

INFLUENCE OF DIGITAL MEDIUM ON THE CONSTRUCTION OF NEW INTERDEPENDENCIES BETWEEN TEXT AND IMAGE

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As the subject of my comparative analysis I posit texts and images which appear on a monitor screen via web pages. I treat text and image as the primary components of a message, to varying extent conditioned by technological, semiotic and aesthetic aspects. Both types of messages constitute a mediation of sorts, providing the form and matter to in the case of the former – language, and of the latter – internal¹ images.

I assume the form to constitute a visual-image phenomenon, i.e. a layout of the basic elements of a graphical representation – of writing and images – in the surface of a digital page. The notion of form that I put forth is multilayered and complex, as it entails both single components and their mutual compositional interdependencies and even complicated layouts within the presentational space, e.g. a graphical interface of the code editor – for HTML² documents and the graphical interface of WWW pages and browsers – for the appearance of a web page. That is why text, analogically to image, is treated both in the context of the notions of visuality and imagery.

¹ The indicated internal categories mediate in perception, i.e. in the acts related to receiving, storing and processing data. See: Arnheim 1969: 24.

² There are several related formats of notation: HTML in its standardized 4.01 version, XHTML, which defines the rules of HTML 4 in a manner congruent with XML, lastly the most up to date standard of HTML5, which marks a further development of HTML4 along with its XML variety.

The form is partly conditioned by the matter, in the case of the net – the digital matter it is made of, that is why it enters into a series of interdependencies with it. Writing, image, as well as sound – the basic elements of a website – at the input stage of generating a digital message, i.e. on the physical, material level, constitute a strictly binary (zero and one) system. Light and sound waves are assigned digits – abstract symbols³. A computer differs from devices such as a typewriter or a paintbrush for creating an artwork, but it operates as a simulator of text and image. The CPU, which only recognizes a binary code, treats letters, colors, shapes and sounds just like any other alphanumeric symbols, i.e. it simulates them (see: Gwóźdź 2004: 102)⁴. For a machine, the ontological status of text and image is identical; hence, they may both undergo analogical processes of coding by way of mathematical algorithms.

The described relationships between digital matter and form result in a variety of processes and rules that mediate the shaping of a textual and visual message at the level of their further generation as well as their final projection. The form and matter construct the notion of a medium which I approach on the one side as a means for communication transfer, while on the other – as a means of cultural production, incorporated into a specific technique or technology⁵. I shall add, for the sake of a larger research

³ What happens here is not an analogous transformation of input data into different objects or material spaces. Therefore the digital notation does not involve conversion of material data into on/off binary data, instead requiring that they should be assigned numeric values. A technical medium stores digits without grouping them in defined wholes, whereas a digit identifies only the number and not the amount of matter.

⁴ A comparable situation occurs on the subsequent levels of either loading data – from the point of view of the sender or of its unpacking – from that of the recipient. All of those along with the rules assigned to them and the processes of data transmission further determine the specific nature of the Internet as a medium. The basic mechanism of operation of digital media consists in continuous restoring and processing of coded signs, on their reconstruction regardless of their actual location in space and time.

⁵ See the notion of communication techniques as found in: Szczęśna 2008: 21-30. The technological aspect of the medium is discussed for instance by: Gwóźdź 2001: 7; Lister [et al.] 2003: 123-158.

project, that it is a technology of visibility, defined both by the intermediary (the medium of the Internet, the medium of website apps, the medium of a web site), as well as by a digital machine. The digital device is not treated as solely mechanical, but also as a subject-object system, thus also a form of a physical medium. Such a broad understanding of the notion of medium is informed by a variety of research studies; additionally, it benefits from the theory of perception, in which a medium serves mainly as matter, from the theory of language, in which it is beheld as a structured form of thought and presentation, lastly, from communication technologies, which perceive medium in terms of the category of efficiency⁶.

For the above reason, I do not focus my research on well-established word/image forms, but on the processes currently underway, e.g. the iconification of writing, the literate image⁷ as well as picturization (*Web Studies* 2010) of both these media. In the latter procedure, I recognize unique features, as stemming from their graphical and digital coding, of messages mediated by the Internet. The digital image and word are subjects to a different sender-receiver logic from the schemes assigned to them in the analogue world: in the case of the former – of a perspectival representation, continuous tonality and chiaroscuro, in the case of the latter – a linear notation of typographical symbols, where both forms of communication are ‘imprisoned’ in a material, static medium: a canvas stretcher or a piece of paper. Whereas the logic of digital media is characterized by: constellation, modularity, automatization, variations and most diverse graphical forms (Hudzik 2017: 191-192), and most of all – processes. Hence, my suggestion to dissent from

⁶ Seen in such wide perspective, the medium becomes a sort of communication practice, dependant on various conditions, including: perception, cognition and technology, modeled in turn by social, historical, cultural and political influences. See: Hudzik 2017: 97-160.

⁷ Mike Sandbothe (1998) acknowledges that heretofore separate media-relay in the digital context of the hypertext undergo transformation of their specific features and enter into new combinations – digital intertwining of four variations: picturization of writing, orality of writing, iconification of writing and literate image. What transpires through these transformative tendencies is the transmedial nature of the Web, where all the respective media create combined systems, integral units in terms of their form and meaning. See also: Bolter 2001: 26-55.

the classical understanding of theory which associates scientific status with reconstruction of older forms and notions in new phenomena⁸ and instead to concentrate on the interdependencies between digital word and image typical for the medium of a website. An inspiring element within this framework is provided in the typology of the word/image relationship suggested by Aron K. Varga (1989), whereas at the level of the subject matter in the criterion of form. I find the latter interesting for it is understood as 'a spatial layout of visual and verbal objects' (Chesher 1997: 151)⁹. In that synthetic definition I suggest to replace the word 'visual' with 'image' and 'spatial' with 'surface.' Firstly, a graphic layout of a letter is perceived using the sense of sight, i.e. visually. Secondly, the notion of space defines a three-dimensional area in which every point is defined by three coordinates.

⁸ Ewa Szczęsna (2007: 210) suggested that potentially 'the direction of changes which have occurred (and are still occurring) in the contemporary culture requires a certain level of freedom and courage to reevaluate notions, to modify their range of meaning and their emotional content'. Whereas I propose, encouraged by Sandbothe's (1998) postulate, a more fundamental change: not a mere correction of idiom, but an entirely new one, not the methodological distance, but the rejection of the current methodology created for the purposes of analyzing the analogue media. It seems that science should not only keep up to date, but also precede the civilizational change in order to be able to model it. Today, such transformation is introduced by IT, on the one hand associated with the progress in information technology; on the other – with the changes in the processes of thought, perception and the manner of acquiring data, in a word of experiencing reality. In thus defined perspective, the closest to my research becomes the open methodological formula of comparative studies, on one hand based upon empirical data, precision, logical arguments and academic terminology on the other benefitting from the energy of far reaching comparisons, daring associations, introducing in that manner a tinge of creativity. See also: Vajda 1997; Kasperski 2010.

⁹ New, digital user practices differ qualitatively from the analogous ones. In real space, every object can be found at its proper address, i.e. in a particular place, in the digital environment data are located together with their address. The appearance of a unit occurs by way of it being named. An URL address for any given WWW document is both its name and, at the same time, its actual address, while the introduction thereof is of evocative nature and is related rather with the category of time than of space.

However, a digital medium – a website – at the point of its presentation constitutes a flat, two-dimensional surface. Also in terms of the process of generating the message all the activities entailed by digital construction of signs and their retrieval as data occur temporarily, i.e. outside the natural limitations of a three-dimensional physical space. The defined procedures organize data in complex layers of code, where at the level transferring the data below a separate heading is added – the formatting information.

The perspective of the receiver's perception assumed by Varga enabled him to stay clear of the methodologically determining matrix, which would reduce the indicated word/image relationship to the existing assumptions of aesthetics or semiotics, leading to predetermined effects of analyses. Much like Varga, I treat the basic media-relays (word, external image) on one hand as primarily existing in a relatively independent form; on the other as interacting with one another on many levels, e.g. generating and representation of digital messages or entering into interaction with the user. However, from the point of view of the operation of a machine, word and image become identical. Such dependence proves consequential for the work of graphics editors (e.g. Adobe Photoshop, GIMP), which generate the respective components of web pages. These introduce three fundamental processes which determine the word/image relations-processes: the picturization of writing, graphical nature of image, and self-reflexivity of either procedure. The first operation, approaching the idea of iconification (M. Sandbothe), means the written word is treated as an image (fig. 1). The effect is introduced with the *Text* tool, which creates and helps edit layers of writing, setting it horizontally or vertically, changing the distance between the lines, words, signs; it can even model the height and width of a typeface using percentages and also the color of their filling (RGB, CMYK, Pantone colors, patterns), it suggests font anti-aliasing (sharp, smooth, crisp, strong) or even the distortion of text (by bending it into the shape of a shell, flag, wave, fish, fisheye, etc.).

Using the *Layers* tool one may change the level of transparency of color and the display mode, e.g. 'soft light' and 'sharp light' or add an effect (e.g. shadow, inner glow, phasing, texture, contour, gradient overlay, etc.). More complex operations on written words are also available: aligning a text along a path; converting it into a path; transforming it into a highlighted section. The word – treated as an element of graphics – has always had its visual

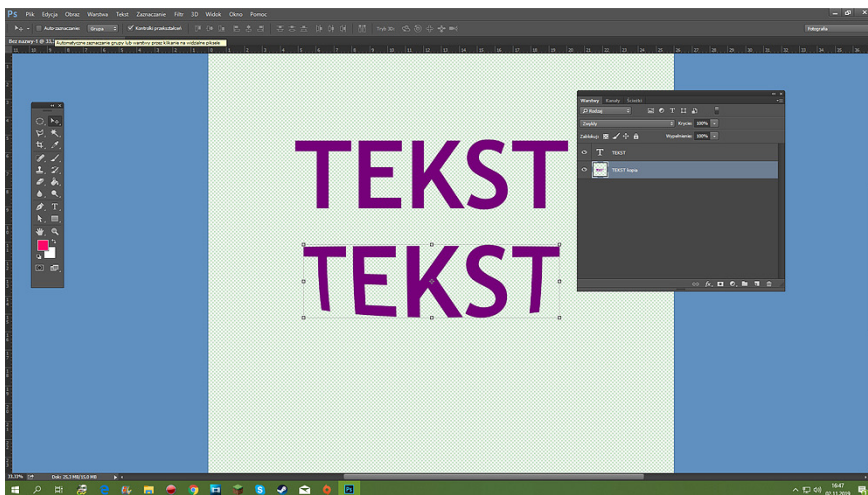


Fig. 1. Screenshot. Writing altered in a graphic editor (own source)

dimension; however, digital media only helped to understand that aspect fully and emphasize it. Here, the visuality of the word was additionally replaced with image visuality of the graphics type. Another process, consisting in graphical nature of an image (literate image – according to Sandbothe) can be carried out in graphics editors by modifying images in a manner analogous to texts, i.e. most of all highlighting (there is a whole range of options here), minimizing, enlarging, duplicating, transforming (rotations, reflections) and scaling. The process was defined by Sandboth as 'editing' (fig. 2).

Lastly, the third process entailing self-reflexivity of both the above operations, which results in word and image becoming identical, i.e. they both undergo internal transformations (fig. 3).

Analogically to image, text starts to represent something. However, this process is not subject to the laws of reference to an external object, but to self-reference. Such relation can be achieved by applying the function of graphics editor programs consisting in an irreversible transformation of a text into a shape (Adobe Photoshop) or of a text into curves with edition of points enabled, incl. their adding and removing (Adobe Illustrator, GIMP). As a result of applying such operation, the text may subsequently undergo a range of visual effects, such as adjusting (auto-level, auto-contrast,

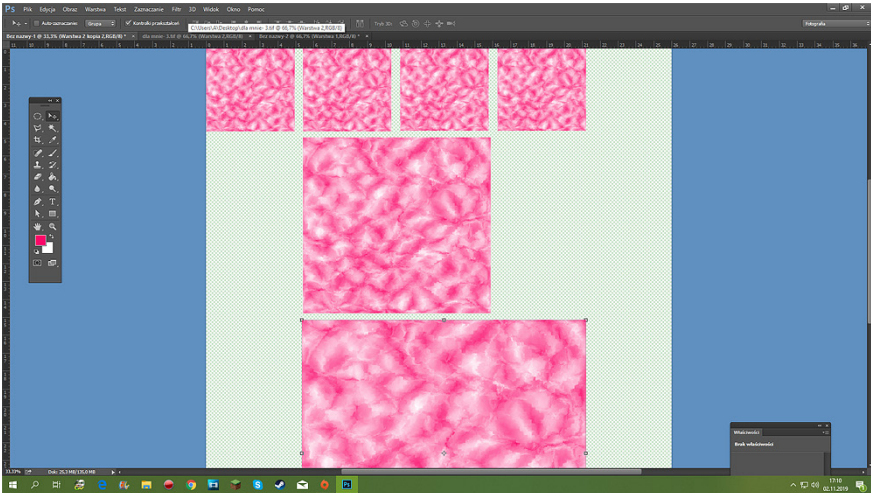


Fig. 2. Screenshot. An image altered in a graphics editor (own source)

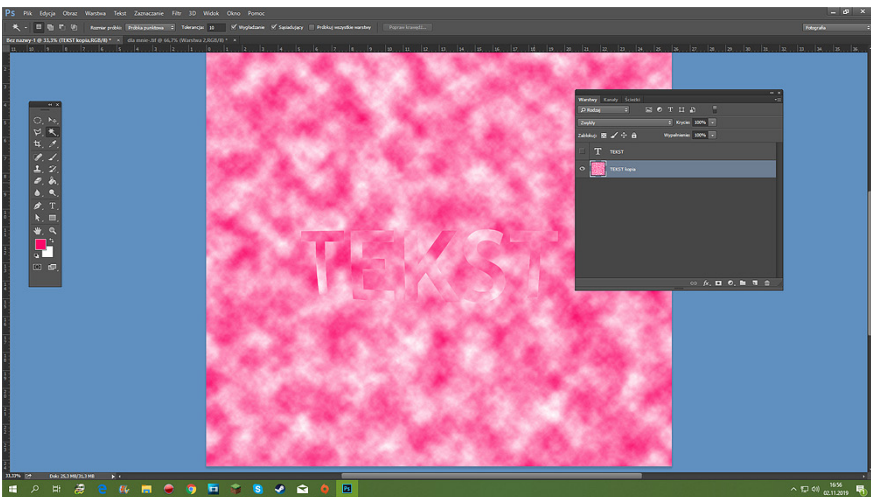


Fig. 3. Screenshot. Word and image refer to each other reflexively (own source)

auto-color, balance of colors, brightness/color, color/saturation, channel mixing and others) as well as filters (artistic, paintbrush, pixelating, blurring, style, noise, texture, video). In graphic editor programs one can also convert graphic image of text using the *Brush* tool, which we

may later use as a paintbrush to paint on the surface of the document. The sheer number of available graphical operations may oftentimes lead to a situation when the purpose of a representation no longer refers to the outside reality of a given digital image, instead focusing on that very representation and its diverging modifications. 'This concerns the whole universe of the digital, where the binarism of 0 and 1 leaves room only for an operational universe of figures (...). Integral calculus, integrated circuits. Distance is obliterated, both external distance from the real world and the internal distance specific to the sign' (Baudrillard 2006: 69). However, the process does not lead to 'the decline' of sign and representation, but it continues the era of the figural (Rodowick 1990: 12), which indeed happens to be contrasted against the sign reference, but the latter treated in terms of visual laws as a motivated reference to the reality outside of the image. Graphical environments construct alternative, virtual image-worlds by endowing them with their own meaning and significance. For the receiver, the process leads to a 'separation' of the image from its function of reflecting the outside reality. An image is 'read-watched' as a textual sign referring to itself or to other signs, performing the latter not only semantically, but also pragmatically (through a mouse-click). Thus understood image sign becomes 'the scene of representation, of seduction, of language: in language, signs seduce one another beyond meaning and, in their very architecture, signifier and signified are in a dual relation of seduction' (Baudrillard 2006: 69) and the boundary between them is blurred.

The centre of my analytical interest is the medium of the World Wide Web¹⁰, as its graphical structure results in the deepest redefinition of the division between digital text and image¹¹, constructing adumbrations of new digital

¹⁰ I do not focus, however, on other media of the Internet such as: e-mail, blogs, newsgroups and e-mailing lists, chats, tweets, as they still function within the linear model of writing and to a large extent reflect the well-established habits of perception. In their case the 'new media' are perceived and used still according to the 'old' rules.

¹¹ The patterns of vision and perception, consolidated through the historical norms of habits are imposed upon the cognition of web pages. Thus, I tentatively accept the post-structuralist principle that it is neither the language nor the mental image that pre-describe a given reality, in this case the virtual one, but that it can

forms-system-processes. A site becomes an intermediary medium for their existence. It is considered both a means of communication and a manner of presentation, obviously integrated into a particular technology. Within the proposed wide research program it constitutes, therefore, at the point of sending of the content: an HTML¹² document, made available in the Internet through a WWW server, which on the side of the users is opened and displayed using a web browser in the form of an image of a WWW page. The first layer, generating the message for WWW is constructed in a digital environment with the use of the Internet¹³ and WWW applications, which in turn are themselves created by programs, devices, applications and their principles of operation. The operation procedures of the media in question are important from the point of view of the machine, i.e. the side sending the message, as they make the websites visible. They also have a major influence on the design processes and the content of pages in that they model the second level – the receiving relations.

While browsing websites, we notice varied data-media: text, graphics, photographs, animations, dynamic menus. It gives the impression of large complexity, on the contrary, the basic structure of a website is an ordinary document of text, hypertext to be exact, and all the other elements – media of various genres – are provided in separate files. In fact, the whole operating

only be cognized through them. This means that on the one hand, the language with its own rules, and on the other – the mental imagery with its own principles impose upon us the perception and understanding of a digital message. I invoke the ‘traditional’ structures of thought in order to consequently demonstrate their incompatibility and inefficiency for perceiving digital interdependencies present in web pages.

¹² (HyperText Markup Language) – a language of markups used for creating documents intended for circulation in WWW.

¹³ The Internet as a computer network operates on the basis of a five-layer model of the TCP/IP (Transmission Control Protocol/Internet Protocol), meaning that text and image appearing in a web page are – from the perspective of the machine – respectively: 1. a set of signals (physical layer), 2. frame data (link layer of the networking interface data), 3. packets (Internet layer), 4. datagrams, segments (transport layer), 5. HTML message (application layer) and ultimately the actual web page. It is only the application layer that the user has direct access to. See: Freedman 1999.

principle of World Wide Web¹⁴ application was founded upon the idea of a hypertext. It involves a system of interactive navigation performed between connected fragments of the same document or HTML documents located on other Internet servers. The procedure was made possible due to the separation of the program storing the textual information from the program displaying it – the GUI¹⁵ as well as due to a very specific interface between the manner of storing and recording data and the representation thereof. This way, the Internet was transformed from a sophisticated ‘writing’ system of communication accessible only to a narrow group of specialists into a mass-scale, visual and graphical medium.

The sites of the Web 2.0 era do not merely serve to present content or images, they are far from being ‘read only’, instead they open the phase of active participation, having been designed to ‘meet the needs of’ users; hence, they include blogs, chats, photo and video albums, access to social networks. In order to ensure effective and efficient communication, CSS styles were originally introduced and later visual systems of managing the content of CMS and SEO. I am going to discuss the first of these solutions in detail below, the second one constitutes program enabling simple creation of a WWW site as well as its later updating and development by the user, understood here as ‘not technically educated’. An example of such program is the most popular modular system of WordPress, yet, they also include Drupal and Joomla! The third technical solution serves to optimize the Internet websites for the needs of search engines, in the so-called process of positioning. The current stage in the development of websites additionally opens the era of wide accessibility to the Internet through mobile devices – smartphones, tablets and laptops. The development of the Mobile Web Design receives support from the HTML5, which is oriented towards popular multimedia, accessibility and web page service as well as automatic search. Mobile websites dedicated exclusively to mobile devices are the ‘lighter’ versions (containing only the basic pieces of information and less graphics)

¹⁴ HTTP (HyperText Transfer Protocol) – a set of procedures allowing for sending hypertext information between computers in a network; URL (Uniform Resource Locator) — the Internet address of a resource in the WWW. The term ‘hypertext’ was used in two out of three procedures establishing the digital network.

¹⁵ Graphical User Interface, the graphical environment.

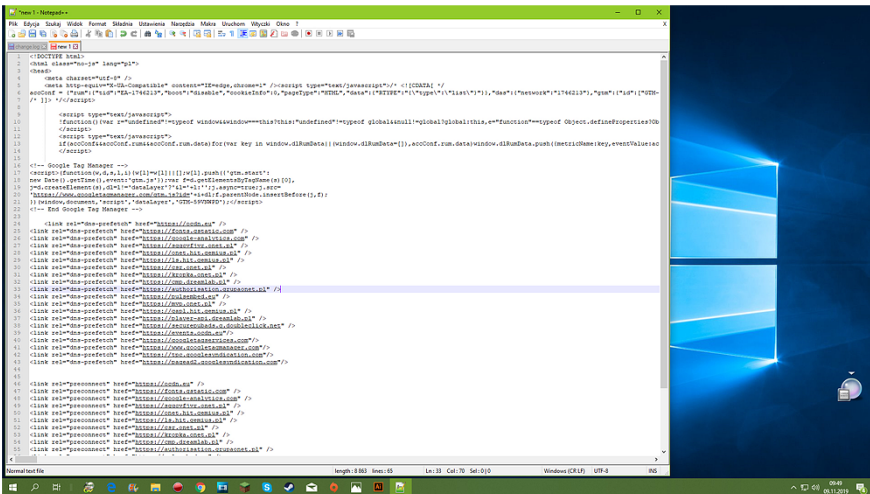


Fig. 4. Screenshot. Notepad++ Interface of an HTML code editor

of desktop Internet sites. Meanwhile, the responsive web design automatically adjusts itself to the device and its resolution – the same page is displayed on both stationary and mobile devices.

Regardless of the visual technique used in creating websites, the process of their coding (fig. 4) always consists in writing, which always occurs according to the command prompt and can be summed up as choosing commands from a strictly designated set with a predefined syntax. These procedures pertain both to text and to images (uploaded graphics, tables, forms, graphs, animations, videos). Whereas the semantic code of HTML is responsible for the structure and organization of data in a web page, the CSS¹⁶ styles define its presentation (see: Meyer 2002).

¹⁶ Cascading Style Sheets appeared circa the year 2000 as an answer to the growing expectations users had form the source code for generating websites. In that period, designers wanted the code to fulfill three fundamental functions: define the page content, determine its look and content, as well as control the activity of the content and its interactions with the user. The growing expectations from the generating language resulted in its fragmentation and specification. Web pages were designed in such a way that they would ensure storing these three types of code separately. Hence, a return to the original assumptions behind the HTML

Cascading Style Sheets, analogically to the HTML, contain a list of directives defining the manner in which an Internet browser is to display a given element of the HTML. In this manner all the parameters of display of Internet forms can be defined. The use of external CSS enables one to change the appearance of multiple pages at the same time without disturbing the HTML code itself, for the sheets may be shared by many documents. From the research standpoint assumed, a significant functionality provided by the CSS is its ability to create ‘responsive web’ through varied rendering of the site, meaning a presentation of the data in a form most suitable for the environment applied – the medium-carrier (e.g. visually, incl. on screen and in print or by sounds).

The structure of an HTML document opens with a common and mandatory element, namely the declaration of the document type. In the case of the HTML5¹⁷, the entry proves rather simple: `<!DOCTYPE html>`. The entire document is further created by superior elements, defined by starting markers: `<html>`, `<head>` and `<body>`, along with their counterpart endings `</html>`, `</head>`, `</body>`, such is the case of almost every marker. Meta-markers concern the manner of coding `<meta charset="UTF-8" />`, the title `<title>`, the title of the page `</title>`, the description of the content of the site and its keywords. In the ‘head’ section we can also include other meta-markers and CSS. The markers can be divided into two groups: block (e.g., `<h1>`, `<p>`, `<blockquote>`, `<div>`) and line ones (`<i>`, ``). The former cover the entire accessible surface of the page and define segments of texts, titles, sub-titles, paragraphs, layers, blocks of quotes, lists and tables. With the exception of block quote, they contain other line elements. In the HTML5

was noted, as it was to be structural, i.e. descriptive and structuring of the content. The CSS on the other hand were used to format the appearance of sites, while Java – to interact with the receiver. That stage of web page development saw the beginning of a focus not only on the semantics of the content, but also on its attractive, functional semiotics (e.g. a practical layout of components, intuitive navigation), which allowed for efficient browsing through the resources of the Internet. In the centre of attention was the usability and accessibility aspects of digital content, the UX.

¹⁷ For HTML 4.0.1 it was, for instance, `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN">`.

the marker `<div>` loses its importance to: `<header>` `<main>` `<article>` `<aside>` `<footer>` `<nav>`, other added elements are i.a. `<canvas>` `<figure>` `<details>` `<summary>`. Also the `` element is to be less used in favor of `<mark>` `<output>` `<var>` `<u>` `<s>`. At the same time, new linear markers should not appear in standardized version of the HTML5, whereas attempts are made at substituting italics and bold with structural markers of emphasis: `<i>` – ``, and the latter: `` – ``¹⁸. The emphasis is to differ from ordinary, visual bold and italics in that it would additionally introduce semantic information.

Photographs, infographics, diagrams, presentations, drawings, logos and others, all of these are introduced with a line marker ``, it is content free and requires several attributes, e.g., `src` (indicating the file with the image), `width` (of the image), `height` (of the image) and `alt` (alternative description of the image). This short profile is what appears instead of the image in text-based web browsers. Meanwhile in graphical web browsers it is displayed instead of the intended image when its name has been misspelled or when it has been removed from the server, alternatively, when displaying graphics has been disabled. The alternative text consists of a single word which should describe the image accurately. Omitting the 'alt' attribute will not result in the image not being displayed on the website, it will, however, make it less clear for text-based browsers. The marker `` is not a block element but a linear one; hence, it has to be included for instance into the layer defined as `<div>`. Therefore, even if we want our website to display a single image exclusively, we still have to introduce it into a block element. The marker ``, as a line component, enables one to put several images in a single line. In the notation: ` text `, the 'href' indicates the location of the file that is to be linked to, whereas the text between the opening marker `<a>` and the closing one `` will be displayed in the page as a hyperlink. The address of the resource is not seen in the link; however, it will be provided in the status bar of the browser.

The basis of operation of the application and hypertext documents are cross-references, links, which at the level of web page presentation point to another resource of the net than the one currently browsed, whereas at

¹⁸ See: https://www.w3schools.com/html/html5_intro.asp [accessed: 10.06.2018].

the level of interaction, having been clicked, they load the data indicated. The links¹⁹ are introduced with the marker `<a>`, which in the previous installments of the HTML created a line element so it could not appear independently on a website but only within a block component. However, in the HTML5, the marker `<a>` if it is not itself contained by an element displayed in a line, may also encompass block elements, except the interactive ones with the chosen attribute. Hyperlinks may refer to any type of documents, incl. another website, a document (PDF), an executable file (EXE), a piece of music (e.g. MP3) or graphics (JPG, static and dynamic GIF, PNG) (see: Lis 2010: 128-139); that is to both textual, visual and also audio, multimedia (animations, videos) information or to a different page. The fact that the procedures applied to invoke word and image are the same is a testament to the fact that at the level of WWW application their status is also identical. In the case of the `` marker and a link referring to a photograph or a drawing another dependency emerges – significant from the point of view of the current comparative analysis – a written code becomes an element generating among other things static or dynamic images.

A line when it generates digital message takes up: on one hand the space available to it horizontally of an HTML document (similarly to analogue messages, e.g. in books), on the other – it is subject to and inscribed into the surface of a three dimensional rectangle (the aggregate of lines is to create an image intended to be seen as a shape). That relationship was further reinforced with the rule of structuring the page components according

¹⁹ In order for them to be easy to find textual links on a web page are either identified with color or with underlining. When hovering the cursor over them, we cause it to change its shape usually into an icon of a hand with a pointed finger. The manner of link identification depends on the web browser, although most of them currently apply the same pattern, i.e. they introduce four states for any reference items: 1. *link* – standard, unvisited (blue) one; 2. *active* – opening in progress (red), it usually goes unnoticed as the color change lasts for a very short time; 3. *visited* – a reference which has already been used (purple); 4. *hover* – the indicated one, when the mouse cursor is above it. The colors of links may be changed in the CSS in order for them to match the site's aesthetics. An image can also be used as a link, it is then marked with a frame, its color according with the textual links; a URL address can also be made a link.

to CSS box model²⁰. Each element of the site when generated consists of: the frame, the outer margin, the internal spacing and the content. The text (content) means in this case a visual form inscribed into a rectangular box of pre-defined properties: its height and width with indicated distance from the frame and from the external margin, predefined color and the image of its background. The structure of the entire document comprises many analogous rectangles. They are visually correlated with the overriding shape of the screen, the graphical user interface and edit dialog boxes. Their sizes result from precise mathematical computation ensuring they fully fit in the windows of the browser. Other computer media: the Internet, the WWW application and the website are treated as carriers, their visual properties both determined and clear. In that case, the procedure of a linear text is based rather on a 'cartographic' sign of an HTML document with its location – than on a strictly 'semantic' one.

It turns out that the visual aspect of a web page from the point of view of its semantic, incl. its structural coding in a HTML document and its visual coding in a CSS document, is a precisely defined logical object: it takes into account the size of the browser window, the occurrence and interrelation of specific items and presentation points. At the same time, as it appears to the user, i.e. through the GUI, it constitutes a flat surface, fully transposed, available for process, interaction (fig. 5).

When appearing to the user of a digital content, the website is the fundamental element of a WWW application. From among other Internet media it is distinguished by the rules of its operation²¹, whereas its

²⁰ See: <https://www.w3.org/TR/2007/WD-css3-box-20070809/> [accessed: 10.06.2019].

²¹ Magdalena Karciarz and Maciej Dutko (2008) identified ten indicators of a web page functionality: consistence (the use of uniform elements in various parts of an Internet site); use of shortcuts; feedback (every action performed by the user must result in a reaction from the system); task grouping; reversibility of actions; mastery of the system; coherence of the interface; adaptability (interface's ability to adjust to various user groups); economical pathways (providing any activity with the smallest number of steps); structuring of the content. In the case of contemporary web pages, one has to additionally consider their mobile use and responsiveness.

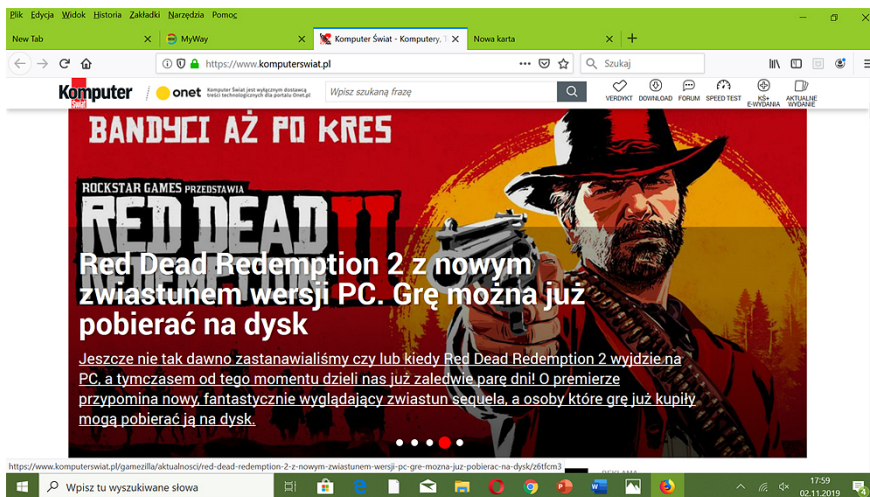


Fig. 5. Screenshot. The interface of a web browser Firefox and a web page (<https://www.komputerswiat.pl/> [accessed: 2.06.2019])

programmatic software and hardware elements, which create the Internet and the WWW application, are so to speak ‘hidden’ under the two-dimensional surface of a web page, presented through the graphical user interface²². The GUI, also referred to as the graphical environment, defines the visual manner of presenting data (word and image) by the computer as well as its interactions with the user, incl. drawing with an input device (a mouse, a trackball, a touchpad), input-output one (touchscreen) and the control of widgets.

Websites can be presented to users with the use of a web browser – to with another medium – in the form of two interdependent ingredients: its

²² The history of the emergence of the GUI for Internet sites is directly related to the developments in interfaces of web browsers and indirectly also of operating systems. For exactly that reason, Bernes Lee, wishing to publish the first web page in the Internet, had to create the Nexus web browser for the NextStep platform. Originally, it only worked on NeXT computers and with monochromatic graphics as well as with web documents, which can therefore be considered the predecessors of today’s web pages. Its interface, which displayed data in separate windows, was rather similar to the early Windows operating systems.

source code – the interface of an HTML document and the image of a web page, generated on the basis of the code. Conventionally, it is the latter type of projection that can be seen on the screen, the former being in a way hidden from the user, although there is a functionality of invoking it, using the ‘Show source’ option.

Internet browsers such as Mozilla FireFox, Google Chrome, Internet Explorer, Opera, Safari, much like the editors of HTML source code, construct the digital form of separate embedding already at the level of their graphical interface. The page thence becomes a surface for emergence of words, images, maps, games, films, etc. Its frame is regarded as the boundary separating it from the outside space, such as the desktop, screen bezel, and from the internal one – the browser’s window. The issue of graphical organization is predominantly of compositional, presentational and functional nature. In the first of these aspects, it usually takes up the entire screen space (full screen view) or only a part of it. It may also be minimized to take the form of a marker on the status bar. The form of separate embedding of text into image, at the level of its appearance, becomes the overriding system organizing the graphical interface both of source code editors and of web browsers. It subsequently splits into smaller micro-presentations – according to the same rule – a series of bars, incl. menu bar, favorites, command, status, Easy-WebPrint, Google Toolbar, Adobe PDF. Further functions of web browsers are being developed, shaping the presentation and user-interactions of these subsystems: bookmarks (favorites); application of skins (themes); personalization of the interface to the user’s needs and preferences; tab view; blocking of pop-up windows; managing personal information (cookies, browsing history, forms, passwords, etc.); ad blockers; zooming in of the text, images or the entire content of the site; speed dial; privacy mode. Within each of the listed components of web browser interface, there appears a series of button-icons and link-icons. These provide us with a good example of a whole scope of word/image forms: ranging from their complete visual or functional identification, through separate coexistence. In the first case, the words of the command function of the interface are transformed into graphics icons, while their graphical visualization – or picturization to be more precise – hides the textual forms of commands and informs of various actions in progress, e.g. printing, searches, found items, etc. If an action is

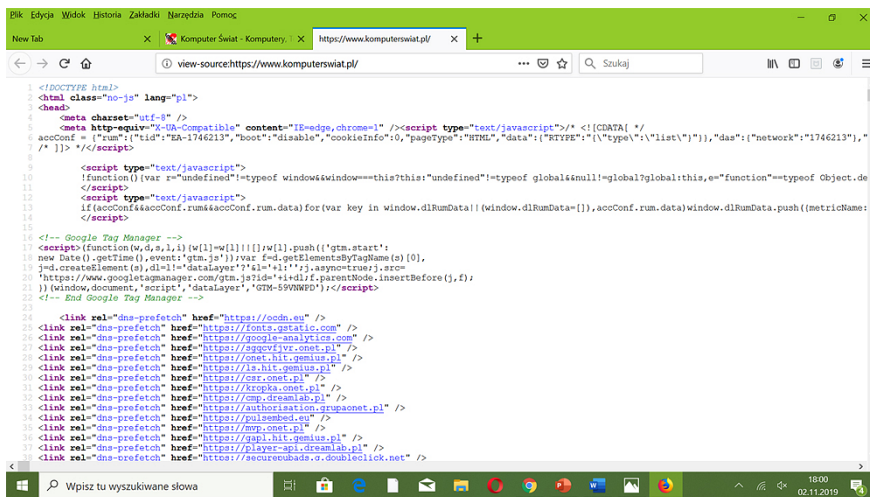


Fig. 6. Screenshot. Web browser Firefox and HTML document interface (<https://www.komputerswiat.pl/> [accessed: 2.06.2019])

not provided with a graphical form, it is certainly not intended for standard, mass use. In the second case, the icon combines the visual and textual elements, hence word and image coexist within a single graphical sign. The appearance of a link-icon in the 'favorites bar' can be personalized using one of the options: icon, icon and a short text, icon and a long text.

Analogical form of separate embedding of word into image appears at the level of source code – the HTML document. It sets the image as merely a surface for the exclusive presentation of text. Here, too, the overarching layout breaks down, though more incidentally into ever smaller, analogically structured components such as 'copy' and 'find' and also 'select all.' The interface of an HTML document enables only two basic graphical operations on text: 'word wrapping' and 'changing font size.' They do, however, appear to the user as multi-colored (with various colors identifying specific markers), their lines numbered and blocs of text separated; with 'syntax highlighting' also possible to be disabled (fig. 6).

Additionally, the source of a web page can be downloaded in the format 'Web Page, complete', 'Web Page, HTML only', or as 'Text files'. When re-opened, it will either appear in a new tab of the browser or with the use of 'quick-view' – in a thumbnail of the website, next to it. In the first

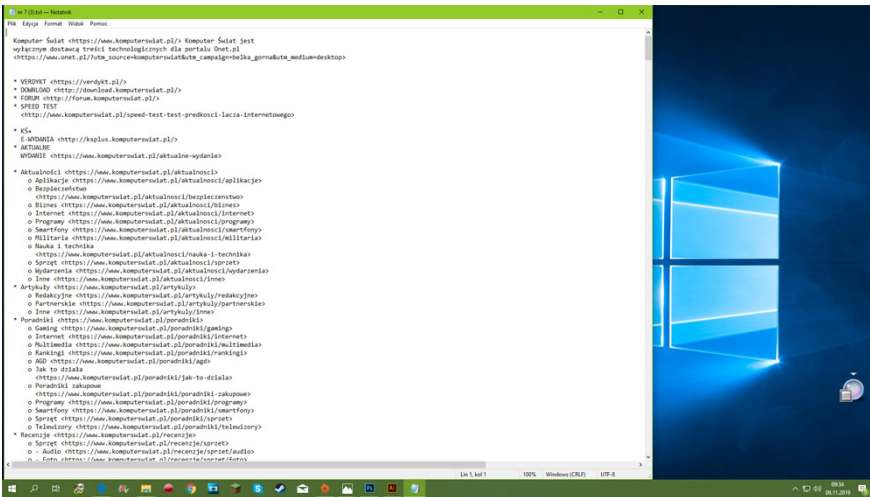


Fig 7. Screenshot. Text file (own source)

case, the HTML file may undergo additional modifications suggested by the browser, such as ‘zoom in’, in the third one, advanced edition in WordPad is possible (fig. 7).

When opening the code editor and source of the website using the interface of a web browser, we encounter a situation typical for ‘analogue culture’ – writing is both the element structuring and transferring the message.

Meanwhile, when contrasting the source code with the web page generated according to it, an important novelty transpires – functional and presentational subordination of linear syntax of the HTML to the CSS visual layout of the interface of the website (fig. 8). Additionally, every web page provides information on Web Accessibility (fig. 9).

What emerges is a functional form of identification, which within the digital environment works as a mutual reference of word and image. The difference between text and image is abolished in favor of: electronic writing of the image from the point of view of code generation and presentation and the image of text from the point of view of web browser showing web pages. The discussed situation once again shows that identification of word with image does not only function as the tension between visual and verbal order of communication, but rather stems from mathematical

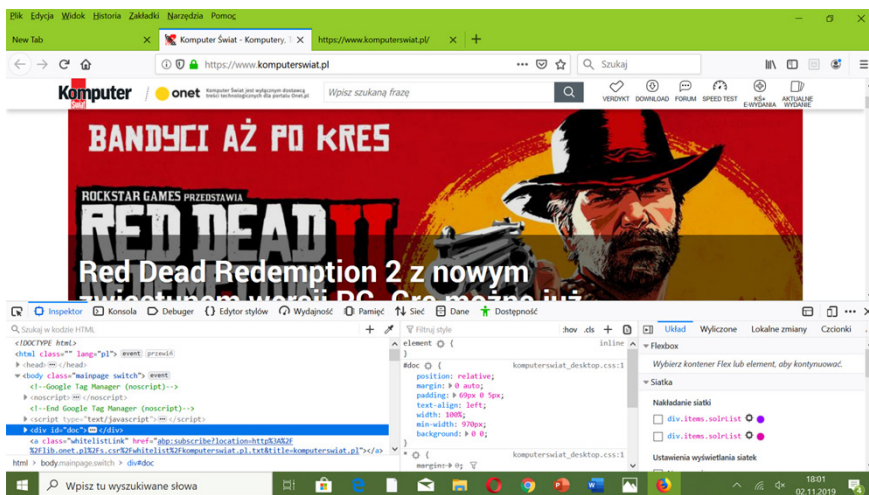


Fig. 8. Screenshot. The interface of a web browser Firefox, web page and an HTML document (own source)

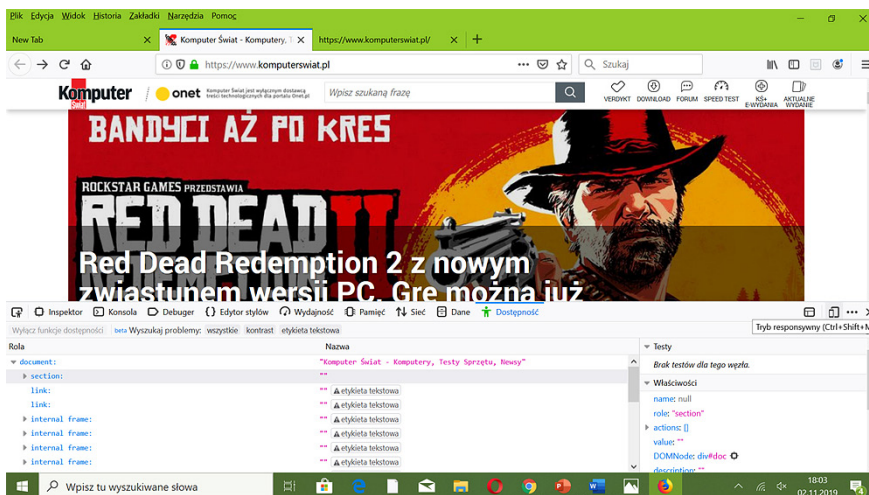


Fig. 9. Screenshot. The interface of a web browser Firefox, web page and Web Accessibility (own source)

procedures and technological solutions²³. Similar attempts at combining word and image, on the basis of deeper structure interconnecting them, have been apparent in culture for a long time, for instance in conceptual, concrete and formist poetry. They could never be realized, however, due to the lack of technologies enabling the transformation of word into image. Additionally, every web page provides tools for developers, which can be used by the administrators thereof.

Digital word and image have become on one hand identical, inseparably merged, interdependent, on the other hand – they still retain the right to be visually separated, which can be achieved by opening the source code of the website next to its layout. However, even then, while using a web browser and presenting both as images, it is rather problematic to perceive, collate and compare them using the methodological tools we know. The issue becomes even more apparent when we realize that an HTML document can only be saved as text, website as a text file, and its layout as an image in .png or .bmg (bitmap) file.

CONCLUSIONS

For the duality of form identifying word and image discussed above I am unable to provide an analogous prototype, for it is inherently connected to digital coding, dependent of the technological solutions. Picturisation creates not only static figures, it has also the potential for processuality. In the latter case, it is used for visualizing the progress of file-transfer, page loading, program opening, downloading e-mails, i.e. it is a proof of the actual operation of icons, in which ‘to see is to know,’ meaning that ‘to observe is to understand the operation of digital environment.’ The discussed procedure may provide the mass user with the sense of control over the visible layer of operating systems, and even over the textual applications and binary digital technology hidden beneath it. Obviously, that power is extremely illusory, as we wield it only from the level of programming languages and

²³ At this point another research limitation becomes apparent. This time it pertains to the presentation manner of the material of our comparative analysis. In a page of a printed publication it is only possible to present word/image forms according to the already known, analogue relations. The systems typical for digital messages requires a digital environment.

parts from the level of scripted languages, such as the HTML. The need for visualizations most likely results from our attachment to the world of images in which facts and processes do not exist unless they have a visual representation (see: Heidegger 1977; Celiński 2006). Thus, computer graphical interfaces become a both static and dynamic form, as well as the content of new, digital media, and set up another state for dissemination of image domination. The most significant change consists in perceiving the web not as a mere system of static data, but as a user-driven tool and an environment of communication. In the case of responsive web pages we are dealing with genuinely dynamic images-projection which variably adjust their content and form in order to 'reflect' the user's predilections, as well as to fit in with the specification of the device they are being displayed on.

Word and image, through being ascribed numerical values are easy to transform with the use of mathematical processes of addition, subtraction, etc. through the algorithms inherent in the programs. The processes of data transmission determine the character of the Internet as a medium. Web browser translates text – HTML code into image – a web page, while for the interested parties also to an image of a coding document and even developers' tools. What does not occur here however is the transformation of input data to any other sort of data, whether writing into images or the other way around. Both components can be identified with one another, but not replaced, they retain their right to be juxtaposed next to one another. At the current stage of technological development of web pages, the analogue difference between the word and image they are constituted by breaks down at the level of generating the digital message – the medium of the Internet, WWW applications, web pages, browsers. The 'material' identity of writing and image, understood as assigning numeric values to both, is reflected on the functional level, i.e. the level of the means of communication.

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Summary

The difference between word and image, known from the analogue culture, ‘breaks down’ at the level of generating digital transmission – in the Internet media, web applications, websites, web browsers. The suggested identity of the ‘material’ aspect of writing and image, defined as the assignment of digits to both, finds its consequences at the operational level, that is, in means of communication.

Keywords: medium, source code, website, writing/image, comparative studies, digital graphics, the iconification of writing, the literate image