche of the auditorial modality by the advent of the electronic revolution.

We can safely assume that the auditorial sense was primary for the human being at least since the invention of speech. The visual sense had a status of indispensible secondary position. We now wish to examine to what extent sequentialness and repeatability, commonly attributed to the impact of the phonetic alphabet, was already present in the speech apparatus of the auditorial modality. Aside from the time-related natural and physical sequentialness of acoustic signals from the environment and from actively produced sounds, there is a syntactic sequentialness in the structure of speech. Furthermore, for acousticly produced and transmitted words to carry a reliable message, they must be repeatable within narrow margins. But the real mystery of speech lies somewhere else and puts it on the same footing with writing: It is the absolutely abstract assignments of words, which are arbitrary acoustic packages, to objects, actions and notions, without any inner and intrinsic structural relationship. Writing assignssome written symbols to spoken words, mostly structurally unrelated in any way to the words (or notions they represent), at least at certain stage of development, after the pictographic era; the phonetic alphabet being its culmination. Likewise, speech associates sound symbols with notions, structurally unrelated to them. This is an achievement whose importance can not be overestimated. It is difficult to understand how it could ever been possible to transmit meaning via meaningless symbols!

5. The Magic of the Abstract Assignment

If you want to describe an animal to your cave-mate you can draw a picture, a sketch, highlighting the characteristic features of the animal and you can be almost sure that your mate understood what you meant. What you want to tell about this animal is a bit more difficult to depict, but somehow you can draw a spear if you intend to propose that tomorrow the team should try to kill one of those animals or you could draw high-held hands if you want to indicate that this animal is mighty and holy. We could say that here we are producing a "content-addressed" message, which is in a certain sense self-explaining. It could be understood even in the absence of the sourceof the message.

But to assign an acoustic signal, a certain package of sound, to this animal, which is meant to represent it, is a marvellous leap of intellectual achievement. Probably in earlier stages of this novel method of transmitting messages, the signal associated with an animal might well have been related to sounds uttered by this animal, but what about animals without a definite characteristic sound, what about trees, and other objects in the environment significant for our people? Most difficultly, what about actions, intensions, thoughts and feelings? They have hardly characteristic sounds. So, the new invention, which later will evolve to the performance what will be called the speech, must be developed consistently on a content-independent basis of assignment of arbitrary acoustic signals to objects and actions, devoid of any intrinsic meaning. The meaning of the signal will lie in the convention.

The emergence of this ability of speech is one of the biggest problems of science. It is intimately related to the evolution of human anatomy and physiology since we are the only species with a speech apparatus and it is interweaved with other aspects of human life such as psychology, sociology, and maybe not the least, geography (Fitch, 2000; Cheney & Seyfarth, 2005). Regarding the time when the language evolved, there is another ongoing dispute, but one can safely assume that it will somehow be expressed in terms of a few hundred thousand years (Night; 2016; Sverker, 2006). As comparison, one should bring to mind, that writing was invented about five thousand year ago, and the typography about five hundred years ago; the electric revolution about hundred years ago. These time scales are deeply meaningful as we come to discuss below.

6. Beneath the Tip of the Iceberg

This achievement of abstract assignment of acoustic signals (names) to objects and actionspresupposes another abstract ability: To recognize objects, to differentiate action types and to build notions. This ability we share with most of the animals insofar as they are able to recognize, for example, their predators or prays. This is a must for the animal to survive. For our own species, we can presume that this ability took millions of years to evolve, based on earlier experience of assumedly billion years.

It happens so that a certain species of predator or pray "repeats" itself in the sense that there are rather many of them, which differ within narrow ranges so that they can be "abstracted" to a template, or to a kind of "notion" for the animal who is in need to recognize it. As the predator or pray can appear in very different positions, this necessitates a more complex recognition apparatus on the side of our animal, which transcends a simple static comparison. The same applies to actions and behaviour modes, coupled with a need for prediction.

The world happens to be so structured that objects and actions tend to repeat themselves and it is probably this fact which makes the world understandable and predictable. We meet here again the phenomenon of repeatability. Our cognitive capacity classifies and converts the objects and actions in the environment, which repeat themselves, into notions, which become tools of survival; this dures for millions of years. For several hundred thousand years ago we began to assign abstract, content-independent acoustic signals to these notions, opening unprecedented means of communication, which was a tremendousleap in the whole evolution of mankind. Invention of writing and the subsequent phonetic alphabet has principally the same abstract and content-independent assignment structure. We assigned first written symbols (idiograms) to sounds coding the objects, actions and notions, i.e. it was a kind of double magic in the sense that we assigned only-partly-content-related symbols to sounds, which were to a great degree arbitrary, content-independent acoustic signals. This process culminated in the invention of the phonetic alphabet, where the acoustic signals were split into their "atoms", the phonems, and totally content-independent written symbols were assigned to them. They had at most a faint content-relation with respect to objects loosely associated with the phonem, but absolutely no content-relation to the phonem itself. It was a new breakthrough in the evolution of mankind with great impact on human life.

The typographic revolution was only the final stage of this endevour. Though many authors stress the very important differences between hand-writing and typography and consequences thereof, some of which are obvious, and some are hidden, it is nevertheless a matter of quantitative and qualitative differences within the same compartment of communication paradigm. Compared with the speech paradigm of the acoustic world it is too new, young and hampered, and already overthrown by the electric revolution. It seems that during the five thousand years of literacy, there was neither a period, nor a tribe, where all people were literate. It is simply a difficult job. We must still spend at least several months, in primary school or elsewhere, to learn writing. But if somebody couldn't learn speaking, or couldn't understand the spoken, without any anatomical defect, then he was regarded always and in all tribes as something anomalous.

There is a still unsettled discussion to which extent the human genom effected and enabled the speech and possibly has been effected by it during the course of several hundred thousand years, but there is no corresponding discussion for writing and reading, or for typography. The time span is simply too short for such an interaction. We spent such a long time in the acoustical world, that it has become our habitat. The visually dominated written-symbol world and the ensuant Gutenberg Galaxy was foreign to us. One of the prophetic apprehensions of McLuhan was the discarding and dissolution of the Gutenberg Galaxy by the electric and the following electronic revolution. Indeed, it is simply the return to home, where we feel ourselves comfortable. Here lies also the reason why videos so easily conquered the medium of Internet, which began on a primarily typographic basis.

7. Conclusion

Sequentialness and repeatability, which are considered as the most conspicuous trademarks of the typographic revolution, are indeed of paramount importance in "The Gutenberg Galaxy", but one should at the same time admit that they are of an older origin than the typographic revolution and the hand-written script. Sequentialness is, in a physical sense, more naturally present in the auditorial world and the repeatability is the basis of concept formation which goes wide back even before speech. The auditorial world is time-like and the visual world is space-like. The alphabet and especially the phonetic alphabet compels the visual apparatus to operate on a time-like, sequential basis with repeatable ingredients. This was a medium the human being was not used to in his evolutionary career and this might be the reason why it was all too easy for him to return to the indigenous auditorial world by the advent of the electric and electronic revolution.

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