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Digital Determinism:  
the Cyrillic Alphabet in the Age of New Technology

Martin Paulsen

We simply do not know what our writing does.
— Friedrich Kittler

Introduction
The spread of digital technology has created new conditions for the existence and development of languages.1 The East Slavonic languages Belarusian, Russian, and Ukrainian are excellent examples. Since the Internet originated in the U.S.,2 and since most computer devices are created on the basis of languages that use the Latin alphabet (i.e., English), people who use other alphabets, such as Cyrillic, face additional challenges in adapting to the new technological realities (Sproat 2010).3 In this article, I shall focus on how digital technology challenges Cyrillic, as the alphabet in which the East Slavonic languages are written.

The consequences of similar technological changes have been studied by media theoreticians such as Marshall McLuhan and Friedrich Kittler. Both have made strong claims for the influence of technology on the human condition. In this article, I discuss recent technological changes in the light of what has been referred to as a “technological determinism” in the works of McLuhan and Kittler. Thus, the aim of this article is to discuss conceptually the implications of the new technology on the three East Slavonic languages.

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1 I would like to thank Dirk Uffelmann for comments on an early draft that set the directions for the final layout of the article. Thanks are also due to my colleagues Ingunn Lunde, Alexander Berdichevsky, the editor and the two anonymous reviewers.
2 This claim, however, does not necessarily hold for digital technology in general. SMS technology, for instance, was developed in Western Europe, not in the U.S. (Trosby 2004).
3 Cf. Frank Ellis’s account of the implications of Western bias in a larger, societal context (Ellis 1999).
**Digital technology in Eastern Europe**

The presence of digital technology and the Internet has been strongly felt in Eastern Europe over the last decade. As of 2010, approximately one third of the inhabitants of Belarus, Russia, and Ukraine visit the Internet at least once a month (Korrespondent 2010b; Evplanov 2010; It.tut.by 2010), while the number of mobile phones is higher than the number of inhabitants in all three countries (Marketing.by 2010; Korrespondent 2010a; PRIME-TASS 2010). This means that for Eastern Europeans in general, and especially for adults in the big cities, digital technology, and with it computer-mediated communication, has become commonplace.

Computer-mediated communication (CMC) has evolved into a popular study object worldwide over the past 15 years. A testimony to this are the publications devoted to CMC on a global scale: Brenda Danet and Susan C. Herring’s *The Multilingual Internet* (2007), Gerard Goggin and Mark McLelland’s *Internationalizing Internet Studies* (2009b), as well as James E. Katz’s *Handbook of Mobile Communication Studies* (2008). For all their global scope, however, Eastern Europe is almost completely ignored in these three English-language volumes. It is present only through Eugene Gorny’s (2009) article on Russian jokes on the Internet in Goggin and McLelland’s book. This situation is reflected in the introduction to the same volume, where the editors state that “Research into languages that do not utilize the Roman-based alphabet remains particularly lacking in the literature.” (Goggin and McLelland 2009a:5) The situation is similar when it comes to non-Latin script in CMC. While the literature on so-called Greeklish (Androutsopoulos, 2006, 2009; Koutsogiannis & Mitsikopoulou, 2007; Tseliga, 2007), Japanese (Gottlieb, 2000, 2005, 2009) and Arabic (Abdulla, 2007; Palfreyman & al Khalil, 2007; Warschauer, el Said, & Zohry, 2007) is well developed, the Cyrillic languages have been less studied from this point of view.

This lack in the Anglophone literature does not, however, necessarily reflect the state of the art in Eastern Europe, and local Russian-language literature has in particular made some important

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4 These statistics are persistently problematic and often vary significantly. In a recent monograph on the Internet worldwide, Deibert *et al.* (2010) suggest different figures, most notably a surprisingly low 14% for Ukraine. Even if the figures are from 2008, they are clearly lower than expected based on reports in local media, and I find Deibert *et al*’s numbers hard to believe.
contributions. There has been a remarkable scholarly interest towards Internet slang based on distortions of the norms of standard Russian (Guseinov 2000, 2005, 2009; Mokroborodova 2008; Shapovalova 2008; Zvereva 2009).

There is also a literature that deals with Russian CMC on a more general basis, even if with a more limited focus on the purely linguistic sides of CMC (Trofimova 2004; Goroshko 2007; Nikitin & Avodina 2006). In Belarusian and Ukrainian linguistics, interest towards CMC is developing at a somewhat slower pace, but it is gaining importance (Vazhnik 2007; Brehmer 2006; Liankevich 2009; Rudenko 2009). Among the monographs devoted to Russian CMC, Sandra Birzer’s Transliteratsiia russkikh grafem v latinitsu v elektronnoi perepiske na russkom iazyke from 2004 stands out as particularly relevant to this article, since it raises the question of how Russians deal with the constraints imposed on the use of the Cyrillic alphabet by digital technology. A common solution is to use Latin script, and Birzer studies the e-mail correspondence typed in Russian with Latin letters by ten informants. She focuses on the relationship between Cyrillic and Latin and looks for the influence of standardised systems of transliteration or transcription.

The variation shown in her material is large: out of 33 letters in the Cyrillic alphabet, 20 were represented by more than one Latin variant. She concludes that her informants have tended to develop their own systems of transcription, which are most often influenced by the Anglophone system used in the UK and the U.S. (Birzer 2004).

These concrete solutions of transcription will not be dealt with here.5 I would like rather to focus on the extralinguistic context of this topic, which can be studied from different angles: i) a purely technological approach focusing on the technological constraints on using the Cyrillic alphabet in different contexts of digital technology, ii) an economic approach, taking into consideration the economic reasons

5 This article is part of a larger project on East Slavonic languages and the Latin alphabet in the era of new technology, in which the impact of the new technology will be investigated from different angles, i.e., extralinguistically (with regard to technology), linguistically, and metalinguistically (with regard to attitudes to the phenomenon). More information can be found here: http://www.uib.no/rg/future_e/projects/overview/east-slavonic-languages-and-the-latin-alphabet-in-the-era-of-new-technology. See also Paulsen (forthcoming) for a detailed linguistic discussion on how the Latin script is used in computer-mediated Belarusian, Russian, and Ukrainian.
for the direction technological development has taken, and iii) a political approach, looking at how political authorities have tried to influence technological development in order to allow for the use of the Cyrillic alphabet.

The three approaches are interconnected and difficult to keep apart from each other, but not of equal importance. Digital technology has been developing in a market economy where technological innovations and market mechanisms have taken the lead, and politicians and other political agents have been left to react to developments that have already taken place. Similarly, even if the development of new technology has obviously been driven by a desire to make money, it has been dominated by technological innovations, not purely the mechanisms of supply and demand, i.e., technological innovations have often created a demand that was not initially there (Castells 2001). Consider, for instance, the claim by one of the experts on the history of mobile phone technology that SMS technology was developed almost by coincidence, with no commercial motive: “The major part of the GSM community [...] regarded SMS to be more like an add-on that might increase the attraction of the GSM system without any commercial significance.” (Trosby 2004:187) The same has been said about the technology of PCs and the world wide web (Zittrain 2008:9,18). Thus, the main focus in this article will be on technology, and how technological change influences linguistic communication.

This article will be divided into a theoretical discussion of the phenomenon “technological determinism” and a discussion of what this understanding can tell us about how the development of digital technology affects the East Slavonic languages. The latter discussion will combine a philological method, i.e., based on existing textual material describing the situation, with sociological material, i.e., based on interviews with experts in the field conducted in Minsk, Belarus in May 2010. The advantage of this in-depth, qualitative approach is that it offers an opportunity to understand the underlying mechanisms of the technological development and its influence on the behaviour of the

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6 Six semi-structured, in-depth interviews on digital technology and language in Belarus were conducted with experts in the fields of digital technology, online communities and language. The interviewees were bloggers, web editors, linguists, programmers and journalists, and were picked to give a broad representation of the aspects of the Belarusian Internet that are relevant to my research.
members of the language community. In as far as this discussion is related to the basic mechanisms of the relationship between the Cyrillic and the Latin alphabet, they will also be relevant for other languages that use the Cyrillic alphabet, as well as for other languages that use non-Latin scripts.

**Media studies and technological determinism**

The development of digital technology has been interpreted as a technological revolution of global importance. The inspiration for much of the scholarly literature on the topic has come from Marshall McLuhan’s two seminal works The Gutenberg Galaxy (1962) and Understanding Media (1964). McLuhan is widely quoted not least because of his catchy academic style, and the phrase “the medium is the message” has become a leitmotif of media studies. McLuhan defines media as extensions of us as human beings. In his work they appear as a synonym for “technology.” Needless to say, this understanding of the term “medium” is much wider than the commonly accepted understanding of media as platforms of mass communication, i.e. newspapers, radio, TV. When claiming that the medium is the message, McLuhan points out that all media alter our living conditions, thereby drawing attention to them. Thus, he writes in Understanding Media:

> What we are considering here, however, are the psychic and social consequences of the designs or patterns as they amplify or accelerate existing processes. For the “message” of any medium or technology is the change of scale or pace or pattern that it introduces into human affairs. (McLuhan 1964:8).

In *The Gutenberg Galaxy*, for example, McLuhan pointed out how the introduction of the printing press changed the way we relate to language by creating a uniform linguistic system. As a result, the printing press contributed to the introduction of the concept of grammatical errors and thereby not only altered our pace of communication, but also our very concept of language. (McLuhan 1962:231–38). The historical development thus described by McLuhan indicates the potential significance of technological changes for language and gives grounds for an interest in media studies for anyone researching the development of language culture.

McLuhan goes on to claim that the message of one medium is another medium. Thus, “the content of writing is speech, just as the written word is the content of print, and print is the content of the
telegraph.” (McLuhan 1964:8) At the same time, the primary focus in his research is the message in a technological sense—on the basic, technical principles of communication, not the content in the semantic sense of the word (Gane 2005).

McLuhan’s media theory is picked up and developed further by Friedrich Kittler. Kittler agrees with McLuhan’s claim that the message of one medium is another medium, but takes issue with his view of media as “extensions of man,” as the subtitle to Understanding Media suggests. While McLuhan’s theory leaves man at the center of the theoretical construct, Kittler suggests turning the relationship between man and media upside down, and giving agency to the media. In this way, man becomes the extension of media, rendering him powerless against the media’s will. As Kittler says in the opening sentence of the preface to the monograph Gramophone, Film, Typewriter: “Media determine our situation” (Kittler 1999:xxxix).

There is good reason to ask how much of a difference there really is in the way the two media theorists understand the relationship between media and man, since McLuhan also presupposed some kind of a “backlash” influence by the media on man: the extension of human senses by new technology changes the relationship between these senses, and thereby changes man. However, the relationship between man and media is never made completely clear, and Nicholas Gane has suggested that while it remained an unresolved tension in McLuhan’s work, Kittler has been prepared to go all the way, into what Gane calls a radical post-humanism, that leaves no agency for man (Gane 2005).

Kittler’s reformulation has led to allegations in his address of technological determinism, and quite understandably so. This interpretation of Kittler, however, needs to be slightly nuanced, as John D. Peters acknowledges in the introduction to Optical Media, Kittler’s monograph, which has recently been translated into English. The reason for this misconception, claims Peters, is Kittler’s disinterest in humans and their role in the development of technology. Kittler is interested, however, in the role of institutions (established, one feels obliged to add, by those very humans), most notably the role of war and “the ways that marketing imposes compromises between consumers and engineers” (Peters 2010:7). As a result, we see that media are not really completely autonomous, their use is dependent on the historical epoch in question. In both Kittler’s and McLuhan’s work we realise that the lack of interest
in human agency does also imply a focus on the effects that the new media have come to have, rather than on the development of new media.

The present study is informed by McLuhan’s and Kittler’s theories. Digital media, the message of which is communication in general, and writing in particular—to invoke Amalia Gnandeskian’s claim of recent developments as the “ultimate triumph of the written word” (Gnanadeskian 2009:272)—have changed both the pace and the pattern of human communication. The development of digital technology, as it has been reconstructed by several of its historians, does indeed lend support to Kittler’s claim in Optical Media of technological innovations that:

only relate to or are responses to each other, and exactly this self-development, which takes place completely detached from the individual or collective bodies of humans, thereafter enacts its overwhelming effect on senses and organs. (Kittler 2010:30).

SMS technology, as explained by Finn Trosby in the previous section, developed almost by chance, i.e., as the result of a process that can be said to be detached from human agency, but after its introduction it has had huge consequences on our communication. And we cannot—and this is one of McLuhan’s favourite points—diminish any of the effects of SMS technology on our writing, to the effect that as long as people write properly, it does not affect language: “Our conventional response to all media, namely that it is how they are used that counts, is the numb stance of the technological idiot” (McLuhan 1964:19).

Kittler’s work on communication technology can be divided into three historical phases: the alphabet, the printing press, and the computer (Winthrop-Young and Gane 2006). The computer era is also the endpoint of a more specific technological development, where digital technology is seen as the ultimate stage in the development of media, since all media—radio, TV, books, etc.—can now be contained in one medium, the digital computer in its different and ever-smaller incarnations (Gane 2005:32).

The effect of this is, according to Kittler, that the workings of technology are becoming completely hidden from our human view. This is apparent in his discussion of the interplay between hardware and software. Software is generally seen as programmes to modify hardware, but, as Kittler points out already in the title of the chapter “There is no software” from his monograph Draculas Vermächtnis (1993), its role has been overestimated: the character of the software will always be dependent on the underlying premises laid out by the hardware through which it
operates. More importantly to Kittler, the software helps to conceal the true character of this hardware, it comes between us and the hardware, and makes it virtually impossible for us to understand how it works. The convenience of software is achieved through pre-defined “priorities, prohibitions, privileges and handicaps.” (quoted in Gane 2005:36) As Gane points out:

Kittler’s basic position, then, is that while computer-based technologies promise heightened interactivity, in fact they introduce and conceal processes of subjugation in the interplay between hardware and software. In this way, the pre-programmed machine is seen to take control of the user, not the reverse (as is generally assumed): ‘the commands of the application we use command us’ (Gane 2005:37).

In the end, Kittler points out, we no longer know how the technology we use works, and this is particularly striking in a situation when the digital devices are becoming smaller and performing ever more functions.

**Keyboard as medium**

Even if Kittler goes a long way in emphasizing that it does not work as we believe it does, there still is such a thing called software, and in the passage that follows, I will discuss two issues related to the differences between software and hardware: a hardware issue related to the availability of Cyrillic keyboards, and a software issue related to the compatibility of script encodings.

Notwithstanding the fact that Soviet industry had a long history of developing computers, the breakthrough of personal computers in the former Soviet Union came with the import of relatively cheaper and more technologically advanced computers from Great Britain, the U.S., Japan and China (SMM 2010; Prokhorov 1999:12–13), and with the cloning of foreign computers (Markelov 2004). This development became visible at the end of the 1980s (Rohozinski 2000:336). Gladys Ganley indicates that while there were perhaps 300,000 personal computers in the Soviet Union in the late 1980s, in the U.S. there were about 50 million. This situation started to change in 1988, when new customs regulations made it possible for individuals to import computer equipment. (Ganley

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7 The proud history of Russian and Soviet computer development is portrayed at the Internet museum Virtual’nyi komp’iuternyi muzei: http://www.computer-museum.ru/index.php.
1996:29). Similarly, Sergei Prokhorov has noted the fundamental changes in the computer industry with the collapse of the Soviet system:

The initial attempts at creating computer systems for schools and institutes and also for the consumer market were undertaken during the period 1987–1990 (e.g., Korvet and UK-NC) but have not survived in the competition with their foreign rivals, and essentially nothing from before the early 1990s has survived. Those companies that continued to assemble PCs and servers have completely changed to using foreign parts and supplies. (Prokhorov 1999:12).

This eventually led to the problem of incompatible keyboards—since the English alphabet consists of 26 letters and the Russian of 33, there were bound to be difficulties. How could 33 letters be fitted onto keyboards that had originally been designed for 26? Artemii Lebedev’s account of the history of keyboards in Russia and across the world highlights the problem. Even if there had been Russian typewriters with a standardized layout before the advent of PCs, the introduction of digital technology to Russia did not take this into account. Thus Lebedev claims:

But at the end of the 1980s we got PCs of foreign origin. No one in the world made or has any intention of making keyboards that took the length of the Russian alphabet into account. As a result someone just Russified what already existed (Lebedev 2004).8

This incompatibility problem was not nearly as complex as it was for non-alphabetical languages like Japanese and Chinese (Gottlieb 2000; Sproat 2010), but it sufficed to affect the availability of punctuation marks and some Cyrillic letters. There are several different versions of Cyrillic computer keyboards in use today, but, according to Lebedev, they all struggle with a lack of keys. This means that while on a Latin keyboard you can reach the most common punctuation marks such as the comma and the full stop with one key stroke, in the so-called lower register, to type a comma using a Cyrillic keyboard you must use the shift key to reach these punctuation marks in the upper register. This solution, in effect, slows down the typing of Cyrillic texts (Lebedev 2004).

Even if the early 1990s seem far away now, similar hardware problems are found today, in the development of handheld digital devices. Importantly, with the development of products like the iPhone,

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8 All translations are mine, MP.
iPad, and Kindle, mobile phones or PDAs are playing an increasing role in computer-mediated communication. In a discussion of methodological issues related to her research on computer-mediated communication, Carmen Frehner points out the difference between computer keyboards and PDAs:

WAP-emails as well as Internet-SMS/MMS underlie different conditions [from those of emails written on computers and SMS-messages on mobile phones], which inevitably influence the composition of the messages. The computer keyboard, for instance, makes typing much more comfortable than a mobile phone keypad and thus reduces the necessity to shorten words (Frehner 2008:28).

Similarly, in a review of new mobile phones, Iar Sobolev compares the solutions offered by different mobile phone producers available on the Russian market, and concludes that some letters in the Russian alphabet are not available on the standard keyboard of most PDAs:

Once again, the abundance of keys was not enough to enable complete Russification of the machine: the letters “ё”, “ъ” and, what is particularly sad, most of the punctuation marks, were only available either through an additional combination of keys, or in the English version. Rushing ahead, I should add that this illness has turned out to be quite vivid, and it has not been cured even to this very day (Sobolev 2009).9

This same issue lay behind a petition from the Russian NGO Zaria10 in Ul’ianovsk to the president of the Finnish company Nokia, asking him to make sure that the Cyrillic letter “ё” was restored to the mobile phones Nokia makes for the Russian market. In the news story reporting this petition, the journalist draws attention to the fact that the letter is also difficult to access on computer keyboards:

The Ul’ianovsk authorities also support popularisation of the letter “ё.” For two years now it has been compulsory to use the letter in all documents circulated by the regional government. Documents where the letter has been replaced by “e” are returned to be rewritten. The bureaucrats admit that they have already gotten familiar with using the “piquant” letter while typing, notwithstanding the fact that the designers

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9 It should be noted that the letter “ё” has had a semi-official status in the Russian language for a long time (Es’kova 2000, 2008).
10 ZA Russkii IAzyk—“For the Russian language.”
of computer keyboards are not “admirers”—the “ё” key has been chased off into the most inconvenient left corner (Chernysheva 2010).

The problem for the individual users is also a practical one, connected to the availability of Cyrillic keyboards in different situations. It is, for instance, possible to set up a keyboard designed with Latin letters to write Cyrillic letters, but many will find it difficult to type Russian without seeing the Cyrillic letters on the keyboard. Cyrillic letters are often missing on mobile phones that have been imported from outside Eastern Europe. Until recently, such illegally imported mobile phones dominated the local market (Russia 2007). The importance of these limitations to typing in Cyrillic was underlined in the interviews I conducted in Minsk in May 2010. One of my six informants spoke about a friend of hers who found it easier to type in Latin letters on her laptop, since the keyboard had Latin letters and she did not have any stickers to indicate the Cyrillic letters.\footnote{Interview with the blogger K.K. in Minsk, 20.05.2010. Transparent stickers with Cyrillic letters are often fixed on top of Latin keyboards to assist typing in both scripts.}

However, this hardware issue is not even remotely as complex as the software issue regarding the encoding of digital communication. For even if there is often a correspondence between the letter on the key we strike on our keyboard and the letter that appears on the screen, digital typing is a highly complex matter of binary codes turned into letters on the screen.

The arbitrariness of the relationship between keystroke and screen image is well known to anyone who navigates between a Latin and Cyrillic setup for the keyboard for their computer, and this is where the similarity between typewriters and computers ends. On a typewriter, what you see is what you get, while a computer keyboard can be programmed into doing pretty much anything (Sproat 2010). In other words, the software is what makes the mechanical technology of typewriters different from the digital technology of computers and keyboards.

As Richard Sproat has described, the process from keystroke to letter on the screen is filtered through the binary codes of bits and bytes. A byte is a fundamental unit in digital technology and consists of bits, eight bits per byte. The bit is the basic element, and holds the value of one or zero, which is why the technology is referred to as binary (consisting of two basic options) or digital (based on discrete, mutually
exclusive, values). The most common way of rendering text in the early development of digital technology was through the ASCII (American Standard Code for Information Interchange) standard. This standard was based on the fact that, since each byte consists of eight bits with two possible values each, a byte can represent 28, that is 256 distinct numbers, or positions to be filled by letters and other characters such as numerals and punctuation marks. This was more than enough for the English alphabet, which contains 26 letters. Even at 27, that is 128 positions, was enough to include the necessary letters in both lower and upper case, as well as the most common additional characters, which meant that in the ASCII standard, the eighth bit was unused.

Later, as it became obvious that one needed to be able to write in other alphabets as well, this unused position was exploited in the development of the ISO standard. Here, with the inclusion of the eighth bit, the final 128 positions were used for letters from other alphabets, such as diacritical signs needed for other Latin alphabets, and Cyrillic letters. This was done using parallel standards, however, so you would have one standard for Western European languages (ISO-8859-1), and one for Cyrillic (ISO-8859-5). This meant that the same position in this code would be used for different letters depending on which standard you used, the Western European, Cyrillic, or any other. The problem with this was that if you received a text written in a standard other than the one you used yourself, the text would become illegible.

The problem of several parallel standards was in principle solved by the introduction and gradual implementation of the UNICODE standard—this code allows for more than a million distinct characters, which should be sufficient to meet the needs of contemporary languages (Danet & Herring, 2007, p. 11).12

Meanwhile, encoding continues to play an important role in mobile phone communication, where the length of a SMS-message is dependent on the alphabet. Messages written in Latin letters can contain 160 characters, while messages written in others alphabets, such as Cyrillic, can contain only 70 characters (Hillebrand et al. 2010:93). The importance of these limitations to texting in Cyrillic was underlined in the Minsk interviews. One of the informants considered texting in

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12 As Sproat (2010:178) points out, the relationship between characters and glyphs is even more complex than outlined here, but this rather technical distinction is not of particular relevance to my argument.
Cyrillic letters to be “bad manners” (drenny ton), since it shows that one has failed to understand the specifics of the new medium.  

This digital innovation has turned out to be quite fortunate for some languages, such as Japanese, where there were never really any reasonably working typewriters (Gottlieb 2005:120). For a language like English, which laid the foundations for all encoding, there was not really any difference between a typewriter and a computer keyboard. The languages using Cyrillic have turned out to be less fortunate. Yes, the Cyrillic alphabet is now present all over the web, but its introduction to the digital world has been troublesome, and still faces some challenges. This notion is confirmed in a series of articles on the encoding of Cyrillic letters by the Russian IT expert and journalist Iurii Revich:

It got to the point where it was easier to send an e-mail using translit than to deal with the encoding. The situation improved slightly when almost everyone went over to Outlook. But even today you occasionally stumble upon e-mails which contain something like “Sb’f’el’e cnqond’! Ndmnbpelemmn on Mnbphfqjlns m’op’bkemh~” or simply “???? ?????! ?????? ???”14 (Revich 2002)

Revich’s account shows that the software question is two-sided, connected not only to the input of linguistic signs, but also to the output at the receiving end. In Jakobsonian (Jakobson 1981[1960]) terms it is a question of the entire channel used to communicate. The addressee might have a Cyrillic keyboard and the proper encoding set up on his computer, but if the addressee does not use the same encoding, the message might get distorted. But, what is even worse, in the case of e-mails, the message can be distorted even if the speaker and the listener use the same encoding, if it is passed through an intermediate server on the way from the speaker to the listener that does not support the encoding in question.

The Nokia case referred to above illustrates that we are dealing with a problem that is experienced by the users of this new digital

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13 Interview with the blogger K.K. A similar observation is made by the blogger N.I. (interviewed 19.05.2010), she claims to type faster in Latin on her mobile phone, and for this reason she prefers it to the Cyrillic alphabet for that particular medium.
14 Doshlo do togo, chto proshe bylo posilat pisma na translit, chem vozit’sya s perekodirovками. Polozhenie neskoko vypravilos’, kogda pochti vse pogolovno pereshli na Outlook. No i seichas prihoditsyastalkivat’ sya s pis’mami, v kotoryh soderzhitsya chto-nibud’ vrode “Sb’f’el’e cnqond’! Ndmnbpelemmn on Mnbphfqjlns m’op’bkemh~” ili voobshe “???? ?????! ?????? ???”... [Original in Latin letters, MP].
technology. This point was confirmed in interviews from the field trip to Minsk. Several of my informants referred to problems texting in Russian or Belarusian on their mobile phones. One of them pointed out that he wrote SMS-messages and updates on the social medium Twitter in Latin letters because his mobile phone did not support the Belarusian Cyrillic alphabet. Indeed, the mobile phone did have a Russian Cyrillic keyboard, but because of the discrepancies between the two variants of the Cyrillic alphabet, he did not have access to the Belarusian letters “î” and “ý.” Faced with this problem he opted for the Belarusian Lacinka, an adaptation of the pre-Revolutionary Belarusian Latin alphabet, which he found to be the easiest solution.15

Another concrete example of the challenges connected to writing East Slavonic languages was highlighted by the Ukrainian Iaroslav Fedorak, who excused himself in front of his followers on Twitter in September 2010 for writing translit, the ad hoc transliteration into Latin letters: “I apologise to all for the translit. I hate to text in Cyrillic on the phone. I don’t have a qwerty-keyboard.”16 Writing on Twitter under the nickname “jarofed,” Fedorak is an experienced blogger and editor of two Ukrainian blogs on management and blogging. In other words, he is among the most experienced users of social media in Ukraine, and should have no problems with finding a technical solution. Indeed, as he told one of his followers in a direct message on Twitter the same day: “I’m not saying that I don’t have access to Cyrillic. I’m saying that I don’t think it is convenient.”17 The point then, for Fedorak, is not whether a Cyrillic keyboard option is available, but how convenient it is to use, compared to the Latin one. This remark, of course, relates to Frehner’s observation above, where she points out that different technical devices underlie different conditions, and that this fact is bound to have implications on linguistic output.

15 Interview with the programmer S.P. in Minsk, 13.05.2010. The web editor N.S. (interviewed 14.05.2010) suggests another solution to the same problem: he combines letters from the Cyrillic and Latin keyboard setup. However, it should be noted that while the letter “I,” which is missing in the Russian Cyrillic, can be found on the Latin keyboard setup, the Belarusian letter “î” can not.
17 “ja ne kazhu, sh4o nemaje kryrylyci. Ja kazhu, w4o meni ne zru4no neju korystuvatysia.” URL: http://twitter.com/jarofed/status/24694607761.
It is clearly also a point for Fedorak to excuse himself for the use of Latin letters. This apology shows a sensitivity to the addressee’s perspective and indicates that Latin letters are considered to be a problem. The so-called translit he uses is rather unpopular among many Internet users in Eastern Europe, and its use is quite often prohibited in Internet forums. The reason for this scepticism is that the spontaneous and non-normalised translit is considered to reduce the readability of a text. This attitude was reflected in the interviews I conducted in Minsk. One of my informants claimed that while it was common to write SMS-messages in Latin letters, due to the limitations on messages in Cyrillic, to write longer texts in Latin would demand too much of an effort from the readers and was something she avoided.

Conclusions
McLuhan’s “the medium is the message” refers to the fact that technology becomes visible and influences our lives. The message of the digital media so far is the recasting of the relationship between the Cyrillic and Latin alphabets. As Kittler suggests, we should not waste our time looking for human agency in this process: this has not happened because someone specific wanted it to be this way. Rather it is the result of several parallel processes. There is nothing in digital technology itself that implies that it should be more difficult to write in Cyrillic than in Latin letters, but the way it has been developed in an Anglophone community has had implications for the possibilities of using Cyrillic.

Kittler claimed that there is no software in order to highlight the relationship between software and hardware, and to question the notion that software can be used to adapt hardware independently of the character of this hardware. In this article, I have identified some constraints on the use of the Cyrillic alphabet introduced by digital technology, constraints that are apparent both in hardware and software. The determinism of digital technology is a result of the increased

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18 E.g. the rules (§ 2.11) of the widely popular torrents-service rutracker.org (formerly torrents.ru, a site representative of the unofficial Internet hacker culture) warn the users that it is prohibited to use any other scripts than Cyrillic when writing in the forum. URL: http://rutracker.org/forum/viewtopic.php?t=1045. The same was pointed out by linguist U.K. (interviewed 16.05.2010) for the forum on the Belarusian web site tut.by, and is confirmed by the rules (§ 2.1.5), URL: http://forums.tut.by/rules.php.
19 Interview with the blogger K.K., supported by comments in interview with the linguist U.K.
complexity that this technology demonstrates. Today, desktop computers
are increasingly being replaced by laptops, which means that whereas at
one time you could replace the default keyboard with your own
customised one, you now have to deal with the keyboard as an integral
part of the computer. The shrinking of computer devices is in effect
reducing our opportunity as users to influence the technology.

The information gathered from the philological and sociological
investigations indicate the relevance of McLuhan's and Kittler's theories
for the Eastern European language communities after the introduction of
digital technology. The notion of convenience surfaces in the news story
from Ul'ianovsk, as well as in the reflections of my Belarusian informants
and the comments by the Ukrainian Twitterer. It appears as a key point
here. It is possible—in most, if not all cases—to use Cyrillic letters in
computer-mediated communication, and therefore the question is not
whether technology prohibits the use of the Cyrillic alphabet, but rather
of how it skews the relationship between the Cyrillic and Latin alphabet
for Eastern Europeans. It is also important to bear in mind that the notion
of convenience is relevant both for the addressee and the addressee, and
several of the given quotes show that this is something Eastern
Europeans include into their considerations of which alphabet to use.

The point of departure for the vast majority of speakers of
Belarusian, Russian, and Ukrainian is that these languages should be
written in Cyrillic. This is also how the languages are codified, and in the
case of the Russian language, it is also a juridical matter. The federal law
that the Russian language should be written in Cyrillic. With
the introduction of computer-mediated communication, however, this
special status assigned to the Cyrillic alphabet has been challenged by
technological arguments in favour of the Latin alphabet. In some cases
these arguments have been strong, as Revich maintained. Today they
may be weaker than they have been and they may be stronger when
using some types of technical equipment than when using other types.
These are factors that influence the linguistic performance of the
individual speakers, but it would be premature to conclude that the

20 Paragraph 3, point 6: “В Российской Федерации алфавиты государственного языка
Российской Федерации и государственных языков республик строятся на
графической основе кириллицы.” Available through:
http://constitution.garant.ru/act/right/10148970/chapter/1/.

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choice rests with the speaker, since an individualistic approach would underestimate the role of the constraints imposed by digital technology.

With pen and paper, writing depends on the writer’s personal skills, and the shift from one alphabet to another is effected by a twist of the hand. In the computer era, writing is dependent on predefined settings of the digital item at hand. The convenience of being able to communicate in real time with people on the other side of the planet has come at the cost of reduced influence on how this communication is conducted. More so, and this is a key point for Kittler, we do not even understand how the communication technology works. As I pointed out, the details of this process are too complicated to lay out, even in an academic article such as this. We do indeed not know what our writing does.
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