Workshop on Electronic Textuality

ABSTRACTS

Espen Aarseth
Games and Play as Object of Study for the Humanities

This abstract will focus on a few problems related to the humanistic (especially aesthetic) investigation of games and gameplay. It will touch on the issue of whether games can be understood by traditional means such as semiotics or narratology, and whether a special discipline (a ludonomy) is needed to understand ludic objects and processes. Also, can the study of games contribute models and insights to the study of DAOs (digital aesthetics objects) in general?

Over the last 12-15 years an interdisciplinary field has formed around the study of computer and videogames that is also taking older and non-digital games into account. Humanistic approaches (along with computer science, the social sciences, design theory and developer discourse) have been a driving force in this endeavor, but also problematic, in so far as they often have brought models and concepts to bear on these new phenomena without self-critical reflection or sufficient understanding of the things themselves. Much like the early hypertext research around 1990, where digital textuality was seen, nay – hailed – as the embodiment of certain poststructuralist notions and concepts (as if somehow the previously useful distinction between work and text or artifact and interpretation, producer and consumer no longer mattered), the ludic artifacts were appropriated as ideal tokens of narrative and semiotics. Thus, claims such as "all games are stories" (Murray 1997) and digital artifacts are "basically and primarily a semiotic domain" (Jensen 1990, my trans.) were among the happy slogans that heralded the introitus of the Humanities into the realms of digital gaming and digital aesthetics.

Semiotics and narratology can become highly useful instruments with which to study digital aesthetic objects; there can be no doubt about this. Along with rhetoric, deconstruction, phenomenology and a plethora of critical perspectives, applying them critically can only be good, especially if we recognize their limitations and respect the particularities of the new objects of study. Unfortunately, self-criticism is the hardest kind of criticism, and humanists and cultural critics are no better at this than anyone else, as the last 20 years of digital and "New media" studies have shown. The theoretical fetishising of "Virtual Reality" in the early 90s can serve as a third example of this problem, along with the early hypertext and game studies research. And the 80s utopia of "interactive multimedia" in teaching? Let us not dwell too much on our dark past. (Although in practice we are constantly repeating it. Technological utopianism never goes out of style, not even in the Humanities.)

The problems with semiotic and narratological approaches are rooted in the processual nature of games and play. Games and play are not in themselves media, but they use media as communicative layers, as the skins of the ludic machines. There is a layer hidden beneath the surface, that is, the mechanical, machinic, non-verbal engine of the ludic process, the driving force that brings the gameplay to life. In the textual artifacts that humanities scholars traditionally have studied, this hidden layer does not exist. What you see is what there is. The surface is all. To invert Derrida, we could say that there is nothing inside the text. Only, now there is. Textual theories have no way of modeling the mechanics of texts, because there used to be no such thing. In other words, we need to understand the hidden code layer, and we need a theory that can take mechanics and process into account.

As Wittgenstein pointed out, it is not possible to define the category of games. This may be a problem for computer game studies, but it is not a problem for the humanities. All it means is that computer games belong to a larger group of what we might call digital aesthetic objects (DAOs) and that what we may learn when studying games might also tell us something about DAOs in general. Here is a descriptive model (Aarseth & Calleja 2009) that describes the ontology of games, DAOs and what I have earlier called "cybertext" (1997):

The key word here is structure, which can be understood as a combination of many possible components:

The DAO (or just plain mechanical, non-digital AO) can constitute a game, a world (e.g. Second Life) or both. It can be ludic, but does not have to be. It can take place in virtual or natural environments. It can be digital, but it does not have to be. What is vital is that we understand the AO in light of all of its components: The player, the structure, the sign and the medium.

To conclude, in this abstract I have tried to voice a critical perspective on the reception of DAOs in the Humanities. There has been too much technological determinism, too much fetishising of the "Digital", the "Interactive" and the "Virtual" (not to mention the most offensive word of all, "New") and it is high time we instead try to expand our notions of what aesthetic objects are, how they are played and consumed, regardless of whether they are on tape, internet, canvas, stage, big, small or 3D screens. Or on paper. Materiality matters, but structure matters even more. As Tom Standage (1999) has pointed out, the Internet is not new. The good old telegraph (1840-) displayed all the traits of modern online textuality: hacking, chat, cyber-romance, flame wars, gender bending, and online fraud. Sometimes it

takes a journalist to set us humanists straight. And that is more than just a bit embarrassing.

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Lanfranco Aceti

Texting Art as Social Action: Blurring the Boundaries of Art and Media in Political, National and Cultural Contexts

The paper will address the issues related to the merging of text and visual images in online interactions. It will address the relationship between Anglo-Saxon and Continental philosophies within the increasingly merging context of words as images.

> "I believe that Quinean holism is not so different from the idea that every language has its own genius (as Humboldt said) or – better – that every language expresses a different world view (the Sapir-Whorf hypothesis)."[1]

The paper will focus on the relationship between language specificity and the globalized realm of contemporary electronic textuality within which the boundaries of cultural representation as well as the distinctions between word as text and as image disappear.

In this particular context it is no longer possible to address the issue of contemporary artistic interactions of text through partial analysis of its relevance and relationship to a single discipline. The interdisciplinarity of contemporary digital culture and digital humanities affects the reality of production of text and images, which – contextualized within local realities – engage at an international context.

Electronic texts alter dramatically the modalities of display of the word that, having abandoned its physical typographic form, becomes an electronic image. The image of the word is then recontextualized within larger and more complex contexts – which can be used to alter significantly the original meaning of the text or to engage audiences that otherwise would not have knowledge and/or take part in the event itself.

The possibility of adding and subtracting meaning, guiding the itinerary of the reader/viewer according

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1 Umberto Eco, *Mouse or Rat? Translation as Negotiation* (Weidenfeld and Nicolson, London: 2003), 21

to the parameters of the author/artist and the unpredictability of the artwork itself (as an event) in an online global stage are all characteristics that present the author/artist with both challenges and opportunities within the online world in general and in particular through contemporary social networks.

The text and the image do not solely shape perception. The visual representation of textuality in electronic formats also shapes engagements and behaviors through online forms of interactions and the blurring between virtual and real.

> Louise Shannon, Curator and Deputy Head of Contemporary Programmes at the Victoria and Albert Museum, London, for the exhibition *Decode: Digital Design Sensations* asked "what do digital technologies allow you to do or investigate that other tools do not?" Golan Levin answered: "I can create behaviour."[2]

It is this platform based on behavioral engagements that inspires contemporary artists to engage with electronic media re-presenting, within the context of electronic text, historical artistic and aesthetic arguments on the ends and means of contemporary art.

Debates on social action, artistic frameworks and socio-political contexts, inspired by Fluxus artists in the 1960s, are re-presented today in the context of electronic digital media and the flow of information that re-shape interactions and behaviors.

In the context of contemporary electronic text and images it is no longer appropriate to speak of high and low culture but perhaps things should be considered more within the dichotomy of accessible and inaccessible.

The usage and manipulation of the electronic text/image rests with the user and its reproducibility is not a matter of commercialization and aesthetic usage, since the mass usage of the artistic product within online environments is encouraged by the author/artist in a context of globalized acknowledgment and recognition of the aesthetic value of the artistic product.

The paper will conclude by presenting a recent online art project entitled *…And Even Today I Did Not Say What I Think*, that addresses how the contemporary conflict between text and image, virtual and real, have been embodied in an online platform. It will also analyze the modalities of engagement, interaction and dissemination of the project itself that moves in between the realm of aesthetic appreciation and that of art as social action for behavioral modifications.

Keywords:
Texting, social action, digital behavior, digital culture, symbolism, new media art and social networks

Kevin G. Barnhurst

On Wednesday, April 1, 2009, a Manchester, UK, *Guardian* headline announced: "Twitter switch for *Guardian,* after 188 years of ink; Newspaper to be available only on messaging service; Experts say any story can be told in 140 characters." The article cited the "unprecedented newsgathering power" of

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2 Golan Levin's official Web Site, "Interview for Victoria & Albert Exhibition by Louise Shannon," September, 2009, http://www.flong.com/texts/interviews/interview_shannon/ (accessed May 10, 2010).

Twitter, citing the “real-time updates” during two aviation events, a plane crash outside Denver and an emergency landing on the Hudson River in New York. The paper would mount a “mammoth project” to make its entire archive available in Twitter format.

The story reached American news outlets such as *Time* Magazine through a blog post as well as radio news headlines, not always identified as an April Fools item. Online comments to the *Guardian* story reported that the *San Serriffe Gazette* had “been a Twitter-only publication for some time already.”

Despite being a spoof, the *Guardian* story illustrates a reigning myth of brevity and speed in cultural texts generally: that things are getting shorter and faster, and that they will continue to do so. In *Guardian* comments, a reader named Whiting wrote, “Ten years from now, this will be read as premature history.”

In media studies, the prime case of the myth combining acceleration with abbreviation comes from journalism and has origins in telegraphic news. Transmitting stories by wire gave printed reports a peculiar form. The latest item appeared as if from a breathless narrator, who begins from the latest update and then goes back, in reverse order to tell the story. The form, if difficult to follow, is *about* speed, and it gave rise to the standard American news element, the summary lede. The opening paragraph of breaking news aims to brief the reader on the Five Ws of the occurrence.

The form of news reports has parallels in other correspondence: letters delivered back and forth by the multiple daily mail service available in U.S. cities during the first half of the 20th century and later through fax and cable exchanges.

Electronic messages follow the established forms: email, mobile texting, Twitter, Facebook, and Digg are brief, asynchronous exchanges in reverse sequence. They sustain the belief in accelerated, abbreviated text.

But the forms belie the content, the underlying substance. The myth of accelerated abbreviation obscures the fact of extension, a continuous growth in cultural texts generally.

In media studies, a prime case of the fact of extension comes again from journalism. In telegraphic news, the content, despite its breathless form, grew ever longer. The latest dispatch piled on top of a lengthening text (e.g., McKinley from Barnhurst & Nerone, 2001). The reverse order not only gave rise to the summary lede but also to a peculiar characteristic of content in American news stories: the inverted pyramid. The body of the hard news report is a backwards retelling but also an ordered ranking of story elements from the widest impact or appeal to the least newsworthy component.

The content of news reports has antecedents in the cases cited previously. Business correspondence on paper carried carbon copies from earlier rounds, and faxes or cables arrived with similar inclusions. Electronic content also follows suit, with email threads expanding and mobile texting that fills up phone outboxes and inboxes. Facebook messages and comments run in strings, and Twitter retweets form chains. The comments to news stories further extend the elaborated content, so that the whole of a report and reader responses can go on, screen after screen.

In a new project, John Nerone and I are examining the press for evidence of mobile privatization, the term Raymond Williams gave to the conditions that television emerged to satisfy. The regime valuing mobility and privacy made possible and necessary the telephone, radio, the automobile, the refrigerator, television, and the suburban home, once industrialism and capitalism disrupted older forms of work,

social, and home life. Mobile privatization create and feed desires for freedom and ease, but also hook consumers into systems of central production and wide distribution. Television provided suburbanites with a substitute for sociable spectacles (such as theatre), but supplied superficial entertainments designed primarily to hold viewers (whose eyes would watch commercials that fund television and encourage further consumption).

In the case of news, the fact of extended content hides behind the myth of short, sweet form. Speed-like forms give rise to the expectation of brevity, but also obscure the fact of ever-longer contents. My research in news in the American papers, television and radio newscasts, and news websites over the past century tracks an unrecognized transformation (Barnhurst, 2010). Reports named fewer persons (who), covered fewer events (what) and more distant places (where), as one might expect of briefer reports, but unexpectedly grew longer and became more complex temporally (when), and more explanatory (why).
The move to the internet furthered the illusion. News websites adopt shorter formats to present stories, such as home-page headlines and briefs linking to full stories, and they include briefer accounts of accident and crime chronicles, as well as allowing reader comments (the letter to the editor reduced to tidbits). But the stories on politics and substantial issues such as unemployment continue to grow longer, especially at important news sites. By presenting short segments of a story on multiple continuation pages, the journalism sites reinforce the illusion of brevity while fulfilling the market imperative to expose readers to more advertising.

The move online seems unable to find a business model capable of generating sufficient profits, and so U.S. newspapers are losing value, closing, or abandoning print. In May 2009, when the U.S. Senate held hearings on the future of news, a central argument took place between older newspapers and newscasters and online news purveyors and aggregators. The legacy media demanded congressional protection for the headline and abstract, blurb, or nutshell statement of a story's content. They wanted Google, Yahoo, and other aggregators to pay for publishing the core nugget of news content, for which they claimed copyright. The conflict over intellectual property reinforced the notion of news being fundamentally brief, misdirecting attention from the aim of creating longer content to hold internet audiences within the news sites.

The main consequence of the new long news is that, like practitioners and the public, scholars of literary and cultural studies remain trapped in a myth of accelerated abbreviation, unaware of the fact of extended content and its necessity in the economics of mobile privatization. American culture in general has fallen into a false consciousness of ease, speed, comfort and convenience in contrast to the growing pattern of text production that includes citizen-consumers as well as journalists and other knowledge workers.

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Naomi S. Baron

Does Medium Matter? Reading Onscreen versus in Hard Copy

Introduction

New technologies potentially redefine our relationship with text. Historically, people reared on older media have expressed concern over the consequences of newer tools. Johannes Trithemius, Abbot of

Sponheim, wrote in 1492 that "printed books will never be the equivalent of handwritten codices", and the archdeacon in Victor Hugo's *The Hunchback of Notre Dame* declared that "*Ceci tuera cela*" – the fifteenth-century printed book would kill the cathedral, which had long served as a community's source of knowledge. In the twentieth century, the telephone, the cinema, and then television were seen as destroying private letter-writing and public written genres such as newspapers and novels.

Yet the future has always been difficult to predict. Printed books and newspapers remain part of our cultural landscape (as do churches), and rather than fading from use, writing (in the form of email, instant messaging, and text messaging) now rivals voice telephony.

Reading Onscreen or in Hard Copy

Beyond its use for interpersonal online or mobile communication, public uses of the written word are increasingly appearing in digital form. Computers remain the most popular access platform for shorter texts such as newspapers or journal articles. However, with the appearance of e-books such as Amazon's Kindle and of Apple's iPhone and iPad, reading onscreen is likely to become an increasingly everyday activity.

Both academic institutions and publishers are actively contributing to growth of onscreen reading. Universities are encouraging their faculty to post readings online rather than send students to the library or have them buy hardcopy textbooks. Publishers are selling e-texts or "renting" electronic copies of texts, by the month or academic semester. While students may save money, feel "environmentally correct", and enjoy not carrying around hefty volumes, we need to ask whether such a shift has unforeseen consequences for the ways we read, learn, and think.

Preliminary Empirical Research

I am presently studying reading habits and attitudes towards textual modality (onscreen versus print) of American university students. Reading done in university contexts has, paradigmatically, the goal of serious learning. However, I am also exploring patterns of reading for pleasure among the same group. Thus far, I have done pilot studies of first-year doctoral candidates (N=27) and of undergraduates (N=20). Both groups completed short online surveys that included such questions as

- What medium (hard copy? onscreen?) do you prefer for doing academic reading? (A variety of genres was listed, including course texts, light non-fiction, and serious fiction). Subjects were asked the same questions about reading for pleasure.
- Are you more likely to re-read materials (for academic work? for pleasure?) if they are available onscreen or in hard copy?
- Compare your memory of what you read in the two media.
- Are you more likely to be multitasking when you read onscreen? in hard copy?
- Are you more likely to read an assigned article if you are handed a hard copy?
- If an assigned article is available online, are you likely to print out a hard copy?

While results are very preliminary, they already show interesting trends:

- Contrary to the common assumption that so-called "digital natives" are most comfortable reading onscreen, students in both groups indicated a preference for reading book-length works in hard copy, both for academic work and for pleasure.
- Both groups were more likely to reread material (academic – but even more so for pleasure) in hard copy.
- Both groups reported remembering more when they read in hard copy.
- Both groups reported doing more multitasking when reading onscreen.
- When academic reading was available online, three-quarters of both groups either printed out the piece before reading it or read the piece onscreen but then printed it out as well.
- Thirty percent of the doctoral students but 55% of the undergraduates said they were more

likely to do an assigned reading if they were handed a hard copy than if it was simply available online.

Even these initial findings suggest that a change of medium may have subtle but profound effects upon the ways we read and teach. If our students admit to re-reading less – and remembering less – when materials are accessed digitally, how will their learning be impacted as we increasingly urge them to read onscreen? Since multitasking reduces attention to the initial task at hand, what happens to concentration levels when we increasingly read onscreen? And what happens to the "green" argument for reading onscreen when so many students print out the material anyway? These are the sorts of challenges we face as academics – and as intellectuals – with the proliferation of electronic textuality.

Ziva Ben-Porat
The Challenges of Electronic Textuality: Memes as Intertexts

Assuming that intertextuality underlies all texts and is the basic condition of communication, I'll focus my discussion on the references to (rather than representations of) major texts of the Western literary canon on the most typical sites of electronic communication: personal anonymous blogs and the comments they elicit.
My claims –each of which needs to be further researched and hence should be considered in terms of a basis for policy making- are the following:

- There are vast differences between the potential and the actual readership of any blog.
- These differences elicit very different expectations with respect to the presence and modes of action of canonic elements in posts. For example, writing for a small number of readers whose interests and backgrounds are similar to those of the author allows, at least theoretically, a different and larger corpus of texts that can be alluded to; similarly the projection of homogeneous readership allows more varied and subtle modes of allusion. However, by and large the posts and the comments produced by anonymous bloggers and commentators show the intertextual features that in theory would characterize blogs written for and read by huge heterogeneous audiences:
- Canonic references usually function as memes (minimal de/re-contextualized cultural memory units) rather than as attributes of an original canonic text that such references are assumed to activate;
- Posts and comments alike pay little attention to the semantic potentials of such memes, and/or ignore any discrepancies between traditional or newly acquired significations of the meme.
- Memes often become semantically depleted lexical units, similar to personal names (that are deictic rather than semantic indicators).
- One of the major tasks of Electronic Textuality Studies is, to my mind, the research of the new forms of intertextuality and the way they affect electronic language and literature (in the widest sense).
- Such projects must be collaborative and multinational. Similarities and differences of Electronic canonic intertextuality between, for example, a cultural community in which a canonic text has originated, one in which it has been adopted and one in which the original remains a privileged import could teach us a lot about the unique features of electronic textuality on the one hand and point out problems as well as possible solutions with respect to the Europen cultural heritage on the other.

I'll illustrate my claims using material on "tilting at windmills," gathered during my current research project and compared with those of an unrelated study, conducted in Spain by my colleague Dolores

Romero Lopes.

Anna Esposito

The Twinkle of Emotional Feeling: Where It Comes From

In a daily body-to-body interaction, emotional expressions plays a vital role in creating social linkages, producing cultural exchanges, influencing relationships and communicating experiences. Emotional information is transmitted and perceived simultaneously through verbal (the semantic content of a message) and nonverbal (facial expressions, vocal expressions, gestures, paralinguistic information) communicative tools and contacts and interactions are highly affected by the way this information is communicated/perceived by/from the addresser/addressee. Human relationships are build up and hardened or completely broken and therefore, understanding the relationship between verbal and non-verbal communication modes, as well as investigating the perceptual and cognitive role of visual and auditory channels in conveying emotional information is the topic of recent research studies (Esposito 2009, 2007 and Aubergé, Cathiard 2003) particularly in the field of Human Computer Interaction (HCI) studies aiming to automatise the recognition and synthesis of human emotional interaction in order to develop friendly and emotionally colored interactive dialogues systems.

A long research tradition has tended to investigate emotions and related perceptual cues to infer them, through separate investigations into the three fundamental expressive domains involved in their communication, i.e. facial expressions, speech and body movements. On this research line, some studies showed that facial expressions were more informative than gestures and vocal expressions (Ekman, Friesen, & Hager, 2002 and Izard, & Ackerman, 2000) whereas others suggested that speech is predominant in underlining the faithfulness of emotional states since physiological processes, such as respiration and muscle tension, are naturally influenced by emotional responses (Cacioppo, et al.2000 and Scherer, et al. 2001). At present there is limited knowledge about the extent to which body movements and gestures provide reliable cues to emotional states even though several authors have suggested that the use of body motion in interaction is part of the social system and therefore body movements not only have potential meaning in communicative contexts but can also affect the interlocutor's behavior (Argyle,1988, and Goldin-Meadow,2003). However, these studies were often concerned with gestures (in particular hand gestures) used jointly with verbal communication and therefore showing intimate relationships between the speaker's speech and actions and the listener's nonverbal behaviors (Kendon, 2004; McNeill, 2005 among others). These gestures may have nothing to do with emotions since according to Ekman et al. (2002) affective displays are independent from language. At the date, relationships between bodily activity and emotional communicative functions remain a research field to be investigated even though several authors (Burgoon, 1994; Burleson, 1994) have drawn scholars' attention to the existence of relationships between body posture, head movements, hand gestures (in particular those named *adapters*) and emotions.

Whatever was the exploited domain, facial, gestural and auditory, the data reported in literature always referred to static facial expressions, static postures, that contrast with vocal stimuli since they are naturally dynamic. In addition, in daily experience, also emotional facial expressions and gestures vary along time, since emotional states are intrinsically dynamic processes.
Is the dynamic visual information still emotionally richer than the auditory one? A recent study comparing the power of visual and auditory channels in conveying emotional information exploiting dynamism in facial as in vocal expressions has been made trough the definition and constitution of a cross-modal and cross-cultural database constituted by dynamic verbal and non-verbal (gaze, facial expressions, and gestures) data and the definition of psychological experiments aimed to portray the underlying meta-structure of the affective communication (Esposito 2009, 2007). Such a database

(Esposito et al. 2009, Esposito & Riviello 2010) allowed to characterize the emotional dynamic features of some basic emotions transmitted dynamically by the visual and auditory channels considered either singularly or in combination, with the aim to establish if there is a preferential channel for perceiving an emotional state, and if this preference depends on the perceptual mode and/or on the cultural context. To this aim, a series of perceptual experiments for evaluating the subjective perception of emotional states, exploiting video and audio stimuli extracted from Italian and American English movies, were conducted on Italian and American English subjects (Esposito, 2009; Esposit0 & Riviello in progress).

The results show that humans' ability of to label emotional facial expressions depends on the dynamism of the stimuli and the channel by which they are conveyed: exploiting the same dynamism as in vocal expressions, the human ability to recognize emotional facial expressions through different channels is affected by the native spoken language of subjects and the cognitive load needed to assess the incoming stimuli.

In a cross cultural perspective, the results of these experiments suggest the need of investigations on the role the multimodality might play in communicating emotional feelings considering instantiated forms of interactions since perception is a strongly non linear process highly affected by the context, the culture, the medium and the mode through which the emotion is expressed. The open questions are:
Does multimodality increase our ability to felt and perceive emotional feelings?
Is one channel (the voice for example) more powerful than another (e.g. the visual one)?
Does cultural specificity have an effect on how emotional feeling is perceived?
What is the role of language specificity in this context?

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Kathleen Fitzpatrick

Reading (and Writing) Online, Rather than On the Decline

In two recent reports, "Reading at Risk" (2004) and "To Read or Not to Read" (2007), the U.S. National Endowment for the Arts lamented what appeared to be an inexorable decline in reading among Americans of all ages and demographics, but particularly among the young. Pointing to the apparent links that exist between reading and other forms of cultural activity such as museum-going and volunteer and charity work, the NEA indicated that the decline of reading in contemporary culture signaled a coming "erosion in cultural and civic participation" ("Reading at Risk" xii)

However, the January 2009 followup report, "Reading on the Rise," documents what appears to be a remarkable turnaround: "After decades of declining trends, there has been a decisive and unambiguous increase [in reading] among virtually every group measured in this comprehensive national survey" (1).

There are of course multiple ways to account for this change: the first would be to suggest, as does the NEA, that the remedial measures that the endowment put in place have worked: that programs created to encourage reading, especially among the young, have had the hoped-for effect. Another, however, might be to determine whether anything has changed in the various studies' terms or methodologies – and there is significant evidence to suggest that such changes may account for the apparent resurrection of reading as a cultural practice.

The earlier two reports closely aligned "reading" with the reading of literature – and even beyond that, with the reading of book-length (I.e., not periodicals), printed and bound (I.e., not digital) works of poetry, fiction, and drama (I.e., not non-fiction), read solely as a leisure activity (I.e., not for work or school). With such a restrictive definition of what constitutes reading, especially in an increasingly diverse mediated environment, it's no wonder that the practice seemed to be on the decline. In the latter report, however, the NEA at last looked at online reading, indicating in one statistic that "84 percent of adults who read literature (fiction, poetry, or drama) online or downloaded from the Internet also read books, whether print or online" ("Reading on the Rise" 8). Despite the confusing structure of this figure – those who read literature online also read books, some of which are online? -- it does at least indicate the NEA's acceptance, if begrudging, of the fact that online reading IS reading.

Moreover, the figure indicates that reading online is not a cause of the decline of book-reading; "For adults who read online articles, essays, or blogs," the report goes on to say, "the book-reading rate is 77 percent" (8). Readers are readers after all, and if more people are reading online, more people are reading, period.

This is not to say that there are no differences between the act of reading a print-based text and the act of reading one online. Perhaps most significantly, as the web has increasingly become a read-write medium, rather than read-only, acts of reading online frequently give rise to acts of writing, whether in comment fields or in other web venues, producing a network of texts responding to and commenting upon one another. This transformation of the publishing enterprise from the one-way broadcast of individual texts into the facilitation of multi-dimensional networked conversations requires some radical rethinking of the relationship among author, text, and reader: publishers will need to reimagine their business models, thinking less about selling objects and more about providing services; authors will need to engage with their texts and with readerships over a period of time, rather than rapidly moving on to the next writing project; and literary scholars will need to create new understandings of the modes of authorship that take place in networked space, modes that are more likely to be multivocal and collaborative than were the dominant modes of authorship in the print era.

My contribution to the ESF-COST workshop on Electronic Textuality will thus explore both the cultural anxieties that circulate around the ostensible decline of conventional forms of literacy in an increasingly web-based communications environment and on the ways that literacy is, if not declining, certainly changing in the encounter with new modes of electronic text. The challenge we face, I believe, will not be to encourage reading as an activity separate from and in opposition to network-based communication, but rather to create new textual forms, new publishing strategies, and new conceptions of the relationship between reader and author that support and augment the ways that we actually engage with electronic texts.

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Leopoldina Fortunati

Some Thoughts about Electronic Texting

There are three issues related to electronic texting I would like to discuss in this presentation. Up to now these issues have been under-researched, but they are relevant for the future of the internet and more broadly for the future of our knowledge and culture. The first issue concerns the impaired development that the binomial of writing/reading has undergone after the advent of the computer; the second regards the gestures and postures which accompany the use of the Internet and their effects at the cognitive and emotional level; the third concerns the communicative modalities which prevail on the web and the important consequences they might have on electronic texting.

The binomial of reading/writing

The computer has automated and thus facilitated writing (Fortunati, 2005). Linking writing to a machine has on the one hand sped up certain procedures, but on the other hand has slowed them down, as it has interposed the inertia of the machine itself. While to write offline I take paper and pen and can begin to write at once, to write with the computer, I have to switch it on and wait. These breaks,

however, have been reduced in the course of time with the acceleration of electronic operations. Furthermore, electronic writing has facilitated the process of editing, but with an unexpected result: the loss of the writing path, as the technology has led the writer not to keep track of the corrections anymore.
In contrast to the facilitation of writing, the use of the computer has made reading more difficult: reading from the screen seems more tiring (several authors talk of 30% more difficulty) than from paper (see also the research presented by Naomi Baron). Apart from the technique of speed reading, no technology has been implemented to support reading. The reading process remains pre-technological.

Consequently, while the expression of the self through electronic writing was able to develop, the contact with the other, which occurs through reading, is reduced, since intellectuals are also more busy writing, which takes time away from reading and studying. Also the notion of writing is changing. The main purpose of writing seems to be not to communicate anymore, but to display personal opinions. The narcissist society envisaged by Lasch (1979) celebrates its triumphs on the contemporary social web.

The millions of blogs that are desperately in search of readers (Hindman, 2008) show that the binomial of reading/writing is increasingly opening.

Gestures and postures of electronic texting
First of all, in the reconstruction of a phenomenology of Internet use, there has been a lack of attention to the gestures and postures which accompany the act of reading and writing. The keyboard, put horizontally, concentrated the activity of writing in the same location as the tradition of offline writing, while reading has been concentrated in this case vertically in the screen and so in a completely new position for the reader. Those who read offline do it from top to bottom, they read and write with the head bent, in the classic position of meditation and prayer. Electronic reading instead people to raise the head. The head is upright while one looks on the screen. Writing is in any case an activity which implies being stationary, since it requires concentration. However, reading/writing offline allows many different postures: from being seated to lying down.

On the contrary, reading/writing online for long durations has more rigid requirements, since it demands that the user is seated at a table. Raising the head has meant for the user entering a position of parity: those who read on the screen position themselves on the same level as the electronic text. The figure of the e-actor with its capacity of reading, but also of producing electronic texting (the famous prosumer) could develop only starting from this change in the posture of the electronic reader. This change of 90 degrees in head posture obviously has some relevant consequences both at the cognitive and the emotional level.

But what is a novelty for reading/writing, was the rule in movie consumption. Jean-Luc Godard argues that the cinema screen must be head-high, while television has to be watched by lowering the head. More precisely, the use of the computer/Internet is more similar to cinema use than to television use. The computer/Internet situates itself in the cultural heritage of the cinema, not only because of the presence of the screen, as Manovich (2001) stresses, but also because of the user's posture, which is very similar.

Things change, however, with mobility. Mobility makes reading head-high impossible. Mobile media, both laptops and mobile phones, have reintroduced to electronic reading/writing the posture of the more or less lowered head.

Also the dimensions of what we read, books or newspapers, matter. While the book requires micro gestures of the arms, the newspaper requires a consistent opening of the arms at the height of the heart. Reading a newspaper in fact is much more tiring physically than reading a book, because the gestures required by this reading are larger. Reading a newspaper removes our defense constituted by arms gathered in front of the trunk and makes the reader feeling open toward the world. When a person reads the news he/she is in a position in which news arrive directly to the heart. Maybe this is one of the reasons for which news have such an emotional structure and impact.

At the same time also writing implies different gestures and postures depending on the tool which is used. Offline writing implies essentially the use of the right end. Furthermore the hands remain near to the trunk, almost protecting it. On the contrary writing on a keyboard means that the hands cover a larger surface and consequently the arms are more open in respect to the trunk. Furthermore, electronic writing introduces an element of automatism in the process, which changes radically the ritualization of writing. While offline each vowel and consonant has to be written in a specific way and so for writing one has to change continuously the micro gestures of the fingers, in electronic writing the key is pressed in the same way, independently of the type of vowel or consonant to which it corresponds. Instead of designing the words on a white sheet, one presses keys which are very similar except for the position they assume on the keyboard.

Multimodal communication

The third issue is connected to the communicative modality which prevails on the web. Until a certain point the computer/Internet was mainly a written and silent world, although the screen was connected to cinema and to television. There is a lack of research on how the web is structured in relation to its different modalities of communication: data, text, audio, video and multimodal. An interesting exception is the report written by Chigusa Saeki, Hiroya Shimada, and Shinya Tahata (2004) on the Japanese web. If one consider the total number of files in total data volume terms, it is found that video files lead with a 29.1% share, followed by document and data files (26.0%), image files (25.4%), and audio files (12.1%). However, although *video and audio files* accounted for over 40% in total data volume terms, they made up *only 0.8% of the total number of files*. This reflects the fact that at that time the internet world was essentially a written world.3

But in more recent years things have begun to change. The culture of the computer screen has increasingly recognized its debts to the tradition of cinema and television (Manovich, 2001). At the beginning pictures began to be uploaded but then videos, movies, TV programs and music found their way online. Social networks have celebrated this tendency to multimodal communication and have expanded it.

The history of the changes in the modalities of communication and information on the web reflects the transformation of its practices of use. In particular, our interest here is to propose a reflection on the consequences of the growth of multimodal communication in comparison to monomodal

3 According to Sergio Canazza (personal communication), since 2005 methods and technologies able to estimate in a reliable way the audio and video files present in the Internet are lacking, also because in these last years the audio codecs and transfer protocols were pretty much different. Furthermore, the files shared in networks peer-to-peer have never been estimated. A rough calculation can be done using some clients and analysing all the servers of all the networks (kad, eD2k, etc.). Roughly, out of about 1.5 billion files (audio, video, texting etc) shared through each server, at least half billion are calculated to be audio files. It is sufficient to multiply the number of files with the number of servers and networks present in Western countries. The resulting figure should be over 100 billion files. Obviously these files are not all different among them. Finally and limited to the human voice, it seems that an internal report made by the Italian Association of Sciences of the voice at the beginning of 2000 evaluated as about two million the files containing voice and distributed in a free way on the web.

communication (i.e. only writing), with respect to the emotions that it makes users feel. Has the internet become more emotionally intense with the growth of multimodal communication? Do users gain in term of information clarity from electronic multimodal communication? Electronic texting, compared to offline texting, is supposed to generate a different emotional experience. As Fortunati and Vincent write (2009:13-14), "a mediated emotion is an emotion felt, narrated or shown, which is produced or consumed, for example in a telephone or mobile phone conversation, in a film or a TV program or in a website, in other words mediated by a computational electronic device. Electronic emotions are emotions lived, re-lived or discovered through machines. Through ICT, emotions are on the one hand amplified, shaped, stereotyped, re-invented and on the other sacrificed, because they must submit themselves to the technological limits and languages of a machine. Mediated emotions are emotions which are expressed at a distance from the interlocutor or the broadcaster, and which consequently take place during the break up of the unitary process which usually provides the formation of attitudes and which consists of cognition, emotion and behaviour".

Around this topic, a multidisciplinary effort is produced with the purpose to understand the multiple lives of mediated and body-to-body emotion. One of the disciplines which has worked massively on this topic is the Human Computer Interaction field (HCI) (see Anna Esposito's presentation). Both these aspects are connected to emotion and they tell us one more time that emotions matter and scholars cannot ignore them anymore.

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Laura Malone

The significance of electronic textuality is noteworthy in modern day scholarship. It is currently revolutionising the way that scholars and the general public engage with texts and textual editions, and dispersing the boundaries associated with the reading and study of texts in traditional codex form, bound within the framework of the book. A noteworthy aspect of this contemporary 'revolution' is its special significance for literary texts from earlier historical periods (classical, medieval, early modern) where studies of literary tradition and technological innovations co-operate in dynamic and productive research partnerships. This is a notable feature of my research institute, An Foras Feasa, at the National University of Ireland, Maynooth where in the three years since its creation, especially significant research partnerships have been initiated between researchers in Celtic Studies and in Computer Science/Humanities Computing.

My postdoctoral research involves the creation of a digital edition of an Early Modern Irish tale entitled

Táin Bó Fliodhaise ('The Cattle Raid of Fliodhais'). This tale belongs to the Ulster Cycle of Irish literature, and has been transmitted to us in two recensions. The first belongs to the Old Irish period, and is found in four manuscripts. The second recension, upon which the bulk of my research is focused, belongs to the Early Modern Irish period, and is found in three manuscripts ranging in date from the fourteenth to the seventeenth centuries.

An edition of the text is currently being prepared, and will consist of full diplomatic transcriptions of all three manuscript witnesses, a critical edition based on the oldest and most complete manuscript witness (a National Library of Scotland manuscript known as the Glenmasan Manuscript), a full English translation of the critical edition, textual and grammatical notes, indexes, and a complete bibliography.

The traditional method of preparing such an edition involves compiling an edition in codex form, although this method is not without its challenges and limitations regarding the usability, navigability, and ease of access to the various components of the text for the reader.

These challenges and limitations can be overcome through the production of a digital edition of the text, which will comprise the critical edition, which forms the heart of the project, divided into segments. Corresponding to each segment will be a) an English translation, b) diplomatic readings of all manuscript witnesses, c) digital manuscript images, d) textual and grammatical notes. All components will be readily available to the reader, and by clicking on the appropriate link, the reader can access the desired component of the edition, quickly and easily, which will allow for greater ease in comparative analysis between the various components, for example, the critical edition and diplomatic editions, the diplomatic readings and manuscript images, etc.

XML (Extensible Markup Language) has been chosen as the mark-up language of this project, and the various components will be linked by means of hyperlinks. XML was favoured as it offers those involved in the creation of the project the freedom to create their own tags.

There are a number of advantages associated with the production of this edition in digital form. Firstly, through the use of a digital medium, the text will be easily searchable and navigable, and the reader can readily switch between the various components of the edition.

Secondly, the importance of the conservation of manuscripts cannot be underestimated, and by providing digital manuscript images, scholars and the greater public will have access to the text as it appears in the manuscripts, without the need for any physical contact.

Thirdly, future editors of texts, within my institution and externally, may use the template that is being created for this project in order to produce critical editions of further texts, adding to the wealth of literature that has been made available through the process of constructing electronic texts.

Rivki Ribak
Objects for Communication: Reflections on Mobile Media as Potential Media

Based on previous research, I would like to discuss the ways in which non-use or potential use and channel-testing have become important means for communication through objects such as the mobile phone. Specifically, I would argue that the fact of having mobile media, more than actually using them, signifies communication; and that the preoccupation with channel maintenance and connectivity itself, particularly since the decline of landline media, overshadows content. This, in turn, has both spatial and

temporal implications for the users.

Mauro Sarrica
It's time for http://en.wikipedia.org/wiki/Jujutsu

According to Wikipedia, Jujutsu was "developed around the principle of using an attacker's energy against him, rather than directly opposing it". In this contribution I will raise few reasons why it is time to adopt a Jujutsu-alike approach to electronic textuality: dialogical communication is necessary to maintain status in societies; electronic texts allow exploring cultural tropes; new media challenge interdisciplinary approaches.

Cultural psychology describes the connection between mind and culture as an intertwined relationship: **"**no sociocultural environment exists or has identity independent of the way human beings seize meanings and resources from it, while, on the other hand, every human being's subjectivity and mental life are altered through the process of seizing meanings and resources from some sociocultural environment and using them" (Schweder, 1991, p.74).

From this premise, technology and culture are part of the same scaffolding - as already noticed in early 20th century by Vygotskij - and new technologies do not represent a possibility or a threat, they are just part of our environment. Actually, the two main features of new media - *recombination* and *networking* (Lievrouw & Livingstone, 2006) - are congruent with post-modernity. Cultural institutions can try to counter these two tendencies, or they can leverage them. Let's see some of the opportunities that this latter approach offers.

Maintaining social status. Contemporary social movements coordinate online and off-line actions (Sarrica, forthcoming). Recent developments of the social representation theory (Jovchelovitch, 2007) indicate that while top-down communications between experts and laypeople have monological consequences, open debates have a clear potential for achieving dialogical understandings (Batel & Castro, 2009). Given the spread of social networks, online interaction with public will be more and more necessary in future. If cultural institutions and experts will not reconsider their communicative modes, they risk loosing their status in society, as already happened to the press.

Research opportunities. Electronic texts combine interaction, multi-authorship and new constrain; this mix offers new opportunities to literature (Eco, 1994). Exemplars are online travel diaries (Nencini et al., 2008) or new genres - such as cellphone novels or twitterature. These and other kinds of texts, both created by experts and laypeople, offer a privileged access to cultural tropes: they constitute large corpora, spontaneously created, well organised along time, that are easy to be collected and that can be deeply analysed with specific software.

Interdisciplinary development. Peculiarities of online texting have been largely studied during the last decades (e.g. Simone, 2000). Nevertheless, researchers often tend to assess different facets separately, e.g. language changes, socio-psychological correlates. Digital texts, instead, represent a challenge to research teams. Their complexity requires the evolution of new, interdisciplinary approaches, which may gather different tradition of research interested in lexicometric and qualitative content analyses.

Concluding, as Jujutsu suggests, a future goal is to exploit the energy of electronic textuality, rather than opposing it. An overall goal for institutions is to re-organise internal and external communications to maintain or even enhance their status in contemporary societies. Researchers, on their side, may develop new research paradigm explicitly directed at the exploitation of online resources. Finally

further interdisciplinary advancements are necessary to investigate contents, changes and direction of cultural facts (Asch, 1952).

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Susan Schreibman

Big Literature and Distant Reading

We are awash with text. One of the grand challenges of our time is the overload of information we need to manage. In the face of a society that now grazes over petabytes of information rather than maintaining a sustained, focused engagement, we must develop new strategies to make sense of the information with which we are expected to engage. This shift in the norms of consumption for the written word necessitates a redefinition of the concept of reading. The age of print culture and traditional narrative encouraged what was essentially a linear approach in which a text was partaken of from front to back, word by word, until the end was reached. Strategies were introduced as print culture developed to circumvent this linear trajectory, such as indices and tables of contents, as well as more specialised formats such as scholarly editions with their sophisticated apparatus.

Early tools of the personal computing revolution, such as hypertext, created even more ways to circumvent the linear, mimicking even more profoundly reference behaviours. Yet the mass of information now available to us is what truly marks the passing of the age of primacy of linear reading. Our society has moved beyond the point of critical information being readily available to a point when information filtering has become a necessary survival skill.

No one is more aware of this glut of riches than the literary scholar. In an age when there are more books, articles, dissertations, archival sources, and digital texts available at our fingertips than any one person could read in a lifetime, the whole concept of what it means to 'read a subject', that is to master a field of knowledge, comes into question. As John Guillory has suggested, professional reading has certain characteristics that distinguish it from the practice of lay reading. Over time professional readers developed diverse reading practices to cope with the breadth and depth of the material they must master. Extensive reading involves strategies such as skimming, browsing, and scanning at a rapid

pace, only slowing down when a textual signal brings the reader to a point that necessitates a different practice. This slower pace Guillory calls intensive reading. Indeed, the most prevalent form of engagement for the literary scholar has been a particular form of intensive reading (or indeed re-reading) that is close reading. It is so pervasive that, by and large, our discipline's entire critical practice has formed around it (2008: 4-5).

In a digital age, however, these traditional practices are no longer adequate. No matter how much an individual scholar may skim, browse, or scan, it is impossible when one has the technical capacity of dealing with, at any one time, hundreds, thousands, even millions of texts. There are now massive digital corpora available to us that have been built during the preceding two decades in the rush to digitisation both publicly and privately.

In 2006 Greg Crane published the article entitled 'What do you do with a Million Books?' which has given the digital humanities community a shorthand for the problem of reading in the modern age. Yet, despite the availability of thousands, even millions of texts central to our discipline, we have not developed new modes of reading and analysis that take advantage of this vast web of scholarship.

Although technology cannot tell us what a text 'means', we need new tools, methodologies, and theories to reveal the full context of works or movements we study to grant us confidence that we have traced important social, aesthetic and creative developments to their sources, when it is not always clear where those sources might lie. Franco Moretti has eloquently termed this new approach *distant reading*. Distant reading requires a methodology not just of scale (i.e. read more books) but of kind:

> the trouble with close reading (in all of its incarnations, from the new criticism to deconstruction) is that it necessarily depends on an extremely small canon. This may have become an unconscious and invisible premise by now, but it is an iron one nonetheless: you invest so much in individual texts *only* if you think that very few of them really matter. Otherwise, it doesn't make sense. And if you want to look beyond the canon . . . close reading will not do it. It's not designed to do it, it's designed to do the opposite. At bottom, it's a theological exercise—very solemn treatment of very few texts taken very seriously—whereas what we really need is a little pact with the devil: we know how to read texts, now let's learn how *not* to read them. Distant reading: where distance, let me repeat it, *is a condition of knowledge*: it allows you to focus on units that are much smaller or much larger than the text: devices, themes, tropes—or genres and systems. And if, between the very small and the very large, the text itself disappears, well, it is one of those cases when one can justifiably say, Less is more.

The process of knowledge creation a literary scholar engages with in the digital, non-linear (unreading or 'non-consumptive' as some scholars call it) context is only different from more traditional approaches in the first stages of its path to knowledge, not necessarily in the final proving of its hypotheses or dissemination of results. Yet the differences in those initial phases are huge. Technologically-mediated enquiry enables questions to be asked of a corpus that would be unthinkable in a traditional context, and which develop in an iterative fashion, allowing the scholar to refine questions and spin off new and unexpected ones that arise during the process of distant reading. Moreover, distant reading requires wholly new methods of aggregating and filtering to create new visual tropes for the analysis of literature.

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James Stewart
The Annotation of Contemporary Life

My approach to this topic is not as a humanities scholar, but as a sociologist of innovation and of Information and communication technologies. Since my work in this field began in the mid 1990s there has been an explosion in media and literary forms based around now ubiquitous electronic technologies – micro-videos, web pages of many sort, blogging and microblogging, social network sites, emails and mobile phone text messages. Our lives appear ever more saturated with media of multitudinous forms, particularly written texts.

From a historical perspective it is useful to compare the current period to previous moments in history where technical innovation produced rapid innovation in media and literary forms: the printing press, photography, the sound recording and broadcast, and moving images were all technologies that produced new forms of expression, new formats, and a multitude of new professions and businesses. Each wave of innovation has copied, reinvented, subverted and bypassed the forms and formats of previous generations, causing both anguish and delight to creators, businesses, regulators and audiences.

The last wave of innovation has contributed considerably to the 'textualistion' of our lives. Thoughts, opinions, conversations, relationships and communities are increasingly committed to texts, texts that mediate and memorise our lives and interactions.

I will explore with examples, this growing textualisation of life, looking at the diversity and innovation in forms of textual communication, particular in the field of social network sites, mobile messaging and microblogging, where simple technical facilities are being used to create a wide range of new forms of discourse and textual production. More than any other media, text is coming to define our interactions, replacing the oral culture of every day life, and the visual culture of the mass media. I will particularly evoke the role of texts in memory practices: as the Library of Congress archives every 'tweet' ever made on Twitter[4], Google search records our every internet search, providing a record of our most intimate thoughts and mundane interests, and listservs and social network sites save our life's conversations, we need to understand better what these texts mean to our identity and to the way that we remember and forget. Do we put enough care into our memory practices as past generations of diarists and photographers documenting our inner and outer lives? Should we care?

Finally I will reflect on work done in a recent project 'Branded Meeting Places', that examined the practices of 'tagging' – the facility we have not only to attach labels to electronic objects on the web, but to what those objects represent: events, relationships, physical spaces. These tags can then be search, linked and aggregated electronically. Tagging is done for many reasons, for example, to show ownership, to pass comment, to classify, to markup or to control. Electronic technologies have made this practice open to all: no longer is it just the librarians to classify books, the city that puts up signs, or the elite who can publish their judgments, we all can.
I bring these themes together with the idea of Annotation: while in some cases these texts perform our lives and our relationships, they broadly serve to annotate our passing lives, as we attempt to make

4
 http://blogs.loc.gov/loc/2010/04/how-tweet-it-is-library-acquires-entire-twitter-archive/

sense of it, and with our words, attempt to communicate our judgments, classifications and interpretations.

My interest in this workshop is to understand how we value these texts, as readers, writers, how that value is intermediated by technology, networks, markets and communities. What are we willing to invest in these texts, and pay for them – in time, money, privacy, etc
What are the ways to think about value – literary quality, personal meaning, scarcity, tradability, community value, protection under IPR etc.

Olga Vershinskaya
New Readers

The impact of electronic textuality on culture is even bigger than we can imagine today.
We are witnesses of tectonic sociocultural changes such as appearance of new forms of literacy defining today labor market success; a new paradigm of culture transmission when children teach parents to use ICT; appearance of a new screen culture which is not replacing the culture of the book (as is often stated) but they supplement each other.

This new culture is often called "a low culture" because of its poor perverted language first of all. But low culture has not only drawbacks, it has its advantages – it creates new "readers". People who never read before start reading.

Changes in people's mind take place – groups of population who traditionally read little join to information consumers. "People who read a lot" and "people who read little" have always existed. For the first group, for informationally active people Internet is just another channel of information which is supplementary to books, theatres, exhibitions.

A new group of people whom we call "new readers" appeared. They are the readers of screen information, young people first of all. They have never read books or read little before Internet appeared. Internet for them is often the only source of information. This is a positive trend as previously these people had no interest in knowledge and information.

Part of informationally passive people "wake up". Screen readers are a new field of research for Russian academic discourse. Usage of ICT has a non-importunate, non-compulsory educational effect. Education through entertainment attracts those who do not even think about learning.
The concept of "reader" as a reader of books is under change.

Reading of e-texts is not reading in its traditional sense: literary actions take place in the mind of the reader, Internet texts give you ready made images. Energy of e-texts is much less than the energy of book texts. But the energy of texts exchange grew a lot.

There is a serious problem of the reading matter in the virtual world. But the problem of choice has always existed. It becomes vital for a screen reader; it demands an active position, an ability to choose in an ocean of information.

Observations and comments given in this presentation are based on the qualitative studies of ICT users conducted during the last ten years.

Positive impact of information revolution on modern readers is often ignored by academics. At the same time the number of people going from the depths of ignorance to knowledge is growing. ICTs have an enlightenment effect. New methods of culture transition wake people up and develop individual learning capabilities.

Milena Zic-Fuchs

Communication Technologies and their Influence on Language: A Linguist's View

It has become a recognized fact that the emergence and spread of new communication technologies is producing far reaching effects not only on important aspects of communication, but also on language and languages. Especially during the last decade linguists, but also sociologists, anthropologists, politicians, etc, have voiced fears about the impact of the communication technologies on language, for it has become obvious that "new" linguistic and communicative phenomena are evident on the Internet, and in the specific communication provided by the text messages of the short messaging service (SMS) on mobile phones.

The use of personal computers and mobile phones has become an integral part of everyday living and communication in the modern world. However, when one views different countries (that is languages) actual usage of communication technologies can differ. Thus in Croatia the usage of mobile phones and with them SMS text messages has become one of the most dominant means of communication that far exceeds the various forms of communication found on the Internet. More specifically, the latest statistics for Croatia show that in 2006 there were 100,57 mobile phones per 100 inhabitants, or in other words that three mobile operators serviced 4.464.400 users of mobile phones in relation to the same number of inhabitants that Croatia has at the moment.

More precisely, the average Croatian mobile phone user sends over 70 messages per month, while the European average is 25 messages per month. The above data shows that the SMS is a widespread form of communication in Croatia with a very high intensity of use, by far higher than in other European countries.

Linguistically speaking, SMS text messages also manifest very interesting features which again are primarily the result of the *tension* between what are apparently features of 'speech' and 'writing' on the one hand, and by the technological nature of mobile telephony medium on the other. When compared to the different varieties of Netspeak, SMS text messages come closest to the language of chat groups found on the Internet, since both share a number of common properties, the most dominant being an overall 'conversation-like' framework which at first glance seems to place them closer to what is traditionally understood by 'the spoken medium'.

When faced with the analysis of any of the new 'varieties' found within the realm of communication technologies, one comes across numerous phenomena which can roughly be divided into *universal* characteristics of the variety regardless of whether we are dealing with English or Croatian, or other languages, and those which belong to what may be termed as *language-specific* features.

The analysis of the corpus of Croatian SMS text messages uncovered quite a few unusual features from the point of view of standard, accepted grammatical notions. One of them, was without a doubt the appearance of the *aorist* in informal message exchanges, very much like informal everyday conversations. What is more, the aorist, or at least a past tense that looked like the aorist in form, appeared quite frequently considering its restricted use in modern Croatian. More specifically, approximately fifty messages contained this past tense in a corpus of 6000 message exchanges:

- *idjeh* te pred faxom
  AORIST-'to see'

  (I *saw* you in front of the faculty building)

  [female professor, 50 years old]

- a kaj si radila u tramvaju u 20 do 8? ja tek sad *progledah*

  (What were you doing in a tram 20 to 8? i just *opened my eyes*)

  [male professional, 40 years old]

The appearance of the aorist in examples such as these is very unusual, since the style of communication is highly informal.

Namely, the above discussion of the use of *the aorist* in Croatian SMS text messages shows that grammatical forms may undergo transformations of meaning and usage, and that these transformations can be directly linked to the interplay between language and various limitations of the communication technology itself. What is more, emergent features such as these then in turn become characteristic features of the 'variety' itself, in a sense proving that we are in reality faced with a new emerging species of communication.

Moreover, a comparison between frequency of usage of Croatian tenses based on the Croatian SMS text message corpus and the Croatian National Corpus (CNC)5 shows interesting differences. The ensuing analysis of the distribution of tenses was performed on representative samples containing 1487 finite verb forms from the SMS corpus, and 1327 finite verb forms from the morphologically tagged part of the CNC. The following table represents frequency counts of Croatian tenses in both the SMS corpus and the CNC and shows that the tense distribution between the two corpora is significantly different statistically ($\chi^2 = 266$, df = 5, $p < 0.001$).

	PRESENT	PERFECT	AORIST	FUTURE I	FUTURE II	CONDI-TIONAL	IMPE-RATIVE	TOTAL
SMS	847	276	27	129	19	46	143	1487
CNC	628	518	1	111	1	66	2	1327

Table 1 Frequency counts of finite verb forms

5 For the Croatian National Corpus see *www.hnk.ffzg.hr*.

The above table, or more precisely the frequency counts of the Croatian tenses show marked differences with regard to the Croatian *perfect*, especially if viewed together with the *aorist*, the *present* and the *imperative*. More specifically, the past is expressed by both the Croatian *perfect* and the *aorist* in the SMS corpus, which shows a marked contrast when compared to the CNC, in which only one instance of the *aorist* was found. A substantially larger number of usages of the Croatian *perfect* is evidenced, which is in accordance with present day usage of the *perfect* tense in Croatian. This implies that the SMS technology and all reasons that trigger off brevity in SMS text messages have resulted in a different distribution or reshuffling of possible past tenses in Croatian. This analysis also shows that the *aorist* is still very much a part of the Croatian system of tenses and what is more, that it has started to appear in e-mail messages, blogs, and other varieties found on the Internet.

The above analysis of Croatian tenses in SMS text messages shows differences in the usage of the tenses, and what is more the reappearance of tenses which have more or less become obsolete in spoken or written language. The two basic reasons why certain forms reappear but with different meanings than described in standard grammars of Croatian is on one hand the influence of the communication technology itself, and on the other the discourse/pragmatic influence that this specific variety is determined by.

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