

Review Article

On Defining Electronic Literature Within the Realm of Digital Art

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The paper explores changes in the way of writing, leading to transfer from paper-based to computer-mediated works, or a new form of literature – electronic literature. Created and performed on networked and programmable media, e-literature proceeded from imitation and transposition of print practices to a computer screen. Further authors began to incorporate into their works various sensory effects and combinations of different semiotic systems affordable for creative writing on computer. Elements of contemporary culture, such as digital arts, graphic design, computer games, films, animations, and other electronic visual and sound effects started to be included into works of e-literature, reflecting creative experiments with the net. As works of e-literature became hybrid by nature, composed of parts taken from diverse traditions and semiotic systems, the distinction of literary works from other forms of computer-mediated art was blurred. It resulted in the study of the phenomenon of intermediality in electronic literature. The very definition of electronic literature changed from “born-digital” literature to “the artistic engagement of digital media and language.” Due to the expansion of its borders, e-literature is currently viewed as a platform that offers various research perspectives, digital methods and creative forms. Based on the study of works of narrative hypertext fiction from the Electronic Literature Collection composed at Washington State University, the paper aims at drawing a demarcation line between literary works created on a new platform and other forms of computer-generated art by defining different functions intermediality serves in their composition.

Introduction

On Definition of Electronic Literature

Rapid evolution of modern technologies, which have changed the style of our lives and way of work, naturally affected the way of writing, leading to transfer from paper-based to computer-mediated works, which resulted in a new form of literature – electronic literature. According to the definition, given by electronic literature organization, electronic literature is a "work with an important literary aspect that takes advantage of the capabilities and contexts provided by the stand-alone or networked computer"^[1].

On the other hand, "digital" has become a meaningless attribute because nowadays almost all media are electronic and based on digital information processing^[2]. Hence, digital technologies are no longer the determining factor for electronic literature because in the age of the "post-digital" the language of digital technologies and network is a priori implied. Nowadays writers cannot do without some aspect of digital process in their work while composing, editing, or publishing their works. This presupposes that the very meaning of electronic literature has to be reconsidered. As reduction of electronic literature to a "text" would remove any distinction between digital and print literature, observation of development of electronic literature should imply consideration of both textuality and the mode of creation. Special emphasis should be made on the quality of work, as experiments with the net often make authors be carried away with the electronic aspect and the excitement of creation at the expense of merits of their works.

Based on its nature, a work of electronic literature should be viewed as a combined effort of programmers and writers on production and operation of their works. At the same time, although the field of computer art undergoes rapid transformation and is still in the state of formation, it is worthwhile to investigate whether literature, in the form of electronic literature continues to exist and how it differs from other forms of computer-mediated works of art. As it is impossible to describe all forms of electronic literature in one paper, the present paper is based on the study of narrative works of hypertext fiction, though some of the results seem to be relevant to all forms of electronic literature.

Discussion

Peculiarities of Electronic Literature

What makes electronic literature simultaneously similar to and distinct from previous forms of literature? To begin with, digitized and digital literature are not the same phenomenon. If digitized literature transfers the codex on a screen, in digital literature computer-driven transformations occur beyond the surface. The impact of the digital is embedded in the entire aesthetic configuration and reflected in the display. Hence, digitized print literature is not considered to be electronic literature, as “electronic literature is work that can only exist in the space for which it was developed, written and coded, that is the digital space, which, though commutative, depends on the technical affordances of the underlying system.”^[3]

The term *electronic literature* does not simply refer to a static text produced on digital media. Hayles^[4] defined a work of electronic literature as “a digital object created on a computer and meant to be read on a computer.” Its important feature is a code, which needs to be activated in order to read the text and appreciate its peculiarities. Nevertheless, the goal of the form remains consistent: to manipulate language, to transform the linguistic into the literary by means of computation.^[3]

In the paper “Hypertext and Creative Writing,” Bolter and Joyce^[5] described the mechanics of the literary hypertext, pointing to a new literary dimension in which authors can work: texts are not organized as strings of paragraphs, but evolve within created by the author textual space. Espen J. Aarseth’s^[6] cybertextuality points to another distinguishing feature of e-texts -- ergodicity. An ergodic text requires a nontrivial effort from the reader to traverse it. As digital literature is algorithmic, the affordances of the computer allow dynamical rendering of the story that may change depending on the way of reading. Hence, another distinguishing feature of electronic literature is nonlinearity of the text, its ability to vary, to produce different courses due to its linked structure. In such works the reader traverses literary fragments, known as lexias, through a variety of available paths. Though literature has always been textual, the computer provides an opportunity of a reciprocal textuality. A feedback loop^[7] between the reader and the text is one of the main distinguishing features of electronic fiction. All above-mentioned features: a code, ergodicity, nonlinearity of the text and a feedback loop are characteristic of narrative hypertexts.

Discussing the nature of electronic literature Heckman and O'Sullivan^[3] stress that electronic literature should be seen as a construction whose literary aesthetics emerge from computation—a system of multimodal potential with the word at its center. At present, due to its rapid development, electronic literature has amorphous nature, as for each trait that might be classified, a new form, or potential, emerges from previously unanticipated evolutions or juxtapositions. They note (Ibid., 6–7) that electronic literature has emerged from, and resides at the juncture between intermedial literary and computational, multimodal aesthetics and consistently relies on language and computation, which establishes meaningful rules that manipulate the language, sometimes based on reciprocal interaction with the reader. These rules shape the content, and the literary emerges simultaneously from the medium and content.

Variety of Forms of Electronic Literature

At present, composed at Washington State University, the Electronic Literature Collection consists of four volumes of works on electronic literature carried out by authors from all over the world. Volume 1 was released in 2006, Volume 2 in 2011, Volume 3 in 2016 and Volume 4 in 2022. Some works are defined, while others resist definition due to the fact that existing genre definitions were established for print literature.

The Electronic Literature Collection reflects the history of electronic literature that proceeded from imitation and transposition of print practices to a computer screen. For example, the first literary hypertext *afternoon, a story* by Michael Joyce^[5] used a computer screen as a page to write the text that consists of blocks, or “lexias” and electronic links connecting them. As most works of the first generation of hypertext fiction, it is written in Storyspace, the hypertext authoring programme.

In further works of hypertext fiction authors began to incorporate sensory effects and combinations of various semiotic systems affordable for creative writing on computer. The online sketch *Lasting Image* by Carolyn Guyer and Michael Joyce (2000) is an example of a hypertext fiction the gamble effect of which depends on browsing the screen in search of hidden links. By clicking on the arrows in the bottom right-hand corner of a screen, a reader moves from one colour picture and an episode to another. Some links appear on the pages in a form of visual signposts, others can be found by moving the cursor across the entire screen. Reading the sketch resembles looking through a collection of photographs of different places taken at different time and reading inscriptions that reflect associated with them recollections. That is the sketch is an early example of intermediality in electronic literature

that uses a combination of linguistic and visual semiotic systems, which likens it to an illustrated, printed text.

Another hypertext by Michael Joyce *Twelve Blue* (1996), reflects a flow of associational thinking, that is expressed by surfing the Web. Here the author uses a more elaborated way of combining linguistic and visual signs of these semiotic systems. The hypertext contains 96 spaces with 269 links. A left-hand column on the screen features coloured threads indicating links in the network of the StorySpace that pass through eight points on a grid. These threads correspond to narrative lines of the main characters. The reader moves on by clicking on the threads, or on hyperlinks within the text, which appears in a form of light blue segments on a larger, dark blue part of the screen on the right. Each page is named dividing the story into separate poetic fragments, each repeating the word "blue".

These works reflect first searches of possibilities for composing literary narrative texts on a new platform by one of the pioneers of hypertext fiction, a writer and theoretician of this new trend in literature. Discussion of all forms of narrative hypertexts in one paper is impossible, as each following work demonstrates boundless abilities of human mind and imagination.

With the development of more sophisticated multimedia applications, electronic literature evolved into a variety of increasingly syncretic forms. As the result, under the umbrella term of electronic literature come many forms: hypertexts, codeworks, network fiction, interactive fiction, literary games, augmented realities, digital poetry, installation pieces, locative narratives, generative art, etc. This incomplete list of the forms of electronic literature illustrates the diversity of the field and the wide range of aesthetic strategies to which authors resort while creating works of digital culture.

This variety of forms resulted from proliferation of new technologies and new modes of production and artistic expression, enabling incorporation of various sensory effects and combinations of semiotic systems into works of hypertext fiction, leading to creation of various types of intermedial works and the study of intermediality of electronic literature. In daring experiments with the Net, elements of various semiotic systems begin to acquire content-bearing character, and start to act as parts that have an equal role to elements of the linguistic system in transmitting a message, thus contributing to the creation of a new, hybrid forms of computer art.

With the move to the Web, authors start to use more fully its multi-modal capabilities, such as graphics, animation, colour, sound and a wide variety of navigation schemes and interface metaphors that de-emphasized the link as such. These works of *network fiction* "make use of hypertext

technology in order to create emergent and recombinatory narratives." ^[8] Works of Interactive fiction incorporate elements of games. Thus, along with the use of other techniques, they involve into action gestural semiotic system. For example, narrative hypertext *Living Will* (2012) by Mark C. Marino belongs to the genre of interactive fiction. In it the dying magnate Millhouse sets his four heirs in competition with each other to claim the most inheritance. The reader has to choose to play one of the heirs and try to accumulate the most part of the bequest.

Creation of literary works for tablets and smartphones, that require a touchscreen, added the third sense to the interaction between man and electronic media, thus activating three out of five basic human senses – sight, sound and touch. An example is *Upgrade Soul*, an interactive science fiction graphic novel by Ezra Clayton Daniels and Erik Loyer, that began as an app for iPhone and iPad in 2012 and was distributed serially until 2019. On the CAVE, a site for interactive literature, the action is performed in a three-dimensional space where users wear virtual reality goggles and operate with wands. These works "enact literature as a full-body experience that combines kinetic, haptic, proprioceptive and dimensional perceptions" ^[9] that are included into the composition and performance of the works. Thus, elements of gestural and spatial semiotic systems contribute to creation of even more complex, intermedial forms of computer art.

As Hansen ^[10] states, new media art opens up new avenues for our bodily as well as our intellectual engagement with artworks by "transforming haptic prosthetic function into the basis for a supplementary sensorimotor connection with the digital. In the process, it helps unpack what exactly is at stake in the shift from an ontology of images to an ontology of information, from a world calibrated to human sense ratios to a world that is...in some sense fundamentally heterogeneous to the human." ^[11]

In this connection Hayles ^[12] argues that regarding the text as an immaterial verbal construction reflects the Cartesian split between mind and body applied to the textual corpus, which separates into two fictional entities what is actually a dynamically interacting whole. Transfer from paper-based to electronic literature helps to bridge the gap between body and mind. As Hayles ^[9] maintains, "an essential component of coming to terms with the ethical implications of intelligent machines is recognizing the mutuality of our interactions with them, the complex dynamics through which they create us even as we create them."

Hence, the shift from paper-based literary works to computer-mediated ones not only brings about a change in the way texts are produced, but also the change in the way the human body behaves while interacting with them. As Adipurwawidina argues, the realization that technological transformations affect the behavior of humans and the human body prompts us to think about the extent to which we are separated from or linked to the technologies we develop, to think about the limits of being human, and begin to think about our being posthuman. In this connection Hayles^[13] remarks, that the posthuman indicates to a coupling of human and a technological device that is so intense and multifaceted, that it becomes impossible “to distinguish meaningfully between the biological organism and the informational circuits in which it is enmeshed.” Though the Electronic Literature Collection has already demonstrated some possibilities and limitations of digital technology, “we are still left with vast unexplored territory where the biological and biotic system interface with electronic informational circuits.”^[14]

Intermedial, “hybrid forms” of electronic literature activate different forms of human perception by inclusion of signs of all semiotic systems into electronic media, thus activating work of human senses while interacting with the Web. Synesthetic perception of such works serves the function of a merger between virtual and real worlds, as in the real world our perception of reality comes through our senses. That is, elements of all five main semiotic systems – linguistic, audio, visual, gestural and spatial start playing meaning bearing, constitutive role in creation of computer-mediated works of new art.

Multimodality and Intermediality of Electronic Literature

Electronic literature is multimodal due to a combination of modes of artistic expression, and intermedial, due to its resort to languages of different semiotic systems. Discussion of these characteristics will yield in better understanding of the nature of electronic literature.

Mode, as a form of representation, is a socially shaped and culturally given semiotic resource for expressing meaning. Examples of modes used in representation and communication include: writing, layout, gesture, speech, soundtrack, static image, moving image, music. In a multimodal work various expressive art forms are combined to produce meaning, and their aesthetic effect depends on the interplay between different representational modes. For instance, images and written and spoken word may be used to create an integrated picture of a fictional world.

The main modes of communication are expressed through semiotic resources (e.g. color, sound, image) that may be combined into a single, multimodal form. Resort to multiple modes of expression in electronic literature allows authors for more creativity and possibility to show depicted events from different points of views and to create an overall impression of a fictional world, simultaneously likening it to the real world.

The term *multimodality* is also used for a combination of multiple literacies within one medium. These modes, or multiple literacies, contribute to the process of creating and understanding of a composition and include: linguistic literacy -- the ability to communicate effectively through both written and spoken words, visual literacy -- the ability to create and interpret visual content, audio literacy -- the ability to create and interpret audio content, spatial literacy -- the ability to understand and interpret space and spatial relationships. Modern technological advances have also created the need for two more literacies: digital literacy -- the ability to use digital technologies and technological literacy -- the ability to use technology to solve problems and innovate. With this sense, multimodality refers to application of multiple literacies within one medium on the one hand, and contributes to an audience's understanding of a composition on the other.

Intermediality reveals another important trait in the evolution of electronic literature. Though different meanings of the polysemantic word “media” are often used interchangeably in the studies of intermedia, in the present paper, which aims at studying electronic narrative fiction and its place within digital art, the term *media* is used not as a material carrier of information, or a platform for creating and carrying a message, but as languages of artistic expression, semiotic systems (Also see a similar approach in: Ryan^{[15][16]}).

Both modes and media are expressed through the signs of the same semiotic systems: linguistic, audio, visual, gestural and spatial, as these systems are the only forms of expression, or languages through which humans can communicate. Therefore, relation between a mode and a medium may be seen in the following way: if modes constitute forms of representation, media are the means by which modes are expressed, they are their languages.

A broad understanding of media within the framework of intermedial studies was initiated by a Canadian scientist and publicist Marshall McLuhan^[17], who elaborated on the concept of media as an extension of the human body or thought, expanding its capabilities in communication with the outside world. McLuhan's concepts were further developed in the theory of intermediality, acquiring

the meaning of implication and hybridization of media. Hybridization implies a way of generating a new form as a result of the interaction of two or more media.

Some researchers maintain that the notion of *intermediality* stems from the concept of *intertextuality*. Expanding Bakhtin's dialogical principle, the authors of the concept of intertextuality assume that intertextuality is a property of any discourse, as every text is an intertext. Other texts, texts of the previous culture and texts of the contemporary culture, are present in it in more or less recognizable forms. Noted by Lotman^[18] multi-layered structure and semiotic heterogeneity of literary texts, their ability to enter into complex relationships with both the surrounding cultural context and the readers, reveal their ability not only to transmit, but also to transform, and most importantly, to generate new messages. That is, intermediality was formed at the intersection of two conceptual areas -- *intertextuality* and *interaction of arts*, or *interart*^[19].

However, as Haminova and Zilberman state^[20], intermediality cannot be reduced only to the problem of sources and influences, as it is rather a modification of various linguistic structures and forms that are included in a new linguistic and semantic context. Thus, intermediality is not just a dialogue of arts, but their translation. Translation in this case is understood as a metaphor denoting the process of interpretation. In contrast to the traditional understanding of translation of languages, formed within the same semiotic system, i.e. creating an equivalent of a given text, semiotic translation establishes a relationship of *conditional equivalence* between languages and involves a return not to the original text, but to a new text, which, according to Lotman^[18], corresponds to the mechanism of creative thinking.

In general sense, intermediality is understood as a special type of relationship between media, in which contacting media are not simply connected in a single synthetic space (which would be an example of multimediality), but are included in each other, crossing borders, exerting mutual influence, modifying and transforming each other^[21]. That is, the notion of intermediality defines interaction of sign systems (languages) of different arts that create the integrity of an artistic and aesthetic work^[22].

As Baetens and Martinez^[23] mention, medium theory has made it clear that each medium, be it verbal or nonverbal, is by definition plural. There are no "pure" media. In literary criticism^[24] a medium is regarded as a carrier of content, or a means of expression, in which the material-formal signifier indicates to the signified, and intermediality is viewed as the relationship between different arts and

media within one object, leading to their transformation and to the emergence of a new form of art, or mediation. The term *intermediality* is also used to denote the transparency of boundaries between different media^[25], their convergence^[26], leading to studies of intermedial relations between words, images, sound, and the convergence of films, television, radio, news reports, e-books, photography, etc. on the World Wide Web^[24].

That is, the term *intermediality* is used to define the relationships between autonomous media, as well as the internal plurality of each medium. Hence, the intermedial study of literature deals with the relationships between the literary text and its other forms of representation (e.g. the illustrations that accompany it), and also with the study of the literary as a heterogeneous material that conveys a more or less radical “semiotic rupture” within itself.^[23]

Ryan argues that the semiotic approach to media phenomena looks at the codes and sensory channels that support various media, distinguishing three broad media families: verbal, visual, and aural. They correspond to art types -- literature, painting, and music, but the three classes extend beyond the aesthetic use of signs.^[16] “The affordances of language, pictures, and music complement each other, and when they are used together in multichannel media, each of them builds a different facet of the total imaginative experience: language through its logic and its ability to model the human mind, pictures through their immersive spatiality, and music through its atmosphere-creating and emotional power.” (Ibid., 20–21)

Electronic media are characterized by intermediality, for “computational systems are capable of being creative, fed by emergent processes and by the very nature of computation and are capable of developing all types of creativity.”^[27] Any concrete media application – verbal or visual, haptic or disembodied, static or moving images, acoustic or silent, interactive or autonomous, multimedial or monomedial – is always embedded in a larger media context of several media.^[28] This integration of different kinds of media, which were previously supported by their own media-specific technologies, in a single digitized electronic space, makes multimediality and intermediality the new standard for creating works of computer art.^[28]

The phenomenon of *intermediality* is viewed as the result of complex principles of organization of a literary text, which borrows and assimilates the properties of texts from other types of art. As digital technology allows to transfer any medium to another medium, the fusion of different types of art, or media forms, such as digital art, graphic design, cartoons, animations, computer games and other

electronic sound and visual effects, that have historically developed independently, but are now combined within a single space, became a common practice of creating works of electronic literature, resulting in their intermediality.

As intermediality is to some extent characteristic for any work of art, for a transfer of intermedial relations to virtual space, i.e. to another platform, Bolter and Grusin^[29], introduced the term remediation. They argue that “all current media remediate,” by both paying tribute to, and rivaling with earlier media by appropriating and refashioning the representational practices of these older forms^[30]. Therefore, remediation can be viewed as a defining characteristic of the new digital media which opens a possibility for a simulated, “virtual” intermediality. As Rajewsky^[19] puts it, “digital media remediate remediation practices of earlier media, they remediate remediation.” And the study of intermediality, that has gained prominence in modern humanities due to the active development of digital culture, allows for systematical presentation of the complex processes of intersemiotic correlations that characterize works of electronic literature^[20].

Contrary to *intermediality*, *multimediality* is understood as interconnection of various functions which can be provided by media, e.g. texts, images, animations, graphics, simulations, etc. That is, the term *multimedia* denotes integration of multiple forms of content such as text, images, video, audio, and interactive elements into a single digital platform or application, resulting in a more immersive and engaging experience compared to traditional single-medium content. Brillenburg Wurth Kiene^[31] states that although the terms *multimediality* and *intermediality* are often used interchangeably, there is a significant difference between them, that is already evident from the prefixes *multi* (many) and *inter* (between). She gives five characteristics that can be attributed to digital multimedia (or ‘new media’) – integration, immersion, and narrativity (Ibid., 3):

***Integration:** the combining of art forms and technology into a hybrid form of expression.*

***Interactivity:** the ability of the user to manipulate and affect her experience of media directly, and to communicate with others through media.*

***Hypermedia:** the linking of separate media elements to one another to create a trail of personal associations.*

***Immersion:** the experience of entering into the simulation or suggestion of a three-dimensional environment.*

Narrativity: aesthetic and formal strategies that derive from above concepts, which result in nonlinear story forms and presentation (Packer and Jordan 2001: p. xxxv).

While intermedial art blends art forms to make them indistinguishable and indivisible, when different media are not merely combined, but welded into a hybrid that rewrites older versions of the media involved, *together-art* is what characterizes the digital multimedia. Painting, music or poetry are not fused, but put together while retaining their respective roles. Such combinations depend on the distinctness of separate media. It is not a transformation, but a combination of separate parts (Ibid., 6-7, 12).

Brillenburger Wurth Kiene^[31] quotes Peter Frank^[32] who likewise argues, that “multimedia works like (Wagnerian) opera do not stage a contamination and hybridization of different art forms/works, but rather consists of different medial forms that continue to function as separate and ‘coherent artistic phenomena’.” Though *multimediality* and *intermediality* are based on different correlations of media, and are distinct from each other, they are both used as means of composition of works of electronic literature.

Electronic Literature and Platform Studies

Due to the rapid evolution and transformation of the trend, defining types or genres of separate works of electronic literature is not an easy task, so up to now all literary works created on a computer have been attributed to it. As a result, some researchers started to view electronic literature not as literature, but as an umbrella term for a new platform allowing various forms of expression. As Pawlicka^[33] states, electronic literature is not a narrow field of literature within digital culture. It offers a new perspective on electronic literature, and is considered as a platform for digital research, textuality, art, and other forms of expression and experiments for writers, artists, designers and programmers. This multiplicity of forms of expression raise questions whether electronic literary works have any boundaries, have been transformed into new forms, or represent a new mode of expression. Similarly, Rettberg^[34] argues that if at the outset electronic literature was understood as born-digital literature, it is currently defined as “the artistic engagement of digital media and language,” something that encompasses various digital forms of expression. And due to the expansion of its theoretical and artistic borders, electronic literature may be viewed as a platform that offers various research perspectives, digital methods and creative forms.

Evolution of electronic literature goes in parallel with the evolution of new technologies that create possibility of new digital forms of expression and new forms of electronic literature. Defining their types is almost impossible as it seems that every new work produces its own new genre. The new platform challenges authors to experiment in creative writing and investigate new aesthetic forms. Consequently, rapid development of new digital technologies and affordances they provide for creative work mean that it is almost impossible not only to divide works according to genre, *but also to draw the line between electronic literature and computer-generated art*^[35].

That is, multimodality and intermediality of electronic literature naturally raise a question if all these works still belong to literature, or represent new, emerging forms of computer culture. As Hayles argues, multimodality of digital works of art challenges writers, users, and critics to combine diverse expertise to interpret and understand the aesthetic strategies and possibilities of electronic literature. However, “when a work is reconceived to take advantage of the behavioral, visual, and/or sonic capabilities of the Web, the result is not a Web “version” but a completely different artistic form that should be evaluated in its own terms with a critical approach appropriate to the specificity of the medium.” At present, “the computational media, which is intrinsic to electronic literature, together with compositional practices continue to evolve as the technology changes at a breathtaking speed, which makes it difficult to attribute and evaluate appropriately innovative works, in which human thinking and machine execution collaborate to produce literary works.”^[9]

As electronic literature undergoes rapid evolution and as yet resists standardization, it even creates difficulties for cataloguing works in electronic libraries. Pablo and Goicoechea^[36] describe difficulties in a special process of tagging (a tag is a descriptive label assigned to individual works in a database) for creating a database by forming sets for the texts in the collection. They postulate that the study of tagging practices applied to digital works will provide us with guidelines not only to describe texts of electronic literature, but also to demonstrate the wide variety of forms of literary texts.

Discussion of the future development of electronic literature, initiated by Andrew Gallix^[37], considers the possibility of e-literature being absorbed by digital art. This possibility is based on the fact that electronic text is more processual than print, it is performative by its nature. As Hayles^[38] argues, it means that electronic literature should be seen as ongoing, unfinished form of production which undergoes transformation and modification together with the development of technology and experiments with its affordances. This has led to considering electronic literature as a platform for digital research, textuality, art and other forms of expression.

According to Bogost and Montfort^[39], “platform studies investigate the relationship between the hardware and software design of computing systems and the creative works produced on those systems.” The word “platform,” when used in this sense, refers to devices, programs, tools, and computing systems, covering anything that is “the foundation of computational expression,” combining not only the categories of hardware and software, but also various actions, practices, and expressions that are connected by one vision. As Rettberg^[34] puts it: “Electronic literature projects are forms of creative expression, but they are also often experiments in the scientific sense.”

This means that electronic literature, if we use it as a generic term for all literary works created on a computer, expands its limits, going beyond issues of definition, structure, and poetics, and developing into something more than literature. Thus, electronic literature, as an umbrella term for all computer-mediated forms of art that include texts, begins to be considered as a platform of and for textual, artistic, and technological experiments and expressions.^[33]

On Distinction of Electronic Literature from Other Forms of Computer Art

Though the presence of the literary remains constant, the process of creating paper-based and electronic literary works is different. New technologies influence existing modes of expression giving rise to new literary forms, and the field is still undergoing evolution. Due to rapidly evolving digital aesthetics, electronic literature resists stable definition. Similarly, defining a place of electronic literature within the realm of computer art remains a task that needs special consideration. Does literature in the electronic form still exist, or has it been transformed into an amorphous category, a form of computer art? Though we must admit that it is too early to give definitions to all existing forms of computer art that are still in the process of formation (four decades of electronic literature is nothing compared to five centuries of print literature), yet observation makes it possible to notice some tendencies in its evolution. Though our research was limited to the study of narrative hypertexts, we consider the concept of intermediality and its different functions to be a relevant principle for delimitating a wide range of works of electronic literature, belonging to all generic classes of literature (epic, lyric and drama) from other forms of computer-generated art. In this respect two functions of intermediality – primary and complementary, employed in composition of works of narrative hypertext, may be suggested^[40]. In case of the primary function of intermediality, languages of at least two different semiotic systems equally participate in the creation of a content of a

literary work. In case of a complementary function of intermediality, languages, others than the language of the linguistic semiotic system, play an auxiliary role in the composition of a text.

For example, to decide on attributing a work of electronic literature to a genre of narrative fiction, we should consider its accepted properties. Firstly, common to all literary works property to evoke aesthetic experience through expressive use of language, and, secondly, the fact that though print literature existed as the only form of preserving and transmitting knowledge for five centuries, it had inherited ages long oral and written traditions of composing and telling stories of various genres, that are imprinted in texts and in our memory, and constitute the basis of our understanding of what literature is. Hence, a work may be qualified as a literary narrative text if it satisfies some accepted criteria, such as a title, upper and lower borders, conflict, plot, characters, setting, point of view and style. Both print and electronic narrative texts meet all these requirements, except for the lower border, which is often missing in hypertext fiction, though it often exists implicitly. However, this is the case with many experimental paper-based works as well. Another similarity of printed works of narrative fiction and works of narrative hypertext fiction is the same structure of plot lines^{[8][41][42]}.

Though possibilities of the new medium -- the Net, encourage writers to experiment in various ways with different kinds of writing, including combinations of various semiotic systems to create innovative works contributing to the development of computer culture, nevertheless, as our research has shown, after extensive experiments with the net, some authors begin to come back to composing their works either in the way peculiar to traditional literary works, though adding various compositional possibilities the net provides, while others continue to further experiment with syncretic, hybrid forms of computer art. As it seems, syncretic forms of computer-generated literary texts tend to split into subclasses differentiating literary works created on a new platform from those that represent hybrid forms, a combination of various semiotic systems, new, up to now unnamed plurimedial genres. That is, in spite of various differences, there are inevitable similarities in constructing narrative hypertexts and printed literary narratives. As Ryan^[43] argues, "Hypertext may or may not succeed in creating coherent, sustained narrative meaning on the macro or micro level, nor does it necessarily aim to create such a meaning, but when it does, it tells a story to the reader in the same diegetic mode as print novels or short stories. It just makes the recovery of narrative meaning more problematic than in the case of standard print novel (a category that, needless to say, excludes postmodern texts)."

Though electronic works of all kinds and genres are included together into the Four Volumes of Electronic Literature Collection composed at Washington State University (2006 - 2022) and demonstrate inventive experiments with the new media on a new platform, such works of narrative hypertext from the Fourth Volume as *My Dear CoUntess, a Letter to Lord Kelvin* by Danny Snelson^[44], *A Kiss* by Dan Waber^[45], *Novelling* by Will Luers, Hazel Smith and Roger Dear^[46], *Modern Ghost* by Artemio Morales^[47], *Writers Are Not Strangers* by Lynda Clark^[48], *The Data Souls* by David Thomas Henry Write^[49], *Subcutanean*, by Aaron A. Reed^[50], hypertext essay *The World Is Not Done Yet* by Annie Grosshans^[51] seem to contribute to the continuity of the tradition of narrative storytelling.^[40] They indicate to a return to traditional literary forms while including into their structure, besides affordable through techniques of the net possibilities of composition, combinations of several media, or semiotic systems, which contributes to intermedial character of these works. However, intermediality, that engenders amazing novelty and excitement of reading these texts, has a complementary, illustrative function that does not contribute to the construction of the plot, which unfolds through the linguistic system.

A hypertext narrative *My Dear CoUntess, a Letter to Lord Kelvin* by Danny Snelson^[44], is a re-composition in multiple colours of a letter of Alfred Jarry to Lord Kelvin in *Exploits and Opinions of Dr. Faustroll, Pataphysician*. Every word of the text is differently colour-coded and serves as an indicator to a reference, a link to a source text that it opens, which is accompanied by a video fragment. There are 6 colours and 12 tones. Words of the same colour bring to the relevant fragments of the source text. The author gives a list of authors and works from which excerpts are quoted in the accompanying section “about”. Colour and electronic way of accessing references are among the features that distinguish this hypertext from texts of printed literature.

The narrative hypertext *A Kiss* by Dan Waber^[45], as the prologue says, “... is a story that unfurls in many directions at once.” This told in the third person love story is about a happily married couple, their life, daily routine, relations, the house they live in and their memories. The image on the webpage depicts rays coming from all directions to the center, that symbolize biographical ruminations of the narrator, creating his self that is depicted as the center of the image. As we can guess, small squares at a different distance from the central square of the narrator, correlate with characters and episodes of life of the protagonist that had closer or more distant effect on the formation of his character and personality. The content page shows a list of meaningful for the protagonist events in what the author of the hypertext called “a love letter” in his statement, thus

giving another interpretation to the introductory image of the hypertext with a kiss as its central point.

The items on the content list are links that open a next list of titles for short episodes about the life and relations of the married couple, their children, house and memories about close relatives. Some episodes represent reminiscences of the past, or reflections about connected with them events. Some links bring back to the content page of the novel where by clicking on the following link you continue to read the story.

A narrative hypertext *Novelling*^[46], created by Will Luers, Hazel Smith and Roger Dear is a combination of text, image/picture, audio and video. *Novelling* is a story about two couples and their relations understood through suggested connections between them. The narrative parts, that appear on the screen every 30 seconds the interface changes, are displayed on the background of video depiction of the characters and sounds of music and the outer world. The episodes are not interconnected thematically, and seem to be fragments of thoughts, activities, recollections, aspirations, worries and uncertainties of the characters. Reading and writing are among main occupations of the characters, who are deeply immersed into their isolated inner worlds. This hypertext poses a question how our reading effects our thoughts, perception of the world and each other, and what and how we write. Video representation visualizes characters and their life, and inclusion of audio system into narration serves a connection between them and the outer world. Both visual and audio systems have a complementary function to the linguistic one, and objectify narration by the means of their expression.

Modern Ghost by Artemio Morales^[47] is a digital short story about a young boy who is remembering his beloved one. The story includes into its composition a text, images and audio. The audio recording of music accompanies the flow of the text and pictures that illustrate the scenes the boy recollects, likening the story to a remediated illustrated book. Both audio and visual systems have a complementary function to the printed text helping to vividly perceive the romantic memories of the protagonist.

Lynda Clark's *Writers Are Not Strangers*^[48] is an interactive short story created on a website as a type of generative narrative with elements of a literary game. Apocalyptic by content, it tells about Alix, a young writer, whose stories the reader can rate on a scale from 1 to 10. Interaction with this ChoiceScript work and reading comments allows readers to understand what it feels like to read other

people's rankings and assessment of one's writing and get a sense of what it is to be a contemporary writer when your worth is partially determined by such rankings.

The story has several beginnings, endings, and differences in subsequent re-readings according to choices made by the reader. The combination of the literary with structural and computational techniques of video games adds an element of excitement to the process of reading. However, addition of a gambling element to the text introduces no significant changes into the construction of the main plot line. Substitution of one word for another, or choices of options the reader makes, though introduce some differences into reading, do not affect the way narration unfolds. The story is an example of a hypertext that is created on the border of traditional storytelling and a computer game.

The Data Souls, a narrative hypertext by David Thomas Henry Write^[49] is a kind of science fiction set in a distant future. It is an imaginary story about the discovery by our descendants of seven rusted data storage devices, each defining different aspects of our contemporary reality. By clicking on avatars of ancient Egyptian gods, readers get access to the data fragments. This method is a metaphorical representation of the distance that separates us, with *"our reverence for quantified data and measuring even things that seem inimical to quantification, such as spirituality and social well-being,"* from our future descendants, as well as from our ancient Egyptian ancestors.

Parts of the text are transformed: some words are substituted by synonyms in other languages, on other pages some words just disappear leaving blank spaces. All pages are accompanied by beautiful illustration, some of the pictures move or rotate. Some pictures are downloadable. By clicking on the red arrows in the top right-hand corner we hear sounds associated with described information. However, all these examples of intermediality, have a complementary, illustrative function that does not contribute to the conveyance of the content, which unfolds through the linguistic system.

Subcutanean, a novel by Aaron A. Reed^[50], which is attributed to a non-interactive, generative, narrative genre, exists as both a printed book and an e-book. This electronic hypertext with a branching narrative is transformed into a linear text that may be printed out. As an e-book it includes audio and images besides the text, and allows possibilities of multiple possible permutations. It represents a mixture of several practices and genres of electronic and print literature, i.e. it serves as an example of both intermedial and transmedial work.

In the story a coming-of-age queer finds himself in a house similar to *House of Leaves* by Mark Z. Danielewski. Exploration of the basement of parallel realities with infinite variety of space

transformations and expansions symbolizes the protagonist's exploration of a mysterious labyrinthine space of fear and uncertainty of his own sub-consciousness.

Annie Grosshans's hypertext essay *The World Is Not Done Yet*^[51] was created on a website. It represents another example of intermedial work that incorporates a text, audio and images. In the Author's Statement Annie Grosshans describes *The World Is Not Done Yet* as a personal narrative in multiple voices woven from print practices and memories and by authorial choices determined by the opportunities of the cyber as a creative medium.

This digital-born "weblication" is a transitional hybrid that cannot be reproduced on a printed page. Parts of a text appear on pages as we read them. At the bottom of some pages are loudspeakers and by turning them on we hear the author's voice as she ruminates about the fate of our changing world. Buttons appear on some pages, and by pressing on them, we can read additional information or relevant quotations from various books. Chapbooks appear on the screen as images of their covers, and by scrolling on them, we can read short episodes written by Annie. However, all these examples of intermediality have a complementary function in relation to narration and correspond to illustrations and footnotes in a printed book.

Conclusion

Observation of evolution of narrative hypertext and its stable characteristics allows us to conclude that when a literary work is written on a digital medium by using mainly a linguistic semiotic system with inclusion of elements of other semiotic systems that play an auxiliary, complementary role in the composition of a text by visualizing, or otherwise objectifying content with the help of different forms of synesthesia, expressed through signs of others than linguistic semiotic system, which are used as a literary device, such literary works may be attributed to a traditional form of literature, or to its modified form – electronic literature. Our study of works of electronic literature was limited to narrative hypertexts, however it seems that the criteria of primary and complementary functions of intermediality may be used for distinguishing works of all generic types of literature created on a new platform from other aesthetic forms of computer art.

Though electronic literature in many ways differs from paper-based literature, and additional skills and techniques are required for its composition, the main principle remains unchanged. Monteiro and Carvalhais^[52] argue that "Telling stories is a crucial aspect of human existence. With the development

of computational systems, narratives are shaped by the technologies we have within our reach and the ways we use them. The computational systems expand the type of narratives that can be generated.” As Heckman and O’Sullivan^[3] state, “the miracle of electronic literature is not caused by the currency of computers; the miracle is that it is so thoroughly anticipated, suggesting that the literary perspective is a viral, feral, primordial tendency of human consciousness. Everyday linguistic practices reflect how human beings cannot live without contemplating, modifying, and sharing ideas. The literary mode seeks to represent and reproduce these practices in technical objects.”

Zuern^[11] expresses a similar idea speaking about powerful confluence of literate practices and emergent technologies that continues to inspire optimism in all of us, “who believe that reading still matters, that new technologies for the display and transformation of written texts allow to develop forms of digital literature that will matter as much, though perhaps in different ways and for different audiences, as have the dominant print-based forms of literary expression whose cultural prestige may now be on the wane.” Annie Grosshans^[51] makes a similar point on the continuity of literary tradition: “the Cyber, by promising to broaden our mind through interconnection with the screen, releases us from the misleading idea that books equal literacy. Instead of paper, we now have discs of memory. But that does not mean that we are released from learning to read meaning. In fact, the feeling of responsibility is deepening as we try to comprehend what it means to be a literate being.”

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