

Interactivity and Reception. The Question of Hypermedial, Geo-Spatial and Augmented Literature *

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ABSTRACT

This article looks at the topic of hypermedia and geo-spatial and augmented literature from five angles. Firstly, it analyses the context where these phenomena first appeared, the New Media. Secondly, it presents the most important contemporary theories on the topic proposed by Lev Manovich, Stephen Wilson, Ronald T. Azuma and others. Thirdly, it discusses the issue of hypertext as defined by Ted Nelson, Roland Barthes, Charlie Green and George Landow. Fourthly, it examines the paradox of the limited appeal of hypertext and the simultaneous huge impact of hypermedia literature on readers. Finally, this article examines some examples of multimedia and geo-spatial and augmented literature. The conclusion of the article offers a way of approaching New Media literary practices.

Perhaps two of the most important yet underrated changes that literature has undergone in recent decades have been the hyper-textualization and hyper-medialization processes, which produced the emergence of text, picture, sound and video. However, even after the integration of World Wide Web and digital devices into everyday life (ubiquitous computing) and art, the current debates in the literature still seem to focus mostly on the juxtaposition of paper and screen and on the issues of reading from digital displays. Not enough attention is given to the complexity and visual nature of hypermedia works.

We are witness to significant changes from the standpoint of both production and reception if we examine present developments with an eye towards the written page. The starting point of these developments is a media revolution. From afar, we first find literary text. However, upon arriving there, we can say that today the effect of media convergence is arguably not only characterized by the fact that its different content (newspapers, television, radio, movies, databases) is transmitted by the same digital channel and is accessible on multiple screens. Media convergence is also happening with formerly hard to integrate artistic forms. The transmission effect of digitization and convergence is content interwoven with hypertext and links. Its nature means the text forms a seamless whole with pictures, video and sound. Early, exclu-

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sively hypertextual works created significant difficulties for those accustomed to reading printed text on paper. The reason for this is that hypermedial works are brought to life by interaction, and this kind of active participation on the part of the reader/user assumes a level of activity not common in the context of the written text and at first left no space for contemplation. The process of interpretation is replaced by the wish to understand the electronic context's nature and working mechanisms. Instead of in-depth reading, attention was at first given to the technical solutions (clicking, wondering which links have not been followed). Now, it seems we are past the debates about reading text on screens and about authorship, and we can concentrate on the nature of these works. While several forms of contemporary electronic literature exist, in our article we discuss theoretical and practical questions about hypertextual literary products starting with hypermedia through geospatial literature ending with augmented works. The direct link between hypertext and these forms is that their reception requires the highest level of interactivity from the reader/user. And in our view that interactivity is the hallmark of most the electronic artwork.¹

LITERARY TEXT AND NEW MEDIA

(New) Media art involves the convergence of old narratives and new technologies. Its theory includes several ways of exploring the technology and aesthetics of emerging tools and standards, such as videos, computers, mobile devices, internet, software, code, computer games, streaming and sound production devices (media art issues). Manovich in his study does what others, for example Dewar have done before: he draws a parallel between the printing press and internet, and argues that the printing press had a radical and revolutionary impact on culture and similarly, today, due to the internet, a media revolution is on its way. He states that the revolution is much more profound than the previous ones as initial effects are only starting to be seen. "Computer media revolution affects all stages of communication, including acquisition, manipulating, storage and distribution; it also affects all types of media – text, still images, moving images, sound, and spatial constructions." (Manovich, 19). At this point we agree with Manovich but have to add that introduction of printing press had also a radical impact on art, for example supported the spread of renaissance.

We can speak of a new media with the integration of internet and digital communication technology into media processes. Lev Manovich took a stand in favour of this term. In *The Language of New Media*, the American media researcher wrote of the new media as the coming together of two, earlier, distinctive, historical developments: information technology and rudimentary media technology. According to Manovich, the new media makes the digitalization and manipulation of pictures, video, sound and text possible. Charlie Gere's book *Art, Time and Technology* is also pertinent to this theme. Throughout, Gere is concerned with art's role in digital forms in real time. These forms constitute information, telecommunication and media channels, which are already fully integrated in the lives of everyday users, and which play an ever-increasing role in them. Today's digital culture, or to use another term, "techno"-culture, bases itself on these real time computer systems.

Real time presents itself in the immediate desire to reconnect, which the internet

and social media make possible. Looking side-by-side at the opinions of Manovich and Gere, one might ask whether the real time experience created by the internet is not extinguished (with a little exaggeration) by the fact that it never forgets, and it stores everything automatically and instinctively thanks to its ever-increasing capacity, so that everyone can view these sites over and over? A basic tenant of performance art, which in contrast to fine arts allows a person emotionally to experience set pieces, is that real time is transformed with digital recording, with the fact that playback can occur anywhere and at any time. Nowadays theatre, song, dance and instrumental performances have also found outlets in the new media. By definition, performance art involves constant reinterpretation and participation. And new media can allow users to interact and collaborate with each other in a (social) media dialogue as creators of user-generated content.

There are some critics of new media as well. Jean Baudrillard states that our reality is increasingly uncertain, that it is practically an illusion, because our world is made up of models called simulations, which destroy and then replace reality. Digital media plays a key role in this process. (Baudrillard 166, 168)

In the present, a digital picture's esthetic, semiotic and art historical aspects are relevant first and foremost. It is completely of secondary importance whether or not a digital interface conveys these aspects. What is more, on a computational level, the picture is just one file among many that can be similarly converted to binary code, as can any neighbouring file. Therefore, text, picture, sound and video are simultaneously part of cultural and computer interaction, and are transmitted via different interpretive and representational channels (Dragon 67-68).

NEW TECHNOLOGIES AND THEORIES

The first generation of theorists (Ted Nelson, George Landow, Ian Feldman), alongside Jay David Bolter, Stephen Wilson, Oliver Grau, Charlie Gere, Armin Medosch, Rudolf Frieling, Dieter Daniels, Ronald T. Azuma and the aforementioned Lev Manovich set the greater part of the referential basis for the debates surrounding the new media.

Wilson inquires: “(w)hat kinds of relationships are possible among art, scientific inquiry, and technological innovation?” (3) and answers the question at the same time by saying that “(f)ields such as computer graphics, computer animation, 3-D modeling, digital video, interactive multimedia, and Web art, which were revolutionary a few years ago, have become part of the mainstream” (10). Soon the technologies will be integrated into commercial software and media production, meaning more and more people will assimilate this artistic experimentation. This statement is significant, for when Eastgate published the first hypertext literature using the Storyspace software program for creating, editing, and reading hypertext fiction in the mid 1980s, none of the integration mentioned was yet apparent. This could be one of the reasons why the first wave of hypertext literature only had a minor impact on both readers and theorists. In our article we intend to discuss one of the key points of the latest “breakthrough”: the incorporation of various forms of hypertext and multimedia into literary works.

The critic Shanken argues that: “(a)lthough there has been important scholarship on art and technology, there is no comprehensive technological history of art, as there are feminist and Marxist histories of art, for example.” He questions if it is possible for: “...similarities and differences, continuities and discontinuities” to be “...mapped onto the use of technology for artistic purposes throughout the history of art?” (Shanken 2).

Significant research studies in Central Europe have followed these precedents. In 2012 the Slovak *V sieti strednej Európy: nielen o elektronickej literatúre* appeared while earlier in 2004/3 an issue of the Hungarian publication Helikon dealt with the topic of electronic literature and hypertextuality. Concurrently, theorists in Asia, mostly in Korea, turned their attention towards the issue of hypertext. Important studies such as *E-book and Internet Writing's Impact on Literature* (Shin), *New Hypertext Writing: about Digital Culture Theory* (Shim and Yun), *A Study on Hypertext issues in Korean Modern Poetry* (Lee), and *Recomposition of History in Electronic Literature* (Han) saw the light of day. In Europe ELMCIP involves seven European academic research partners and one non-academic partner who are investigating the electronic literature community in Europe as a model of networked creativity and innovation in practice. ELMCIP is also intended to further research electronic literature and practice in Europe. One of the contributors of ELMCIP, Jill Walker Rettberg, published a bibliographical study on electronic literature and hypertext called *Blogging and Digital Culture, Play, and Identity*. She examined doctoral dissertations dealing with hypertext over the last ten years and the bibliographies contained therein. Her conclusions centre on the topic's unplumbed nature. She digitally combed through international freely-accessible doctoral dissertation databases and used many key words relating to the subject. Her efforts produced only fifty-six studies. Thus, we can provisionally conclude that digital and hypertextual discourse is relatively unexamined, despite the fact that the new medium has working in its favour a digitalized written landscape which reaches recipients on mobile devices.

WRITING INTERWOVEN WITH LINKS—HYPertext

At this stage of our article we need a short discussion of what constitutes the nature of creative context for studying multimedia literary works that appear on mobile devices. With the spread of information technology a fundamental shift occurred in the relationship between reader and text. In other words, the text, or the act of creating writing, diverged once and for all from the customs which were characteristic during the pre-printing and post-Gutenberg phases. It is not only formal, aesthetic or potential technical changes that have taken place, but rather fundamental, structural, perspective-altering medium and technological milestones.

The computer scientist Ted Nelson was the first person to coin the concept and word ‘hypertext’ in 1965. He defines “hyper” as “extended, generalized, and multidimensional” (Nelson, “A Conceptual Framework for Man-Machine Everything” 22). His idea was to organize text in such a way that the reader could choose the sequence of reading rather than just to follow the sequence laid down by the author. The history of hypertext fiction goes back as far as 1987, when *Afternoon, A Story*, by Michael

Joyce was first published by Eastgate systems. The works were produced with the help of Storyspace, a hypertext program. Some other well-known and oft-discussed examples of hypertext fiction created by Eastgate systems were *Victory Garden* and *Patchwork Girl*.

With the appearance of the program hypertext literature quickly became an important subject for discourse, but only for a very short span of time. “After the publication of Afternoon, hypertext gathered a lot of interest both aesthetically as well as in theory. This led to an increase in the number of prominent authors and literary scholars such as Robert Coover, George P. Landow, Jay David Bolter and N. Katherine Hayles who began to write works of hypertext fiction” (UK Essays).

We must also discuss the theory behind link-integrated text. Since hypertext does not conform to strict rules, a situation has arisen whereby certain forms utilized in practise can be used in opposition to established parameters. Attempts at definition take as a common starting point that in a digital environment anyone can in theory become an author of hypertextual works thanks to the fact that the content can be simultaneously read and written. A consequence of the transformation of traditional publication norms and their cultural hierarchy is that the recipient himself can publish works, or can attach his work to that of others.

Hypertext is such that it contains links and exists most often in digital format. It diverges from linear writing, contains detours on account of hyper-referentiality and offers the reader the opportunity to go elsewhere, while at the same time inviting interactive engagement. If hypertext is non-linear, non-sequential writing then it is not pre-determined how its constituent sections follow one another in the course of reading. Text A may follow B or C; we can skip from B to D and E, from C to E and then F and so on. The text's authors provided the sequential order, but the reader may decide between divergent readership paths. Generally, then, it is senseless to speak of the beginning, end or even the chapters of a work of hypertext. Hypertexts exist with few and also with multiple opportunities for the reader to jump from one spot to another or to follow various readership directions. Each reader may decide upon a different path. Working with this definition, we can see that in traditional writing such as footnotes/endnotes, encyclopaedias and adventure novels, where the reader can choose his own course, or even with quotations and intertext, some of the attributes of hypertext do apply.

Other hypertext definitions point to referential methods. They note that the hyperlink is a tool and method connecting the basics and objectives of hypertext structures. A computer program is needed for comprehension based on technological parameters. The link facility has given us much more than the attachment of mere odds and ends. It permits fully non-sequential writing, or hypertext. This simple facility - the jump-link capability - leads immediately to all sorts of new text forms [...] for fiction, for hyper poetry. (Nelson, “From Literary Machines – Proposal for a Universal Electronic Publishing System and Archive” 452–453)

As hypertext loosens previous norms related to writing, publication, editing and reading, so too does the new media transform the functions and roles of artist, exhibition space and curator. Context makes it possible for the consumer to become the

writer, whose ideas can immediately be uploaded onto the internet. As an online curator he may put into his collection artistic works which are currently accessible on the internet as he sees fit, and he may share these with his social networks. Hypertext turns the reader into writer and solves Barthes' quandary: "... because the goal of literary work (of literatureas work) is to make the reader no longer a consumer, but a producer of the text." (Barthes 4) In response to this Landon argues that hypertext weakens the boundaries between reader and writer and this way it represents another quality of Barthes's ideal text (Landon 5).

Green draws technological and historical parallels and points to a strong relationship between narrative style and the medium's technical characteristics. Green believes film and television have affected novelists as television shaped the fiction of writers in the 1980s and 1990s. He goes back all the way to the 1930s, when people noted that John Dos Passos was heavily influenced by new technologies and their manifestations, such as the quick cuts of cinema and the headline style of newspapers. Fascinated by them, he attempted to capture the novelties both in the content and form of his novels. So it may be safe to say that new media and hypertext will rapidly impact traditional storytelling. We can presume New Media forms like gaming will affect storytelling in the future. The first marks of this, argues Green, can be witnessed in the genre known as hypertext. Its peak was the late 90s and again early in 21st century.

... it was mostly done in standalone experimental fiction published by Eastgate Publishers. The first thing this did was turn narrative into a non-linear format so that the links took you to one place after another. In the best of them, the story had no beginning and no end. It had an entry point, and you could stop whenever you wanted. It tried to create that effect of an infinite text. (Greene)

At the same time the above mentioned firm relationship between narrative style and in our case the hypertext's characteristics brings in focus the convergence between mediums.

THE FAILURE TO READ HYPERTEXTUAL WORKS

If we speak about the difficult reception of hypertextual fiction, we must address a debate that has already been put to rest.² From the standpoint of our article, it is important that the internet is not only hypertextual. Restricting ourselves to the text we have a hypermedial context too, because the starting and terminating places of the links may also contain video and sound in addition to writing. Therefore we use the term hypermedia to describe hypertext which uses visual, video or musical components to form a non-sequential whole with the help of hyperlinks. In this definition we also include interactive online hypermedia webpages and works which make use of augmented reality technology.

At this stage it is appropriate to note that the discussions about the new hyper-, multi- and intermedia have to take into account communication and media studies, computer science and our theoretical and practical understanding of visual culture. There is a vast storehouse of technical instruments for new media. Screen and software are now complimentary to paper, pencils and brushes. Video games, digital maps,

CCTV web cameras, cell phones and GPS have become artistic tools. Despite the fact that the technology which drives these devices is perpetually changing, and is constantly being transformed, their use as artistic instruments remains unaffected. They are in essence not conditioned by technological constraints.

A significant number of researchers stopped drawing distinctions between hypertext and hypermedia after the digital picture transformation of the early 2000s. The reason was that text, picture, sound and video appeared indivisible from their web-linked digital context. Landow writes of this change in the following manner: “Since hypertext, which links one passage of verbal discourse to images, maps, diagrams, and sounds as easily as to another verbal passage, expands the notion of text beyond the solely verbal, I do not distinguish between hypertext and hypermedia” (Landow 3). This barrier wouldn’t have been breached if it wasn’t for high definition displays and enhanced usability of hypertext works due to improved graphics.

The main obstacle hindering the popularity of early hypertext literary writing was difficulty accepting the new art form and being able to enjoy it. A lack of critical theory and obstacles posed by reading from screens were also disadvantageous. The first attempts at hypertext literature seemed more conducive to displaying ideas and short associative sequences because of hypertext’s characteristic linkage structure (Son, Park and Kim 233).

John Miller wrote: “(h)yperfiction, ironically, looked good on paper.” In reality, there are far more published studies centred on hypertext than there are actual hypertext works of hypertext fiction. Miller thought that “(i)n the context of postmodern narrative theories and experiments, the advent of electronic hyperfiction stirred excitement among both authors and critics, who saw in electronic texts a medium that might allow the realization of a more interactive, reader-centered experience of narrative fiction.” (Miller “Why Hiperfiction didn’t work”) What is more, many people even believed they were seeing hypertext’s potential to transform reading habits.

Hypermedia works are distinguished by interactivity. They demand active participation from the reader/user while perusing content onscreen, but total absorption is all but impossible. Instead of possibly analysing the message, the user tries to understand the technical mechanics behind it. If critical reading occurs, the reader tends to lose herself in the process. During this time, narrative techniques do not factor into play. In the case of hypermedia, these narrative techniques denote real technical solutions (links, clicking).

A direct consequence of the lack of in-depth reading is that in the beginning hypermedia webpages (and this tendency may be demonstrated in the present as well) steered the reader towards the medium’s novelty, towards the possibilities contained therein or even towards a critical appraisal of the user’s own enthusiasm. Thus the medium, which we have identified as link-strewn hypermedia, did not become one with the message, but remained permanently visible on the surface.

THE RISE OF HYPERMEDIA AND THE APPEARANCE OF THE NEW PUBLIC

Basic pragmatic considerations played a part in second generation electronic, hypertext literature's ability to reach more receptive users. Screen accessibility of computers and mobile devices improved and their usability became dramatically enhanced. These changes ended the alienation users experienced earlier with practical receptivity, and took a pictorial turn in the digital environment. With the help of the new devices electronic, hypertextual literature became multimedia-based and interactive. When the user clicks on a picture or link, or touches these things, a process begins which leads to another webpage that may start a video or bring forth text. It is this process which characterizes interactivity in a multimedia context.

Up to this point in time, ordinary users have called clicking the process of working through a text via links. With the appearance of touch screen technology, putting finger to screen has also made interaction possible. Lev Manovich wrote the following about the transformation of interactive traditions: "(b)efore we would look at an image and mentally follow our own private associations to other images. [...] Now interactive media asks us to click on a highlighted sentences (sic) to go to another sentence. In short, we are asked to follow pre-programmed, objectively-existing associations" (45).

Reading via screens gained new popularity because of the development of better forms of interactivity. The appearance of augmented reality played its part in this transformation, as well as such practical considerations as the exponential growth in the speed of digital devices and the ability of devices and screens to converge on real-time images.

BETWEEN PAGE AND SCREEN – THE AUGMENTED BOOK

We will now attempt to examine the confluence of the real and virtual worlds, or in other words, the new phenomenon of the merging of reality and computer-generated content. We are looking at augmented (enhanced) reality and one way of understanding its relevant discourse. Ronald Azuma first coined the term in his writing *Survey of Augmented Reality* (355). The term means that with the help of computers or screens consumers can access virtual images in real time as if they were part and parcel of the real world. One question to keep in the back of one's mind is: how do computer applications and artistic works "function" when they rely on augmented reality?

It is important to stress that we have to thank hypertext, which lends form to associations, for serving as a fundamental precondition for the development of augmented reality. Another precondition for the formation of augmented reality was organized informational pathways (text, pictures, sound and the collection of moving images, and the databases pertaining to them) which fills the layers with objects.

An example of convergence between printed book and the screen is the volume *Between Page and Screen*. Its writer is the poet Amaranth Borsuk, and Brad Brouse provided programming assistance. The printed story does not contain writing, only markers, which contain instructions for computer and web camera use, which are in

turn needed to access the text. Having accepted the work as a form of augmented reality, the reader can only read the text on a screen, while simultaneously viewing his own reflection. However, the perceived text is not static but changing, assuming varying forms along the way. The story unfolds onscreen of the correspondence between P and S, and the conflicts within their relationship fuel the plot.

The positive reception of *Between Page and Screen* was significant, due to the fact that it failed to contain a single, printed alphabetical letter. For example, in Japan, it was on the list of best selling English-language books. This instance is also noteworthy because a book containing only symbols had a universal appeal. Deciphering the symbols involves a type of agreement that makes it possible for the utilized computer system to detect the necessary language version. This work may be done by a translator (a person), or later on by translation software that is able to handle large amounts of semantic data. The technology incorporated in the *Between Page and Screen* volume occasioned a serious debate relating to the augmented literature phenomenon. Aside from poetic and technological considerations, those relating to the new media, visual communication and the future of the book itself all received due notice.

WE TELL STORIES

The editors behind Penguin Books decided to take a paradigm-altering step when they brought into being the Wetellstories.co.uk homepage (WTS).³ Here, internet communication and media forms become part of the body of the work. On the website six works appeared: Charles Cumming's *The 21 Steps*, Toby Litt's *Slice*, Kevin Brooks' *Fairy Tales*, Nicci French's *Your Place and Mine*, Matt Mason's *Hard Times* and Mohsin Hamid's *The (Former) General*. Each was based on the rewriting of a classic work, and drew from various online communication and media forms, taking due advantage of their unique attributes. These works do not exist in printed form, and they are freely accessible to everyone on the internet.

The six works that appeared on the WTS webpage represent a new chapter in the history of hypertext writing. In contrast to the earlier, static, individual homepages, these pieces are found in a Web 2.0 environment. Above all, they base themselves on those internet services which help users to produce their own content together and to share information.

In the We Tell Stories project perhaps the geo-locating narrative using maps is most reflective of present day. It literally put the story on the map in the sense of Web 2.0 technology. Charles Cumming integrates the characteristics of the hypermedia environment. He tells the story *21 Steps* with the help of Google Maps, which allow him visually to draw the territory on a map. Meanwhile, for instance, Toby Litt's creation, *Slice*, involves two parallel blog entries that are completed with pictorially-embellished Twitter references. It is important to note that in the two online forms mentioned above service providers only produce a framework. Here, users now generate the content. They share it, and comment on it.

Keeping in mind our understanding of the characteristic reception of earlier hypertext, it is worthwhile to ask: how do the Digital Fiction pages Penguin created differ from earlier hypertextual experiments? What possibilities are contained within

Web 2.0 communication and media forms as text transmitters? To what degree does the reader become a writer on account of the peculiarities of the conveying medium? Finally, how do these computer applications *function*? The well thought-out visual (multimedia) design of the WTS homepage makes sure to take into account hypertext reading habits. Meeting of form and content allows for the best realization of possibilities and for the creation of such pages where users can experience the joys of hypertext. WTS opposes hypertext that hinders critical analysis, which does not assist the reader, or does not guarantee a directional orientation, and where the reader merely encounters the text, but later has little memory of the fact. We can see that the WTS pieces contain significant visual elements even with their restriction to short, minimalistic information transmission-style writing.

Charles Cumming's detective story, *The 21 Steps*, is a reimagining of *The 39 Steps* by John Buchan, and its programming onto the surface of Google Maps. The first person narrative structure makes it apparent that the reader inhabits the role of narrator and it is his job to solve a mystery. The events of the plot begin in London, and our path constantly unfolds on Google Maps' excellent quality street maps. Continuous zooming in and out provides perspective. The narrator is as stereotypically tight-lipped as he tends to be in detective stories. Finally, the process of receptivity towards the story is most similar to that of a computer game, where visual elements and a relatively minimalized storyline dominate.

Toby Litt's *Slice* rewrites M.R. James' ghost story *The Haunted Doll's House*. The story is very dense. There are four narratives: the blogs of Slice and his parents and perusable notes from a Twitter microblog. *Slice* provides readers with multiple reading options. A reader can decide to read one day's events in parallel fashion, or conversely, one individual blog at a time. The language of the text is not over complicated, due to the nature of the medium. The text's second major quality, namely its denseness, is also tied to the actual medium's formal constraints. The forms and dénouements of the two blogs do not differ from ordinary personal or thematic blogs. Pictures accentuate the remarks of Slice and his parents. Readers, in turn, can add text to the original writing. They add to the story, become writers themselves, and in the process a constantly changing story takes shape.

It is a generally accepted fact that remix fan fiction is a fundamental part of the digital cultural narrative. During the creative process the writer has in front of her the original. She then simplifies this original product or alters it in a particular way. The WTS writers, editors and graphic artists, whose roles are very important, did what pioneers of popular culture often do. They encoded the desired response and readers' reactions into the text when they choose a successful detective story, ghost story, diary or fairy tale as the basis for remix fiction. We may conclude therefore, that the greatest obstacles preventing popular reading of hypertext literature were readership reluctance to accept these works and difficulties associated with critical analysis.

GEO-SPATIAL LITERATURE – JOYCEWAYS AND OTTLIK WALKS

The first thing to note is that media convergence has made it possible for readers to access earlier printed texts on mobile communicative devices. The internet, GPS and digital pin-pointing instruments allow readers to take walks along the paths of well-known locations lifted from the pages of literary texts. The goal of the undertaking is that with the aid of a mobile device and this particular application, the reader/user takes a directed walk and experiences the real settings referenced within a fictional work. During the journey, the mobile communication device locates the place in question and offers the user the option to read the fictional passages pertinent to the area or to listen to them in audiobook form. In this way, the reader can travel through fictional forests and cities and can juxtapose the impressive images of the novel with the present-day appearance of these settings.

For there to be heightened receptivity to such experiences, the user has to have a good time. Certain technical requirements are necessary for this outcome to happen. User displays are so sophisticated that the human eye cannot distinguish between pixel sizes, so the virtual images seem real. The idea for walking in literature's footsteps came about as a result of traditional publishing companies' collaboration with museums, universities and colleges and software-development firms.

The many references to Dublin in James Joyce's *Ulysses* are well known, and in Hungarian culture the same is true concerning references to Budapest in Géza Ottlik's novel *Hajnali Háztetők* (Roofs at Dawn). In both cases, applications have now exploited this. The JoyceWays application leads the reader to over 100 places and meeting sites in Dublin which Joyce mentioned in *Ulysses*. All the while, one can hear the work's narration and scholars' critical assessments. This project began with a seminar at Boston College and sought to diagram the real environment of the novel's stream-of-consciousness writing style. Online maps, GPS, and period pictures and advertisements play an important part in bringing the script to "life".

Global positioning and locating technology is also the foundation for the Hajnali Háztetők application. The application, based on the Ottlik short novel, takes a 1938 map as a way into the piece. Pictures, films and newspaper publications from the time of the novel appear superimposed on the street scene of the present. Using the given GPS coordinates lets the user play the application's audio-visual content. Using integrated mobile content technology, the reading pathway begins in Budapest at Mechwart Park and finishes at the Petőfi Literary Museum.

CONCLUSION

This article has developed a set of theoretical lenses to help understand hypermedia, augmented book and geo-spatial literature as literary phenomena. We argue that receptivity towards hypermedia works is not restricted merely to the act of reading, which countless readers involuntarily compare anyway to the experience of reading a printed book. We acknowledge that media convergence created a situation whereby one work may contain text, picture, sound and video and still remain a literary one. We believe that it can only "work" if it stimulates one's senses on multiple levels, has a good usability factor and requires interaction from the reader/user. At the same

time, hypermedia, for those readers who have been socialized in the vicinity of the new digital devices, is already a familiar medium. We hope that in our study we shed some light on the fact that text, pictures, sound and video together in one document can mean a new narrative among existing art forms. This new art form both deserves and receives its place alongside literary studies, visual arts and media studies discourses, according to its very nature. Investigating the connections between hypermedia and these more established areas of research may serve as a topic of further study.

While reading from an augmented book, users can display the content chosen by them projected on real world and in this way become authors. When readers/users hold up the pages of a book with special markers, the software behind the book captures their actions; these are translated into animated on-screen images and texts. This way a new kind of connection is established between page and screen.

In the case of geo-spatial literature, the reader's interaction affects the written word and it thus assumes a presence in the real city environment with the help of mobile communicative devices. The issue of geo-spatial literature is only beginning to be explored. With only a handful of paper published on the topic, the appearance of new works should stimulate further analysis.

Ultimately, the broader impact of hypermedia remains to be seen and opportunities for further research abound, but the current analysis of hypermedia works, augmented books and geo-spatial literature provide an illustration that these forms of electronic literature may yet play a bigger role and reach wider register of readers/users.

NOTES

¹ Assistance and translations provided by Éva Margaret Bodnár and Matthew Adamson were greatly appreciated.

² A major factor which reduced the number of readers and writers of hypertext fiction was one of technical nature. The first desktop computers were not utilized as a "literary medium". Usability was also an issue as the first screens possessed low resolution and compared to paper were not enjoyable to read. (UKessays.com).

³ We Tell Stories: Six Authors. Six Stories. Six Weeks. 2008. [online] <http://wetellstories.co.uk/>

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INTERAKTIVITA A RECEPCIA. PROBLEMATIKA HYPERMEDIÁLNEJ, GEOLOKAČNEJ A AUGMENTOVANEJ LITERATÚRY

New Media. Hypertext. Hypermedia. Digital Literature. Link. Geo-spatial Literature. Augmented Literature.

Nové médiá. Hypertext. Hypermédiá. Digitálna literatúra. Link.
Geopriestorová literatúra. Augmentovaná literatúra.

Príspevok sa zaobera témou hypermédií a geopriestorovou a augmentovanou literatúrou z piatich hľadísk. Najprv analyzuje kontext, z ktorého tento fenomén vychádza, nové médiá. Následne predstavuje najdôležitejšie súčasné teoretické prístupy k tejto téme z pera Leva Manovicha, Stephena Wilsona, Ronaldu T. Azumu a ī. Ďalej skúma definície hypertextu podľa Teda Nelsona Rolanda Barthesa, Charlieho Greena a Georgea Landowa. Po štvrté skúma paradox obmedzenej prítalivosti hypertextu a súčasného obrovského vplyvu hypermediálnej literatúry na čitateľov. Napokon sa venuje niektorým príkladom multimediálnej, geopriestorovej a augmentovanej literatúry. V závere ponúka možnosti prístupu k literárnej praxi nových médií.

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