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Introduction

This year's issue of *Ars Educandi* is devoted to reconfigurations taking place in various areas of social space and dimensions of human experience in connection with the dynamic development of modern information technology[1]. Our research efforts presented in the articles share the understanding of modern technologies. This understanding is based on the cultural and anti-deterministic perspective, which means that we believe that technologies are not *a priori* agential. We assume that they are inscribed into a complex network of cultural relations, owing to which they acquire importance and reveal their constructive or destructive potential.

Jadwiga Charzyńska illustrates problems of technological reconfigurations in relation to the contemporary artistic practice developing at the intersection of art and science – a practice that draws inspiration from modern technology and science, while also being a critical commentary on the degree to which they interfere in human life. The subsequent papers discuss the problem of children's socialisation and learning in the digital culture, in the environment co-created by modern mobile technologies (Hussein Bougsiaa, Małgorzata Cackowska, Lucyna Kopciewicz). However, it is not the issue of mobile tools available to children which is the dominating thread of the discussion, but the cultural and educational content of the tools – apps. This issue is undertaken by both Michał Zając, and Małgorzata Cackowska. A different perspective on the problem is offered by Piotr Prósinowski in his paper focused on the socialisation potentials engrained in computer games. Yet another area of discussion concerning modern mobile technologies emerges from Tomasz Nowicki's article – here, mobile tools obtain the status of a technology which enables the cultural survival of an excluded social group in the face of the policy of eviction. The last article – authored by Piotr Krzywdziński – poses a question concerning the status of modern information technology from the perspective of post-humanism as a pedagogically important non-human actor.

Since the development of information technologies is closely related to the discourse of progress, social researchers assume that technologies are agential in

[1] The papers included in this volume were written as a part of project NCN 2013/09/B/HS6/03091 entitled *M-parents and m-children. Wireless socialisation and learning in digital culture*.

themselves and trigger – in a truly miraculous way, by their very existence – a certain revolutionary, emancipatory or democratic potential: they automatically liberate learning and creativity and foster development – in particular that of the youngest generations. We are convinced that information technologies do have such potentials if only they are activated by their concrete uses in contexts promoting equal, democratic and creative participation in culture. This task is connected to a lesser degree with the very technology, and to a higher degree with the social relations constructed around it. Therefore, the discourses in which mobile technology is defined as addictive toys leading to emotional emptiness and communicative poverty exclude the possibility of imagining new forms of educational practice and new forms of community that would enable the realization of the potential so that the use of quality modern technology would be a community-based social process rather than a privatized, individualized, and sometimes as much as elite activity.

Such reflection is in particular significant in the case of those who most need the benefits of participation in mobile culture – the excluded social groups and children, whose cultural competences are at the stage of development. Shortage of cultural capital makes (and will make) people live in qualitatively different spaces of digital culture, and the differences are not determined solely by one's budget and the availability of specific digital tools. They can be found in the sphere of the effective and creative use of modern technology, which means that people who are better off from the cultural point of view not only have an access to better equipment and apps, but they also have relatively better chances for better, more professional support directed at their practices and motivations related to the use of modern technologies.

It would be naive to expect that the groups in question will make an independent effort to reconstruct their cultural capital (neither are we convinced that parents will become sufficiently good digital culture guides for their children), and for this reason we address the task of the provision of good guidance to schools and institutions of culture, in which – as we believe – everyone should have a chance to cooperate with modern mobile technology, communicating and sharing the effects of their creativity with the society.

We kindly thank all the Authors for their input into the development of the current volume.

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Jadwiga Charzyńska
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Chimeras and Virtual Networks, or a Few Thoughts about the New World Order (on the Art-Science Relationship: the Example of the *Art+Science Meeting* Project)[1]

What does "art+science" mean in terms of the goals and programme adopted by the LAZNIA Centre for Contemporary Art?

The question above is by no means easy. New technologies brought forth by science's efforts are not just part of our everyday lives. As a matter of fact, we seem to be overpowered by their ubiquity. And art serves as a touchstone, a mirror and an interpretation of the world we inhabit, including its technological development.

If we undertake to stage arts events in which artistic practice is combined with scientific practice, we are obliged to account for the motives behind such ventures. When employing visual narratives to identify and explore the effects of social changes impelled by the widespread reliance on ever newer technologies, artists also educate their audiences, sometimes in playful ways, as gallery spaces permit and authorise fantasy and imaginativeness. Crucially, "these 'technologically determined' explorations are equally about explaining the complexities of social relations and providing an accurate depiction of our reality as about posing questions that prompt cultural reflection to catch up with cultural dynamics" (Żabicki 2007: 20). Jean Baudrillard insists that "the new technologies […] do *not* alienate me. Rather, they form an integrated circuit with me" (Baudrillard 2002: 58). In such projects, what is powerfully impressive are the multiple interactive works which engage the audience in their many various fashions, constantly making the viewers transgress boundaries and enhancing the integration of their bodies with machinery. Watching Stelarc's experimentations or research projects developed by Professor James Gimzewski,[2] we are quite justified to ponder whether Supermen and Spiderman actually still belong to the fantasy world? Where does this all lead us?

[1] This text is a revised and updated version of an article which appeared in Polish in *Ars Educandi*, vol. X, published by Wydawnictwo Uniwersytetu Gdańskiego [Gdansk University Press].

[2] For more information on the work of this distinguished scholar, visit http://gim.chem.ucla.edu/content/research

Reflection is not an easy matter in a world in which all knowledge tends to be offered in "wrappings" designed by marketing specialists and sundry promotors, whose aim is to goad the recipient to reach for a particular "product." By "wrappings," I mean here the schematic and, often, disappointingly superficial accounts of phenomena and processes. I believe that a race is underway to offer anything and everything in the most eye-catching form, while the content as such tends to be disregarded. Art which employs an "image" to communicate its meanings and, at the same time, makes sure to sustain a proper balance between the aesthetic and the formal, effectively exposes the cases of "empty wrappings."

Today, artists attend more and more carefully to scientific investigations, findings and achievements. Admittedly, art has always been fascinated with technics and technology, yet a truly seminal breakthrough came with the *Cybernetic Serendipity* exhibition curated by Jasia Reichardt,[3] in the wake of which galleries and museums in Europe and worldwide started to display a growing interest in projects at the intersection of art and science. The Laznia Centre for Contemporary Art is one of the first Polish galleries to address this theme in the dedicated, multiannual *Art+Science Meeting* project.

The pioneering pursuits undertaken by Frank Malina and György Kepes have since been picked up by many artists. Among the continuators are the artistic duo Monika Fleischmann and Wolfgang Strauss. We happened to present their work in Gdansk in 2011. *The Pleasure of Light* exhibition[4] showed kinetic experiments framed in images and light installations designed by Frank Malina and György Kepes.

In turn, in their *Performing Data* Monika Fleischmann and Wolfgang Strauss tackled modern technologies in the context of communication and data archiving. The work of Masaki Fujihata is an interesting illustration of how state-of-the-art communication methods can be employed in artistic practice.[5] His *Augmenting the World* exhibition held in Gdansk in 2017 fully relies on a merger of research techniques. It does not shy away from using traditional ways of data visualisation and, at the same time, invites the audience to play with the virtual world. As the show's curator explains: "In his works, he [Fujihata] involved several other people in his projects: artists he collaborated with and local communities alike. (…) It [Fujihata's art] is, at the same time, related to the past of new media art, springs from its history and, in this way, bridges the past of technological culture with its currently constructed future."[6]

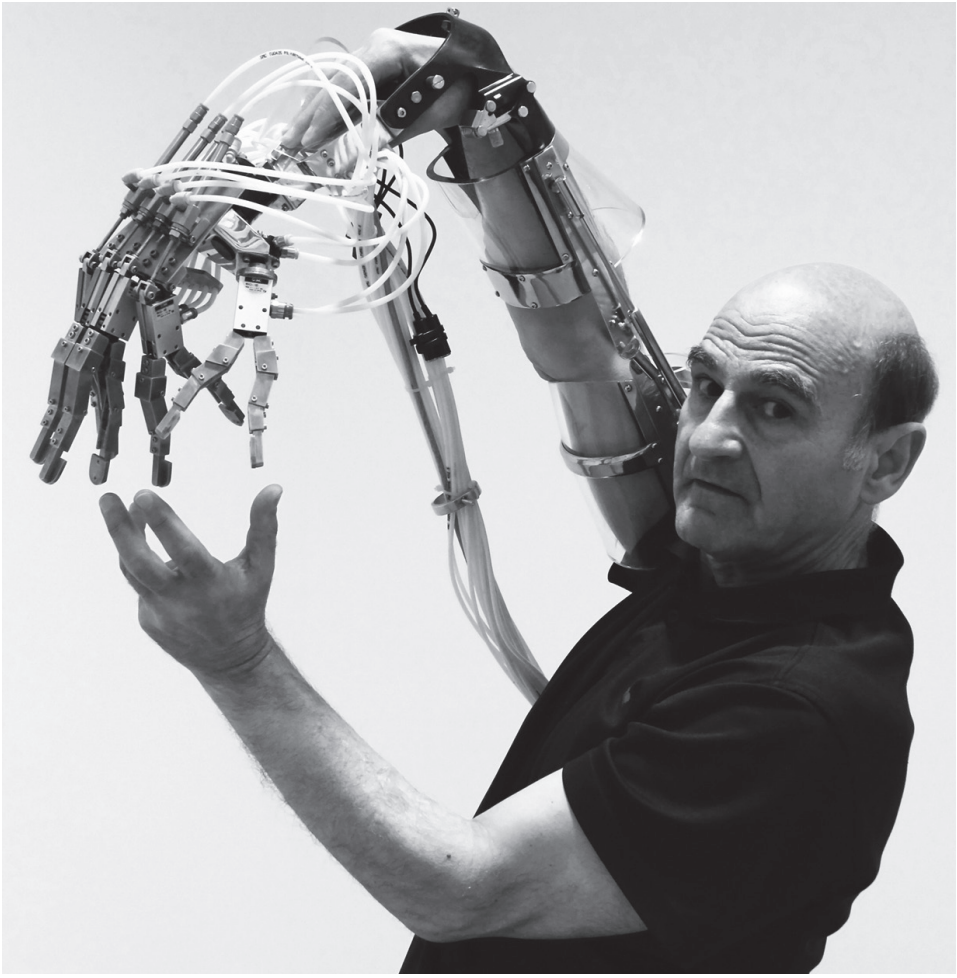
Artists such as Eduardo Kac, Oron Catts and Guy Ben-Ary collaborate with biotechnological and medical laboratories to study and experiment with neuronal networks, genetic codes and cell structures. Like Christa Sommerer and Laurent

[3] Held at London's Institute of Contemporary Arts (ICA) in 1968, the exhibition was one of two shows that were the first to document the meeting of art and modern technology. The other show was *The Machine as Seen at the End of the Mechanical Age* curated by Pontus Hultén at New York's Museum of Modern Art (MoMa).

[4] For more information on this issue, see the identically titled publication released on showing the exhibition at the Ludwig Museum in Budapest and at the Laznia Centre for Contemporary Art in Gdansk, available at www.laznia.pl (in the show's archive) and at http://artandsciencemeeting.pl/.

[5] For more details of Fujihata's art, see http://www.fujihata.jp/.

[6] For more information, see the exhibition's archive at www.laznia.pl and http://artandsciencemeeting.pl/.



1. *Extended Arm*, Melbourne, Hamburg 2000. Photo: Dean Winter

Mignonneau[7], they are also eager to employ tools helpful in building a virtual reality. Stelarc[8], Bill Vorn[9] and Ken Feingold[10] expand the language of art, adding engineering devices and interactive robots to it. Still, we should not be oblivious to the differences in their respective practices, with Stelarc prominently standing out with his dedication to experimenting with the human (his own) body and enhancing its capacities through mechanical arms and hands or prostheses which expand or strengthen limbs and, even, the entire body. His suspension

[7] The duo's work was shown at the *Wonderful Life* exhibition and Laznia's accompanying publication in 2012, as part of the *Art+Science Meeting* project.

[8] For more information on Stelarc's art, see http://stelarc.org/?catID=20247.

[9] For more information on Bill Vorn's art, see http://billvorn.concordia.ca/menuall.html.

[10] For more information on Ken Feingold's art, see http://www.kenfeingold.com/.

performance in which he is hanging from hooks stuck into his skin is perhaps the most famous experiment with the endurance of the human body. This exemplifies Stelarc's strategy of interrogating the human self and subjectivity.

Nearly all the artists listed above tend to employ IT instruments. One of the most interesting experiments I still revisit in my mind was the *Telematic Encounter* by Paul Sermon (1996)[11], whose work is defined as telematic art. Sermon's virtual figures and avatars which talk with people in real time are truly astonishing. And to evoke astonishment is, indeed, the role of art and the credo adopted by Damien Hirst, who introduced the philosophical discourse into the *Art+Science Meeting* series through an ensemble of works collectively titled *New Religion*[12]. Hirst's critical show was informed by the tenets of engaged art, part of the postmodern art scene. Rather than resulting from collaboration with natural scientists, his works were the outcomes of reconsidering the present condition of the world in terms of the social and cultural conjuncture the artist lived in.

Broadly conceived fantasy is the organising idea of Jasia Reichardt's exhibition *Nearly Human*[13]. Equally relevant in it are Richard Kriesche's industrial robots[14] and Tim Lewis's mule drawing a self-portrait[15]. And each of the works caters to another human need.

The social aspect of the phenomenon

Consumerism has imperceptibly come to dominate our modern world. Fuelled by advertising campaigns, the desire to possess increasingly more things and their ever newer models has crossed any lines we knew before. Self-focus and striving for comfort in life are, obviously, not condemnable as such (after all, this is part of the species survival mechanism), provided that they are not destructive elsewhere and do not impinge on the global balance. The world is an interlocking system of communicating vessels, where nothing remains stable forever. Observing consumerism "devour" us, we are inclined to conclude woefully that we have become unmindful of Erich Fromm's injunction: "our goal should be to *be* much, not to *have* much" (Fromm 2008: 13)[16]. A glimpse around suffices to realise that Fromm's famous question "to have or to be?" is profoundly relevant today. Each of the artists evoked above addresses this issue because it is artists' role to respond to the developments which can deeply affect our future and to vividly demonstrate their viewpoints, hoping they will be heard.

Art is a philosophical instrument. Visual artists philosophise using their discipline's distinct techniques – they narrate by painting, drawing, sculpting, photo-

[11] For more details about the artist, see http://www.paulsermon.org/.

[12] For more details about the exhibition, see its archive at www.laznia.pl and http://artandsciencemeeting.pl/.

[13] The exhibition was held at the Laznia Centre for Contemporary Art in 2015, as part of the *Art+Science Meeting* series.

[14] The piece titled *World Model* was shown for the first time at the Venice Biennale in 1986.

[15] For more information about Tim Lewis's art, see http://www.flowersgallery.com/artists/view/tim-lewis.

[16] Fromm in this publication quotes Karl Marx.

2. *Masaki Fujihata, Augmenting the World,* exhibition in LAZNIA CCA, Gdańsk, Photo: Paweł Jóźwiak

graphing or organising artistic actions. While in the times past the language of art was comprised of painting, drawing and sculpting, over the last hundred years we have witnessed an explosion of technological advancement, which has given artists ready-made paints and other painting materials as well as cameras and computers. IT, television, radio and the Internet have revolutionised the social order, and art is an expression of these transformations. Having conquered seas and oceans, the human imagination uses super microscopes to penetrate cells and atoms, and photography visualises these findings. We have managed to see the invisible. Our curiosity scrutinises space by means of powerful telescopes and probes, while the Great Hadron Collider experiments designed to solve the mystery of the origins of the universe induce as much interest as anxiety.

Constructed over centuries on the basis of Christian and democratic principles, the social order in Europe is beginning to crumble under the pressure of the events in the Mediterranean. We still do not know how far the surging wave of aggression will go. The technological development can be instrumental in handling this difficult situation, but the same tools can precipitate a catastrophe as well. The pace of data flow on the Internet helps transfer information very efficiently, but also makes this information prone to manipulation. Radio devices can control remote apparatuses. What is the face of the modern Frankenstein? Or should we rather talk of a multi-headed chimera? The fear triggered by everyday news can equally motivate productive action and wake up the beast. These anxieties are addressed in *New Religion* and in the experiments staged by Stelarc and Ken Feingold.

3. *Mule make mule*, Tom Lweis at *Nearby Human* exhibition at LAZNIA CCA, 2015. Photo: Paweł Jóźwiak

Artists also examine what we do to nature. The *Crude Life* exhibition designed by Oron Catts and Ionat Zurr[17] explores experimentation with organic tissues. Can we grow a steak out of a cell without killing another creature in the process? How would it impact the food chain, which governs all species and the whole of nature?

Guy Ben-Ary and his research collaborators investigate the mysteries of the brain and the possibility to re-construct nerve connections. And James Gimzewski[18] works on building an artificial brain. If his efforts succeed, such a brain will be millions of times as quick as the human brain. It does not sound like good news to us, humans, does it? Can the human body be equipped with additional arms and hands and made basically indestructible? These mysteries are fathomed by Stelarc.

[17] For more information on the duo's art, see Laznia's publication accompanying the *Crude Life* exhibition at www.laznia.pl, http://artandsciencemeeting.pl/?page_id=485 and http://www.ibmc.up.pt/hybrid/content.php?menu=6&submenu=59, http://www.tca.uwa.edu.au/.

[18] Gimzewski talked about it in an interview for *LA Times* in February 2014: http://www.latimes.com/local/la-me-c1-ucla-gimzewski-chip-20140225-dto-htmlstory.html (accessed on 12.09.2017).

Showed at the *Meat, Metal and Code: Contestable Chimeras* exhibition[19], Stelarc's experiments express the human drive to transgress boundaries.

Artificial life – the "tape of life" replayed in new technologies as a set of information – inspires Christa Sommerer and Laurent Mignonneau[20], who have worked for two decades now with interfaces and interactive devices in which computer algorithms simulate the evolution processes and behaviours of living organisms. Their work exemplifies how new technologies adapt the old ones and how such pursuits are inscribed in the long history of scientific inventions. The theme was explored in Laznia's *Wonderful Life* exhibition in 2012.[21] Eduardo Kac's famous GFP bunny[22] was a pioneering project of DNA experimentation, which founded an art discipline referred to as bio-art. Kac's *Lagoglyphs* – associated with the famed bunny – was shown in Gdansk in 2009[23].

Concluding observations and remarks in the context of Laznia's unique project

Artists and theorists consistently seek to understand and explain the complexity of contemporary civilisation, rigged with technical solutions designed to improve the quality of life. In their efforts, they draw on cultural patterns, local traditions and global concerns. At the same time, they highlight repeatedly that the modern world is fraught with contrasts: there are places where people have completely lost contact with nature and regions where nature keeps people in check. The limited perspective of individual human life will likely fail to grasp the intensity, potency and effects of the powers of nature at work since these will be fully revealed only centuries and eras later.

In the affluent regions of the world, where money is the measure of success, the consumerist lifestyle relegates spiritual values to the margin. The need to put in order and understand our environment, with its characteristic pragmatism, clashes with people's ideas of a "better" life or looming dangers. Humans are naturally predisposed to fear changes, and the sense of security is founded on stability while the world is now transforming at a staggering pace. This is true about all spheres of life and about most places across the globe. The invention of electricity and the electric bulb made us abandon the rhythm of day and night in organising our lives; airplanes make it possible to get to a remote corner of the world within hours; and the Internet and satellite connections allow real-time communication with any place on the planet without leaving our work desks, provided, of course, that we possess a networked device. The ease with which information is sent and received has caused enormous confusion in verifying and arranging the collected

[19] For more information about Stelarc and the *Meat, Metal and Code: Contestable Chimeras* exhibition, see the likewise named publication released by Laznia in 2014 and the exhibition's archive at www.laznia.pl and http://artandsciencemeeting.pl/.

[20] For more information, see the duo's website at http://www.interface.ufg.ac.at/christa-laurent/.

[21] For more information on this topic, see the likewise titled publication released by Laznia and the exhibition's archive at www.laznia.pl and http://artandsciencemeeting.pl/.

[22] http://www.ekac.org/transgenicindex.html.

[23] http://laznia.pl/aktualnosciart,738,2009_eduardo_kac_lagoglyphs.html.

data in virtual space. Data archiving has become a challenge to archivists and IT professionals. Copyright has taken on a new dimension. At the same time, we have started to ponder what kind of thinking we need – for the ubiquitous haste, the growing indiscriminate appetite for things and the overwhelming lack of time to take a detached view, all limit our perceptual horizon.

Since 2011, the Laznia Centre for Contemporary Art has been involved in a project called *Art+Science Meeting*. The idea of the project had been brewing for a few years and, eventually, when Gdansk applied to become the European Capital of Culture, I joined forces with Professor Ryszard W. Kluszczyński to come up with the final concept of the series. We described our respective positions and insights. In my introduction, I reflect on the following:

> How not to get lost in the world enslaved by excessive information? Can we defend ourselves against omnipresent manipulations coming from every direction and through every channel – from aggressive advertising to subliminal messaging? What if we actually are able to defeat our weakness, our inclination to destruction; what if we actually are able to create a better world? Pursuing an ideal may turn out destructive, especially when ambition overwhelms empathy.
> Artists are the "sensitive" social group whose task is to address all these topics essential to our civilisation. They dare to touch issues so far unexplored. Through art, they pose questions which have not yet been answered by science – which searches for hard evidence. Art allows us to ask questions even before an appropriate language has emerged to utter the answers. Artistic strategies or a creative process at each stage can be uncovered if the artist considers exposing the behind the scenes essential to the artistic goal. […] By talking about new communication methods and the application of visual arts in illustration, examination or the description of scientific problems, we are introducing the viewer to technical solutions which have finally made it to the market or are just about to, and will merge into daily life just like many other inventions, completely unknown less than 50 years ago and yet, as of today, indispensable in the daily life of the contemporary world. Addressing issues so often involving ethical norms and customs in discussions anchored in an art project, we hope to enable the public to express and face their own doubts – through art (Charzyńska 2011).

Professor Kluszczyński explains our goals and pursuits in the following way:

> The transformations that can be observed taking place in the work of artists, a multidirectional hybridization, is increasingly guiding art towards, among other things, wide-ranging areas of research in both the humanities and the social sciences, as well as in the direction of those disciplines known as the hard sciences. Today, the leading tendencies in art are multidisciplinary and transboundary. Progressive art is taking up the tasks of cultural studies, a trend most commonly seen in critical theory, as well as in creative dialogues between art and biotechnology, genetics, computer science, nanotechnology, research into artificial life and artificial intelligence, and many engineering disciplines (Kluszczyński).

An important consideration for us was the widespread tendency for disciplines to set themselves apart in a kind of splendid isolation, which was particularly conspicuous in the scarcity of contacts between humanists and scientists. In 2011, a conference titled *Towards a Third Culture: Coexistence of Art, Science and Technology* was held, in which Charles Percy Snow's book *Two Cultures* was systemati-

4. *Life Writer* ©2006, Christa Sommerer & Laurent Mignonneau

cally referred to, and the work of such people as Frank Malina was copiously discussed (the conference proceedings, edited by Kluszczyński et al., appeared with the identical title in 2011). Malina is an extremely important person, first of all as a founder of *Leonardo* in 1968[24], which serves as a platform for sharing experience and opinions among creative practitioners. Despite various ups and downs, the journal still exists, also in the electronic form now, and is associated with an array of complementary enterprises.

The 2011 Gdansk conference was accompanied by exhibitions. Alongside Malina, whose works were put on display jointly with György Kepes's in *The Pleasure of Light* show[25], the role of technology in the modern world was explored by Monika Fleischmann and Wolfgang Strauss in the *Performing Data* exhibition, part of the *Art+Science Meeting* series[26]. An important theme tackled in the show was that of the increasingly digitalised collection, archiving and distribution of data. The scholars and artists investigated also the tools facilitating the construction and browsing

[24] http://www.leonardo.info/leoinfo.html.

[25] For more information, see www.laznia.pl and *The pleasure of light. György Kepes, Frank J. Malina* (Warszawa-Gdańsk: Wyd. Narodowe Centrum Kultury i Centrum Sztuki Współczesnej Łaźnia, 2011).

[26] *The Performing Data. Monika Fleischmann+Wolfgang Strauss* (Warszawa–Gdańsk: Wyd. Narodowe Centrum Kultury i Centrum Sztuki Współczesnej Łaźnia, 2011).

of such archives as well as using them for educational purposes. Masaki Fujihata's concerns and approaches are similar. However, computers, software and machines are intertwined with the organic world of humans, animals and plants. Explorations of the phenomena in which technic meets biology are also communicated in the early interactive installations of Christa Sommerer and Laurent Mignonneau and in several projects of Eduardo Kac[27], who came to Gdansk's Laznia in 2009[28], triggering an array of impassioned responses with his tales about his genetics-based works. A particularly heated controversy was stirred by the aforementioned bunny, whose genetic code was modified at the zygote stage. In 2011, Victoria Vesna[29] in collaboration with the chemist and nanotechnologist James Gimzewski presented the *Blue Morph*[30], an installation referring to research on the butterfly species of the same name. One year later, Oron Catts and Ionat Zurr came to show their profoundly biotechnological projects. *Crude Life*, as the exhibition was called, initiated Laznia's cooperation with the Intercollegiate Faculty of Biotechnology UG&MUG. The exhibition germinated in the university laboratories under the committed care of their staff to later develop and "live" a life as envisaged by the artist.

Other perspectives on the human-machine relations have been presented by Stelarc, Ken Feingold and Bill Vorn. Stelarc firmly advocates a symbiosis between the biological and the technological, the coupling of meat and metal. As miniature devices developed by nanotechnology enter into the human body, a chimera is born. Ken Feingold approaches this phenomenon in a different way. His moving sculptures, often equipped with voice synthesisers and having the artist's face, interact and talk with the audience. Arranged in this way, they unmistakably suggest their philosophical underpinnings. Feingold, as Erkki Huhtamo puts it, "has traversed many landscapes, mindscapes, and means of expression" (Huhtamo 2014: 37). Bill Vorn[31], in turn, draws on the tradition of using automata and robots in art, uses a language characteristic of his theatre (as Feingold does) and labels his work "robotic art" (Vorn 2014: 15). The portrayal of the human need of copying, or even reinventing, a part of ourselves is given an additional touch by *Nearly Human*, an exhibition addressing robotic art history curated by Jasia Reichardt. The show, described by Reichardt as a tale of human fantasy translated into the language of art, features over seventy works, including archival photographs, drawings, films and interactive sculptures. In 2016, Dmitry Bulatov curated the project *Die and Become! Art and Science as the Conjectured Possible*[32], which examined the Romantic

[27] http://www.ekac.org/.

[28] For more information about the artist's visit to Gdansk, see: http://laznia.pl/edukacja-art,288,2009_immediate_art_eduardo_kac_transformacja_zycia_mutacja_sztuki_.html.

[29] http://victoriavesna.com/.

[30] The *Blue Morph* show was held by Gdansk's Baltic Sea Cultural Centre in 2011 as part of the *Art+Science Meeting* series. Victoria Vesna describes her project in a text available at http://artandsciencemeeting.pl/?page_id=408.

[31] For more information on the topic, see http://artandsciencemeeting.pl/ and www.laznia.pl as well as the publication accompanying the Gdansk exhibition: *Robotic Art and Culture: Bill Vorn and his Hysterical Machines*, ed. R.W. Kluszczyński et al. (Gdansk: Wyd. Centrum Sztuki Współczesnej ŁAŹNIA, 2014).

[32] For more information, see http://artandsciencemeeting.pl/ and www.laznia.pl, as well as the publication accompanying the Gdansk exhibition: *Die and become! Art and Science as the Conjectured Possible*, ed. D. Bulatov (Gdansk: Centrum Sztuki Współczesnej ŁAŹNIA, 2016).

5. *Victimless Leather* at *Crude Life. The Tissue Culture & Art Project* exhibition at LAZNIA CCA, 2012. Photo: Krzysztof Miękus

perception of man and his need to transcend his selfhood. "Art comes into being when the demands of universality no longer serve as the justification of the process of understanding mankind and the world" (Bulatov 2016: 10).

For over twenty years, *Ars Electronica* has been *the* venue in Europe where to see the projects combining art practices and scientific research. It is an annual celebration of creative individuals. The festival is more than just a competition. Many of the projects presented look into the most urgent problems of our world, in which the technological is interwoven with the ecological and the social. On display are also models and visualisations of machines and robots already put to practical use. Playful allusions to our propensity to record, measure and quantify everything are galore[33].

[33] I will again evoke Christa Sommerer, Laurent Mignonneau and their presentation (http://www.interface.ufg.ac.at/christa-laurent/WORKS/FRAMES/FrameSet.html) and Agnes Meyer-Brandis's *Teacup Tools* entered into the Linz competition (*CyberArts 2015*, Hatje Cantz Verlag for Ars Electronica, 2015, pp. 66–67, http://www.ffur.de/tea).

In Poland, it was the Laznia Centre for Contemporary Art that undertook to present these developments systematically. It is, indeed, a pioneering effort, nationally speaking. We collaborate with Warsaw's Copernicus Science Centre, the Intercollegiate Faculty of Biotechnology UG&MUG and a range of foreign partners associated with particular artists or, even, works. We have won over Jasia Reichardt, a legend who, in Poland, is known first of all for her efforts at promoting the work of Franciszka and Stefan Themerson. Outside Poland, she is thought of, first of all, in connection with the breakthrough show of *Cybernetic Serendipity*[34] held at London's Institute of Contemporary Arts in 1968. Reichardt has paid ample attention to art-and-science links throughout her career. She grew up in the Themersons' home, which was formative to her intellectual development as she could witness the Common Room meetings active (in 1957-1959) in the basement of the Gaberbocchus Press office. It was there that she met the champions of a unique common philosophy of art and science, which was, in its day, revolutionary in Great Britain and, even, worldwide. Reichardt's exhibition cannot be occluded by MoMa's concurrent *The Machine as Seen at the End of the Mechanical Age*[35], and both exhibitions are considered iconic today.

Laznia's project and education through art

Education through art is a constantly discussed and re-discovered idea. A few decades ago, Polish museums and galleries offered only guided tours of exhibitions (if at all). However, as the audience were increasingly confused facing contemporary art, efforts were made to hold conferences, workshops and lessons introducing issues of art history, including the latest developments in the arts. A lot of attention is now devoted to the role of arts in education and art itself as a cultural and social phenomenon. But still the focus is on the tools to be used in engaging our audiences and workshop participants. One of the recurrently discussed topics is the role of the institution of culture as defined by a particular individual.

> The principles of the personalist concept of organisation management are accompanied and supported by the principles of servant leadership introduced to scholarly discourse by Robert Greenleaf. […] A true leader, an organiser of social life involved in the management of an institution, [who] feels a need to serve others by assisting or helping them as they strive for self-perfection (Skutnik, 2014: 36).

For in the market-ruled world, individualism and recognisability encapsulated in the term "brand" determine visibility and, consequently, the potential audience's interest. It makes sense to define the goals of this form of contacting viewers of various art shows, particularly those exhibiting machines or objects produced in laboratory processes. This form of presentation is likely to trigger questions as to

[34] For more information on the topic, see http://cyberneticserendipity.net/ and https://www.ica.org.uk/whats-on/cybernetic-serendipity-documentation.

[35] For more information on the topic, see the MoMa archive at: https://www.moma.org/momaorg/shared/pdfs/docs/press_archives/4149/releases/MOMA_1968_July-December_0081.pdf?2010.

the reasons behind it. When we take exhibits out of laboratories, we make sure to provide comprehensive information about such pieces, but the viewer can always ask why the artists chose this way to tell their tales. What questions did they mean to ask? This is a genuine riddle.

Many years ago, I received a present: a set of electronic-microscope photographs of vitamin structures. The colourful, abstract images discovered by means of the sensitive device impressed me immensely. Talking about his fascination with drugs, Damien Hirst highlights the need of contrasts in art. People need stimuli to understand what is going on around them. Communication is effective when its message moves the addressee.

We should bear in mind that "first, anyone who seriously intends to become a philosopher must 'once in his life' withdraw into himself and attempt, within himself, to overthrow and build anew all the sciences that, up to then, he has been accepting. Philosophy – wisdom (sagesse) – is the philosophizer's quite personal affair," as Edmund Husserl insisted (Husserl 1977: 2). In educating, effective communication is of primary import. Whoever ventures to teach is up against themselves. The human imagination and art help envelop knowledge in feelings, give it a shape and a colour and, in this way, make it accessible. This is exactly the role a modern gallery and a modern museum must perform. As someone said some time ago during a debate in Poznan[36], "culture is not for all, but it is for everybody. And its responsibility is to give each and everyone of us, instead of just 'the culturally competent,' a chance to realise his or her personal potential" (Skutnik, 2014). Essentially, this pertinent thought defines the role of contemporary art from the perspective of both artists and audiences.

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Abstract

Chimera and Virtual Network, or a Contribution to the New World Order (Art and Science Relationships on "Art + Science Meeting")

The "Art + Science Meeting" project presents art and science through an expanded exhibition, workshop, publication, meeting and debate program as two different perspectives of the same reality. The interdisciplinary open to discussion character of the project gives a possibility to present the achievements of world's most outstanding artists who create in the hybrid area of science and technology: art and biotechnology, genetics, computer science, nanotechnology, research into artificial life and artificial intelligence… It also allows a wider look on the contemporary civilization for which science and technology are progress conditions but still remain opaque.

Keywords

art, science, technologies, biotechnologies, machines

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Children in digital culture

Our text intends to provide an overview of the phenomenon of new mobile digital technologies and an insight into their educational and culture-creating potential in the area of early education. To put it more precisely – we are interested in the phenomenon of mobile touchscreen devices (smartphones, tablets) in the context of their cultural, social and educational meanings.

The problems discussed in our text fall within the interdisciplinary research area concerning the "digital socialization" of children: the pedagogy of culture, digital anthropology, sociology of daily life, sociology of child-rearing, pedagogy of media and pedagogy of early education. We are particularly interested in the cultural constructs of childhood in the daily life which is increasingly connected with mobile wireless devices.

The appearance of such devices generated numerous discussions in the area of the social sciences and humanities, concerning the change of the essence and nature of social relations, models of culture, learning and socialization, as well as the development of new models of identity in the contemporary information society (Orton-Johnson, Prior 2013). We are also interested in the changes taking place in the family field as an area of intergenerational communication, socialization and rearing of children as well as learning in connection with the mobile revolution (Castells et al. 2004). In other words, we are trying to answer questions concerning the being of an m-child i.e. "wireless" socialization and learning (and the related dispositions) as well as "mobile" family life in the digital culture in Poland.

Our overview of the said phenomena is related to the theoretical and methodological approach of British cultural studies, child-rearing sociology and the pedagogy of early education (in particular in the area of its interest in the cultural construction of childhood, development of children's identity, socialization and emancipation of children), and the sociology of gender (cultural construction of motherhood and the related changes) rather than a functionalist look at new technologies from the perspective of the effectiveness and optimization of the learning of the youngest and early school children. However, the above does not mean that we treat the problem of the change of learning models as unimportant. What we are interested in is not so much learning as an isolated cognitive process as the learning grounded in culture (digital and mobile communication), which designs its conditions of possibilities.

In this article we make references to the concepts of *digital natives* and *digital immigrants*, which indicate one's degree of familiarisation with the digital culture together with the cognitive, cultural and social consequences resulting from differences and inequalities in this scope (Prensky 2001b). We are conscious that the concepts entangle us in specific disputes concerning the issue of generations and the cultural status of new communication technologies. Such discussions are also centred around the question of whether we are dealing with new culture designing a different quality or structure of science and socialisation, or whether mobile communication technologies are only a slightly changed (technologically enriched) learning environment, which remains unchanged in its structure (Ally 2009). We do not intend to close these disputes ideologically and arbitrarily confirm the correctness of one of the cultural diagnoses concerning digital technologies. We only want to present a preliminary overview of the new, not yet well examined field of the potential empirical studies bordering on cultural studies and early education, making references to an interesting set of concepts, theories and the possible research approaches.

Theoretical fore-field and the basic assumptions

The appearance of mobile wireless communication devices (smartphones and tablets) is a relatively new phenomenon, which has not yet been problematized on the socio-pedagogical ground in Poland. References to the family context of the functioning of mobile devices and problems of the socialisation of children, in particular in the youngest groups, are rather scarce in international source literature as well. There are several reasons behind the gaps in the knowledge on the socio-cultural context of the functioning of the youngest children in the "wireless sphere". Without any doubt, the first one is the "novelty effect" – mobile devices appeared in the world and in Poland relatively recently. The second one is the nature of the research which is carried out (both in Poland and in other parts of the world). Although many research works concern children – *Dzieci Sieci* (*Children of the net*; Siuda, Stunża 2012), *Dziecko w świecie mediów elektronicznych* (*The child in the world of electronic media*; Izdebska 2007) – the careful reading of these research works and reports shows that their authors refer to teenagers (understood as children aged from nine to sixteen), omitting the youngest children as active users of mobile devices. The fact that research is focused on teenagers comes as no surprise since teenagers use mobile devices most comprehensively, fully and creatively. It is mainly with them in mind that authors and suppliers of new communication technologies endeavour to improve the functionality of devices and extend their possibilities (additional functions and services).

The most numerous analyses devoted to early school children (and their parents) are carried out for marketing purposes. Surveys carried out by the Kid Industries agency (on 2,200 parents of children aged from three to eight) in the USA and Great Britain at the end of 2011 show that 15% of children use their parents' iPads on a daily basis, 9% have their own iPad, and 20% do not have their own devices. As many as more than 77% of parents participating in the survey were convinced that the use of tablets by children had a positive influence on their de-

velopment, stimulating creative potential and logical thinking (Pope 2012). The parents' optimism related to these "miraculous devices" is used in marketing, and the children's population has become a serious target group, to which a dynamically growing offer of applications is directed[1].

At the same time, some developmental psychologists and therapists started a moral panic in connection with the detrimental effects of the use of touchscreen devices by small children. According to these psychologists, such contact was to result in developmental problems, impaired concentration, nervousness, exacerbate ADHD and lead to autism (*Is the iPad bad for children?* 2012). A four-year-old British girl – the youngest child undergoing treatment for addiction as a result of her strong addiction to her iPad – became living proof of the detrimental impact of iPads on children (Seales, Harding 2013).

The environment of the parents of children suffering from autism gave a serious blow to the psychological discourse of the harmfulness of tablets. This group argues that these devices have a "miraculous" effect on the treatment of their children, relieving them from some effects of autism (Brandon 2011; a great progress in the area of communication and the ability to control information from the external world reaching the child). The first applications addressed to autistic children were designed for iPads, but nowadays programs for other touchscreen devices (including those using the Android operating system) are also available. Parents and teachers confirm that the simplicity of operation, visual elements and the intuitive nature of touchscreens combined with the portability and attractiveness of tablets and iPads caused a breakthrough in many children with a whole spectrum of disorders and dysfunctions. According to Gary James, the author of a website featuring reviews of applications for children with special educational needs, tablets give the (socially understood) voice back to children. Parents turn their attention to the inclusive nature of mobile devices, which do not at all resemble the stigmatising and prominent auxiliary educational materials which their children have to use in social contacts. What is most important, the touchscreen eliminates some typical problems suffered by children with autism or physical disabilities: the use of a keyboard and the understanding of the relationship between the mouse and the cursor.

Our surveys entitled *M(obile) Mama* (April–June 2013) provided us with empirical data showing that Polish pre-school and early school children are active users of mobile devices (the youngest user was nine months old, and the oldest one – nine years old), and that m(obile) mothers see pro-developmental potential in mobile devices and are very happy to include them in their own children's socialisation field. The sphere of socialization practices related to these devices covers changes in the area of the exploration and the organization of the world by the child (the agential touch) and the system of family (and perhaps also school) relationships. As it was discovered, mobile devices facilitate children's cognitive independence. They are also a basis for the children's relatively equal position in relation to adults – they make it impossible for adults to exercise full control over the kids' activity. The *M(obile) Mama* study showed some important changes in the area of practices (action): the social unattractiveness of stationary computers,

[1] We found iPotty – a potty with a built-in touchscreen – the most unusual product (Urist 2013).

children's frustration resulting from contact with them as well as an increasing attractiveness of touchscreen devices resulting from the simplicity of their operation. As results from the findings of theoreticians and researchers of the information society, a stationary (traditional) computer is becoming a symbol of a certain (past) stage of development of the society, and the potential impact of mobile devices is bigger than that of traditional computerisation (not least because they are much more popular in households). Manuel Castells argues that the information revolution gained a new momentum from mobile devices (Castells 2004). This is not about current trends, but a radical change of the learning and socialisation environments as well as access to the digital culture (intuitive operation of the touchscreen has epistemological consequences).

Our reflections concerning mobile digital technologies are clearly inspired by the assumptions of social constructivism, as they relate to the mutual, cultural and social relationship between an active object (tablet, smartphone) and a human being. However, we also try to step beyond the constructivist and phenomenological approach to culture, which – on the grounds of the global social sciences and humanities – markedly prioritized non-material cultural processes (giving or negotiating meanings), ignoring the agency of objects (Olsen 2003). In other words, we will try to turn our attention to the relational character of objects (artefacts) functioning in networks connecting various types of beings: people and non-people (Latour 2010: 526), indicating that things also have social agency.

Therefore, we are interested in the processes connected with the sphere of practices (action), meanings (perception and assessment), and the family field (as a field of action of social forces) – as it is there that the cultural meeting of the child and an active object (and the parent making the active object available to the child) takes place. We will also turn attention to the potential cultural clash between school and the digital "mobile culture".

Part I. Active objects in the field of family relationships

The task we consider of the utmost importance is an analysis of the process of the socialization of children (their initiation) into the "world of touchscreens" and mobile telecommunication technologies. Does the initiation take place spontaneously or is it stimulated and controlled by an adult mediator? How do children learn to move in the world of mobile devices? What needs, emotions and reflections accompany them in their daily practice to which they include an active object with a touchscreen? In what way and how soon do children become competent users of such devices (by touching everything which can be touched on the screen, by trial and error, by asking adults for help or by trying to recreate an observed sequence of action)? These questions are significant in the context of our interest in the processes of knowledge creation by children.

Paolo Ferri and Susanna Mantovani argue that a very important, albeit often omitted aspect of the process of the child's entry into the world of new communication technologies are adult mediators (parents, teachers). The authors turn attention to the sphere of the mediators' personal theories, beliefs, and often no less than prejudices against the children's contact with mobile devices (Ferri,

Mantovani 2006). These theories are based on beliefs concerning the harmfulness or harmlessness of such devices for the health of children, their physical, cognitive, and moral development, the children's appropriate age and abilities, their susceptibility to addiction with gadgets, the permitted time during which objects can be used, the degree of the parental/teacher's control over the child, the educational or play essence of the relationship between the child and the object, the value given to this relationship, etc.. Ferri and Mantovani indicate that adult mediators (most often the parents) intentionally or accidentally introduce the children to the world of mobile communication technologies, equipping them with culturally-constructed meanings of the people-object relationship and the first abilities which are significant from the point of view of their chances of feeling at home with the digital culture (Ferri, Mantovani 2006: 6–8). The same authors are inclined to disagree with the thesis on the existence of a generation-based digital divide between digital natives and digital immigrants: this is because contact with digital culture takes place owing to the intervention of an adult mediator (Ferri, Mantovani 2006: 10).

The problem of the family context and new digital technologies as well as their mutual relationships was undertaken in Letizia Caronia's research works (Caron, Caronia 2007). In contrast to Ferri and Mantovani, the author reflects on the problem of digital socialization in a broader way, taking into account the entire scope of daily family relationships and not limiting herself to the subject of the children's learning. Caronia's research project starts with questions concerning the meanings given to mobile communication technologies by members of the families under study as well as senses of their appearance and use in the family context. The author assumes that mobile devices are active objects co-creating the material context of the daily family life in view of their location in the home space as well as the family time connected with their use (Caron, Caronia 2001: 39–63). What is most important, however, is their ability to introduce changes in the system of family relationships.

The presence of mobile devices in the family field leads to unexpected modifications in the form of changes to the customs and habits of the particular family members, and sometimes to a serious reconstruction in the area of "private" norms, values and the heretofore existing "family culture". The research in which Caronia used in-depth interviews and observation of the daily life of Italian and Canadian families demonstrates that before a mobile device is introduced into the family field, a preliminary consent of family members to introduce it to the repertoire of the negotiated customs, standards, and values is always necessary: therefore, the introduction is preceded by a question concerning the significance, purpose, sense, and value connected with the sphere of the potential uses of the objects (Caron, Caronia 2001: 42). In the context of Caronia's research, Polish concerns concerning the risk of addiction to computers (and mobile gadgets) could hence be explained in the framework of family relationships as a field facilitating the development of such an addiction. Therefore, it would not be so much the modern technology itself which would release the addictive power, but the structure of the family relationships (intra-family communication, habits, standards, and values) that would create a system in which an active object becomes the only valuable partner of communication exchange for the child.

Interestingly, when analysing the sphere of meanings and ways in which mobile devices are used, Caronia did not report any problems with excessive forms of contact with the objects. Instead, she managed to show in what way the digital culture transforms the system of family relationships through the daily communication practices of their participants. Apart from the obvious uses connected with work, studying, searching for information and entertainment, the surveyed parents of early school children – especially mothers – indicated that mobile devices let them develop a more comprehensive, more intense parenthood (motherhood), which they consider as communicatively thick and frequently established relationships of control, care, concern, and "being informed" of what happens to the child (Caron, Caronia 2001: 45–51). The child and other family members became – in their opinion – almost permanently available, and therefore the (especially prolonged) absence of communication results in anxiety, nervousness or panic. The intensified motherhood and parenthood are executed through a range of practices of "staying in constant touch" (texts, MMSs etc.), which make parents feel that they are close to the child, through frequent recording, documenting and "stopping" of the daily life (making photographs and videos). For many subjects, mobile devices also became an occasion for a more frequent being together, and for learning, playing and discovering something new together. This group of mothers indicated the community-building potential of the new digital technologies, which in contrast to the former forms (a stationary computer) do not develop "communicative autism" in the users.

However, Caronia's study discloses a marked generational difference in the area of the giving of value to close contact by the particular family members. The oldest generation (grandparents) believes that real communication and emotional "closeness" as family values can only be executed face-to-face (in direct availability). They interpret more intense communication relationships via mobile devices as less valuable, whereas for the younger generation (parents, and children in particular) family values are an integral element of touchscreen devices and there is no division into more and less valuable forms of contact (Caron, Caronia 2001: 58).

The child in the world of active objects – the *M(obile) Mama* study

In the next part of the text, we will present some effects of the research project entitled *M(obile) Mama*. The general aim of the project was to gain knowledge about mothers' strategies in the area of the introduction of mobile devices to their own children's socialisation field. The research had the form of a quick study (an online questionnaire) and was carried out in April and May 2013 on 50 women aged from 18 to 40 years (mothers of kindergarten and early school children) living in cities and medium-sized towns in Poland.

Almost all the participants of the quick study were university graduates (three subjects had secondary education). From the point of view of their professions, the subjects included twelve teachers, four academic teachers, four freelancers, three artists, three lawyers, four banking professionals, two office workers, five man-

agers, two programmers (ICT), two book publishers, three providers of services, three mothers looking for a job, and three students.

The framework of the empirical research was determined by the following questions: how are mobile devices (smartphones, tablets) introduced to the area of family relationships and communication norms? How are they co-creating cultural (mobile) models of parenthood? What potential of changes are active devices (smartphones, tablets) bringing in to the family field and family communication? What meanings do parents give to mobile devices and how do they perceive and design their children's contact with an active object? How are parental discourses of child development, parental power and control, and the care and supervision of children changing in connection with the introduction of mobile devices into the family field?

The above detailed research questions fit into a more general perspective of reflections regarding the ways in which children are introduced to digital culture.

Research results

An analysis of results shows that m(obile) mothers understand mobile technologies, their functions and the potential role in family life and the life of their children in three different ways:

1. some m(obile) mothers gave mobile devices the status of gadgets and toys (for adults). This group shows strong control tendencies in relation to children using mobile technologies. It also develops the discourse of an addicted child, thus placing themselves in the role of defenders of the "natural development environment", understood as an environment freed from the "harmful impact of technology";
2. some m(obile) mothers gave mobile devices the status of community-building tools facilitating learning and (educational) play. This group also controls their children's activity, but assesses the pro-developmental potential of modern technologies in a more positive way;
3. some m(obile) mothers gave mobile devices the status of their own working tools. This group of mothers does not use any discourse of child development in connection with digital technologies.

The first important issue opening the sphere of meanings the subjects give to digital devices in socialisation and child-rearing relationships concerned the children's right to own a mobile device (a tablet or a smartphone) solely for their own personal use. What was behind it was not a "marketing effect" i.e. the intention to determine whether the subjects were ready to purchase a device for their child, but the need to disclose how they understand and evaluate the very idea of independence (autonomy) of the child as the owner of a mobile device. Most of the subjects were not enthusiastic about the idea of child autonomy – the children's right to have their own mobile device. The answers given by mothers contained a considerable load of ideological constructions related to broader contexts – constructions of the meanings of digital communication technologies, ways in which they are used by children and the functions and roles of touchscreen devices in the

modern world (including the children's world). Many mothers expressed a belief that if not controlled, digital culture has an adverse impact on children's development and it was for this reason that a vast majority of them supported control understood as a parental power to give mobile devices to children and take them back from them:

> I believe that until children are 10 years old, they should not have their own equipment (b 16)[2]
>
> No to focus on gadgets at this age! (b 26)

M(obile) mothers fear the results of a loss of control over the time the children spend with a tablet/smartphone, websites or applications they use or install independently:

> My son's tablet is totally under my control and only the applications which I have first tested myself get there. They need to include something apart from pure entertainment. […] We do not buy our child a smartphone/tablet as a gimmick, install whatever apps and hand it in to him with a silent message: "take it, take care of yourself and don't bother us". Looking at how fast technologies develop, I think that children should have access to them, but it should be a "healthy" access – one carried out under the parents' control (b 8).
>
> I prefer to have control over my child (b 14).
>
> You need to dose and control (b 41).

For the mothers, the strongest discourse justifying the right of parental control is the common sense version of developmental psychology, and within it, the category of the correct child development, which places a comprehensive, balanced, correct development of the child in the natural, diversified and real (off-line) environment:

> The child should function in the real world, experience it through all their senses, develop interpersonal skills through direct contact with other children, parents, people, learn to live as a part of society, spending time actively (b 29).
>
> Jasiek is eight years old. At this age, he does not need a smartphone for his development (b 41).
>
> Apart from the provision of digital entertainment, we should develop the children's will to get involved in outdoor activities in real life (b 1).

Many statements also concern the loss of control over the child in the context of addiction to gadgets. The mothers' statements show the process of personal (cultural) construction of the device as a "toy", "gimmick", "gadget", of the child – as a being susceptible to addiction and of the specific construction (and dichotomous division) of the environment of development: one which is natural, and fa-

[2] Fragments of the subjects' statements illustrating the phenomena in question contain the coding from the survey.

cilitates development, and the other one, the "artificial environment" of the digital technology being the potential hazard:

> You must not **addict**[3] or **haunt** your children **with technology** from their earliest years (b 4).
>
> The less the child uses apps and games in a smartphone, the better for the child and for the family (b 22).

Many m(obile) mothers perceive the children as irrational users of mobile technologies, who would surrender themselves to the devices uncontrollably and totally. Their assessments of children's activity are strongly related to how they defined the mobile devices, the sense of possessing them, and their usefulness in daily life. When a cultural construction of a mobile device is related solely to a "gadget" or "toy", the risk of exposing the children to a contact with digital communication technologies can be described using the following formula: **censorship – protection against addiction – dosing – control – making devices available – [goal:] access to playing a "mobile toy for adults"**.

Another group of mothers treated mobile devices as community tools (the idea of joint child and parent learning and playing), which, when used properly (i.e. under parental control), facilitate the children's cognitive development. However, we should also mention the changing concept of parental control – here, it does not consist in taking away the device from the children after the lapse of a certain amount of time, but in accompanying the children and exercising vigilance during joint activities. From this perspective, parental control has a "low profile", it is an "internal procedure" fitting the time "spent together":

> My baby is not yet one year old and uses only one app with animal images and sounds. Sometimes we look at our photos together and Skype the grandparents, when we travel. Sometimes we watch cartoons. We also listen to the music while playing (b 46).

This group of mothers believe that digital culture (and mobile devices) facilitate development. They do not contrast it so clearly with the "natural" environment and accept changes taking place in this area to a much larger extent than the first group of mothers, noticing their developmental rather than destructive potential.

> Everything changes and our children have to go with the times; they use such devices to learn (b 15).
>
> The children learn to operate electronics very fast, which makes them develop better and prevents lagging behind in terms of the development of electronics (b 25).

The m(obile) mothers belonging to the second group, treating devices as "community-building" tools, developed an alternative concept of child development: **being together – vigilance and protection – joint learning/playing in the digital culture – [goal:] feeling at home with the digital culture.**

[3] The highlighting in the quoted texts has been provided by the authors of the article.

In contrast to the first group, this group of mothers do not exclude the possibility of child development in the digital culture. On the contrary – the development fits the changing cultural context, and the process of its change is not considered a threat:

> My two-years-old child can operate an iPhone. She can phone her grandma, turn the volume up and down, switch to the hands-free system, turn on the music she likes, watch the videos we made during the day. I think that this develops her (b 3).

The mothers in question did not consider mobile devices as toys (for adults) or gadgets, but as tools accompanying everyday actions: facilitating more frequent contacts with the family, documenting daily life and allowing one to learn. This type of meaning given to an object within the sphere of parental child-rearing practices minimises the temptation of its appropriation by the children as an attribute of power, "adulthood" or prestige. M(obile) mothers consistently stress the community-building aspect of the devices, referring to the development of the ability to share on the grounds of the communality:

> Children should be taught to share things (b 28).

The third group of mothers (the smallest one) use tablets and smartphones primarily as their working tools (as a mobile office, for professional contacts, but also for the management of household time or finance). This group of people are the strongest supporters of the idea of the children's mobile independence. They motivate their standpoint both pragmatically – fearing a loss (accidental damage) of the device or the data it contains (professional loss), which may take place when children play with the mother's working tool – and ideologically (liberally), as granting the child, as every other human being, the right to privacy, entertainment, and ownership:

> Apps and files are a personal business of the adult and I would not want my child to have access to them. It is also about the possible destruction in the case of the younger children (b 13).

> I assume that the smartphone is a personal tool and that everyone should have their own device (b 28).

> Just like any other human being, the child has the right to privacy and entertainment. Every adult has a device of this kind, so why should not we give them to children? (b 18).

This group of subjects do not form any preconditions concerning the children's contact with mobile devices. They do not use any specific "developmental discourse" in connection with the digital culture, either. It is only worth pointing out that the subjects use the category of childhood which is understood individualistically through subjective rights, in particular the right to privacy and ownership.

Mobile devices in child development discourses

As has already been determined, many m(obile) mothers perceive digital culture in the framework of the discourse of "concern and care", treating it as a threat to their children's development or as a necessary and obvious element of their social world. However, in the eyes of many mothers participating in the study, the pro-developmental value of contact with cultural artefacts filtered through the sieve of parental control (time, educational value of applications, etc.) increased. The subjects most often referred to the children acquiring the necessary ability to efficiently move through digital culture and to find and process information, as well as to the stimulation of creativity, perceptiveness and manual skills.

The subjects mentioned some positive sides to the children's participation in the digital culture:

> The development of a certain intelligence allowing one to move through the digital environment, which is indispensable in the contemporary world, as well as imagination and even creativity (b 1).
>
> Valuable apps develop their perceptiveness, make them more sensitive, give them the sense of agency, a possibility to discover and spontaneous non-schematic activity (b 31).
>
> Owing to this, the child has an opportunity to learn faster while playing (b 48).
>
> Broadening knowledge, effective use of electronic devices (b 37).
>
> The child is on good terms with technology, and can find the necessary information in no time and in a concrete way (b 12).
>
> The child learns the alphabet, counting, colours, shapes, develops his/her abilities, creativity, manual skills, memory, and perceptiveness, learns foreign languages while playing – using mobile apps for kids, teaches others how to use the devices (b 8).

The subjects stressed that the fast domestication of the Children in digital culture gives them a stronger (more balanced) position in contact with the less competent adults, making the former the teachers or guides through the world in which the latter move less efficiently:

> My child is becoming a competent user, he does well with devices, and teaches his own grandma how to use them (b 23).

The subjects mentioned some benefits they achieved in connection with the children using mobile devices (e.g. a discontinuation of boredom or the monotony of travelling, end to crying, a moment of rest, etc.):

> The child is not bored while travelling (b 22).
>
> A free moment for myself and some fun combined with learning for the child, which will not differ from other children (b 2).
>
> Rest for the parents… (b 40)

> We can make him interested in the smartphone, light, sound, etc. in a crisis, for example when he cries in the car (b 11).

Another question stressed by m(obile) mothers concerns the obvious function of mobile devices – communication. In contrast to popular beliefs that children's early contact with digital culture closes them to social contacts and limits unrestrained peer communication[4], the m(obile) mothers mention an intensification of social contacts, in particular within the family, owing to mobile technology. It should be noted that mobile devices also effectively play the role of tools of parental control:

> If we need information fast, mobile technology helps: we have contact with the child all the time (b 15).
>
> The child is in contact with others or with parents (b 21).
>
> Fast provision of information to mum, frequent texting (verbalisation of thoughts). Development of relationships with the peers (b 26).
>
> A possibility of a more frequent contact with the grandparents (b 28).
>
> Safety! She can always contact an adult, and the contact with the child is also easier (b 38).

It turned out that mobile devices bring about mutual benefits: children experience development of the network of communicative social contacts, while mothers have an opportunity to develop a more comprehensive, more intensive motherhood. For the subjects, this more comprehensive motherhood is tantamount to communicatively thick and frequently established relationships of control, care, and concern, as well as "being informed" about what happens to the child. It results from what the mothers said that the network of family relationships becomes thicker from the communicative point of view: both the children and other family members are almost permanently available. Intensive motherhood is also marked by the documentation of daily life (filming or photo-taking) and practices of "being in touch" (sending texts or MMSs), which let people feel close to each other in the communication space (Caron, Caronia 2007).

The touchscreen – developmental profit and loss account

More than a half of the m(obile) mothers participating in the study can see changes resulting from contact with mobile devices. Only five of the subjects indicated a negative nature of such changes. The children's behaviours particularly disapproved by the mothers include: addiction to touching the screen of the device, crying when the child cannot get the device, child's excessive interest in the

[4] The image of a "dulled" child gaping at the computer screen, not undertaking any activities, having no interests other than the virtual world, and feeling no need of contact with the parents or peers.

course of the game, and nervousness and excitement resulting from the use of this type of equipment:

> One child has a problem with finishing playing – it makes him angry (b 5).
>
> Unfortunately, yes: obsessive thinking about what happens in the game now, who plays, what has changed. The absence of concentration, unwillingness to perform tedious tasks (b 33).
>
> My friend's son got addicted to the touch of the Apple phone. It may seem funny, but my friend does not think so (b 34).
>
> Negative changes! The majority of them are illiterate! (b 15)

The other mothers indicated positive changes they related to the children's contact with mobile technologies. These included: natural, fearless contact with communication devices, the younger children's earlier knowledge of colours, shapes, digits and letters in comparison to their peers, the ability to record videos independently and constructing short stories on their basis, more efficient learning of foreign languages, an interest in reading, the acquisition of general knowledge and growing confidence. These changes can be illustrated by the following statements of the subjects:

> Hania has learnt almost all the letters, and she can recognize digits. The phone helps her owing to the keyboard. She develops her communicativeness, she tries to tell us more. Owing to this, she develops her vocabulary. She also develops her music skills, singing the songs I have in my music library – she loves listening to all sorts of music. She dances. The contact with the phone and learning how to operate it consolidates her memory. The videos showing her since the first month of her life broaden her vision of the world (b 2).
>
> She is more open to the world (b 19).
>
> Many apps installed in the iPad my son used contributed to his faster learning of digits, letters, colours, shapes, foreign languages, etc. (b 8).
>
> She learns how to use contemporary devices. She is not afraid of them, it becomes natural for her to use them (b 10).
>
> He reads more and is more eager to read. His knowledge is substantial (b 12).
>
> I think that this is a change of mentality of the entire generation. The children feel that they have permanent access to information. Whenever we have any doubts, my child says: "check it on the phone". He has no problems with the operation of various mobile or electronic devices (b 24).

A subject's statement concerning generational changes in the treatment of information as readily available can be attributed to one of the leading ways of the understanding of digital culture proposed by Marc Prensky (2001a). The generation-based division into digital natives and digital immigrants as described by the author, indicating the degree of domestication in or alienation from digital culture, involves significant cognitive, cultural and social consequences. The most important ones include new cultural frameworks of learning and socialization, which constitute new types of identity.

Another change noticed in the children's behaviour (we are inclined to ascribe to the children representing the digital natives generation) is the treatment of electronic devices as if all of them had a touchscreen. Therefore, the youngest generation begins to feel that such a manner of association with reality and – perhaps – cognitive "opening" of the world with the touch is obvious, just like the touch "enlivens" and "opens" the applications installed in the device:

> She treats various devices as if they had a touchscreen (b 44).
>
> It sometimes happens that my son touches the window and wants to make the tree growing in the garden smaller with his hand (b 50).

Although the subjects did not refer to the problem more broadly, relevant literature describes it as a change with significant epistemological consequences (Castells 2004). Another result of the children's development among touchscreens concerns the efficiency of the children's operation of stationary computers. It was discovered that the children growing up in the touchscreen world, who learn to operate new mobile devices intuitively, fast and easily (as if the devices were designed with small children in mind) encounter considerable difficulties and feel frustration when confronted with traditional stationary computers (problem with the operation of a large device with an awkward mouse, inability to coordinate the movements of the mouse and the cursor, treating the stationary location of the computer and its immobile operation as a drawback). In other words, the stationary computer is becoming a difficult, boring and unattractive device for children. In comparison with the convenient and light mobile devices, it seems to be a relic of a past age.

Manuel Castells called the appearance of new technologies a mobile revolution, having in mind the cultural changes it evoked. The gist of the Castellian reflections concerning the mobile revolution is theoretically close to Margaret Mead's (1970) findings devoted to alternative possibilities of the transmission of culture (knowledge), i.e. the cofigurative (transmission of knowledge in peer relationships) and the prefigurative (transmission of knowledge by the younger generation to the older generation) systems. Research into the social contexts of mobile technologies shows that children and youth have the strongest culture-creating power at this point in history. Castells believes that we are dealing with a significant cultural change and shows a close relationship between the dissemination of the mobile communication and the creation of new teenage culture along with changes in the field of language, and the organization of time and space. However, the most serious cultural change related to the mobile revolution concerns the model of learning. Although we are still dealing with a vertical model of the transmission of knowledge, its direction has been reversed – it goes from the younger to the older generations (Castells 2004).

The screen and parental control procedures

Another thread of our study concerned the problem of family principles appearing in connection with the children's use of mobile devices (the problem of adult power over children as users of mobile technologies). In the collected empiri-

cal material, the motif of control over children proved to be one of the most important problems stressed by m(obile) mothers. This time, it became prominent in the perspective of questions concerning the set of principles communicated to the children in connection with their use of mobile devices. The empirical material does not include references to the degree to which the principles are negotiable (or the children's participation in their development). We suspect that they are most probably imposed by the power of the parental authority and are hardly negotiable.

Almost all the mothers in question, when relating to the set of principles ruling the children's use of mobile devices, introduced a division of time into the strictly controlled "digital time" and the "analogue time" which was not connected with control:

> I limited the time spent in front of the device to twenty minutes a day due to the child's age (b 1).
>
> The child uses mobile devices only on weekends, for a limited time and only to use some selected apps (b 24).
>
> I defined a daily time limit (b 44).

A number of the subjects additionally introduced a ban on the independent installation of applications, and the use of devices without a consent of an adult or before the completion of homework. These bans are grounded in the mothers' care for the location of the mobile devices in the appropriate (educational, moral, cultural) framework and for respecting the authority relationship by the child – the child has to obey the rules determined by adults:

> The child may use the tablet for the maximum of 20 minutes a day; we agreed which websites she may use, and I check if she sticks to the agreed rules (b 15).
>
> If he uses [a device], then it is during the time for entertainment. Before installing new apps, he asks me if I agree (b 13).
>
> It is me who decides whether it is a good moment for entertainment, but on the child's request (b 32).
>
> I limit the time for "silly things" to one hour. Afterwards each subsequent hour decreases the child's pocket money (b 35).
>
> A ban on use without my consent (b 30).

Some of these rules are expressed in a very authoritarian way and leave no space for negotiation:

> There is one rule: he doesn't use it! (b 26)

A few mothers (for whom the mobile devices have community-building value) indicated the establishment of rules connected with the directive of mutuality, such as sticking to the "one after another" sequence, remembering not to keep the device all for oneself, and sharing it:

> We have the "first me, then you" rule (b 17).

When justifying the sense of the existence of family principles ruling the children's use of the equipment, m(obile) mothers mainly mentioned their fears of:

a) developmental harm (and the children getting addicted to a smartphone or tablet):

> I did not want my child to get addicted to the device or lose an interest in other types of play and activities (b 1).
>
> Without these rules, the devices would be a threat rather than a chance for development (b 5).

b) losing control over the children and their daily activity:

> Because the child also has some duties. Installation of software without my consent will be tantamount to my loss of control over what the child does (b 13).

c) the children keeping the devices all for themselves:

> Because my son started to "appropriate" the iPad, which is my toy! (b 12)
>
> To prevent arguments concerning the equipment (b 17).

d) destruction of the device:

> To feel safer, to feel that I will not lose my device because my child will accidently drop it down the stairs (b 8).

M(obile) mothers refer to a certain philosophy of child-rearing (promoted in the media), under which children feel safer in the world ordered by imposed, clearly determined rules:

> In every sphere of my son's daily life, there are rules, and therefore they are also necessary in this area. Obeying the rules guarantees order, balance, trust and the sense of safety (b 27).

M(obile) mothers also indicated the types of applications their children use most often. We present them in the sequence from the smallest to the largest number of mentions: games for children (22), educational applications (8), YouTube (8), graphic applications (7), camera (7), cartoons (4), Skype (4), interactive books (3), music player (3).

The subjects value these applications for the following reasons: convenience, simplicity of the use of the device or application (9), easiness and fastness of communication (staying in touch with people) (8), immediate access to information (8), making the daily (private, professional) life easier and more efficient (8), following the children's development (documentation, recording) (4).

Hence, it clearly results from the subjects' statements that their positive assessments result from the fact that they see benefits behind the introduction of the devices (applications) to their daily lives (making them easier and more efficient) in the aspect of time (fast access to information) and in the field of relationships and communication connected with the organization of their daily lives.

The subjects also referred to the applications which they consider unnecessary and not valuable. These include: games (13), Facebook (3), internet shops (3), weather forecast (1), mp3 (1), advertisements (1), they do not value the things they do not use (14).

M(obile) mothers believe that these applications waste one's time, are unnecessary and useless, stupefying or irritating. However, the subjects did not discuss this subject very deeply and it was only modestly illustrated with single, usually brief assessments and statements.

In our opinion the study discussed above can be concluded with the following formula: the m(obile) mothers as users of active objects often use the benefits, facilitations and improvements offered to them by the mobile technology. However, they refer to their own children as users of these objects with a lot of caution and some prejudices.

Part II. School computer and gadgets? The problem of power and control

The Polish school faces the challenge of domesticating new communication technologies taking the illusion of the child's first contact with a computer at school as the starting point. After reading the new core curriculum for the first educational stage, we feel certain that the school prepares children for a meeting with stationary computers overlooking mobile devices inherent in the current stage of development of the information society. This surely results from the financial standing of the Polish school, but its traditional "lagging" behind the contemporary developments is also relevant. The new core curriculum for the first educational stage contains the following statements: students completing the first grade (computer classes),

> know the basics of computer operation: they can switch on a program using a **mouse and a keyboard**. They know how to use the computer without compromising their health. **They comply with the limitations** concerning the use of computers (Regulation of the Ministry of National Education – MEN)[5]

Students completing the third grade can:

> operate the computer: they can use the mouse and the keyboard; name the main elements of the computer set correctly; use selected programs and educational games,

[5] Regulation of the Ministry of the National Education of 23 December 2008 on the basis of preschool education programme and general education in the individual types of schools (Journal of Laws of 2009 No. 4, item. 17).

> and use options in the programs developing their own interests; search for information and use it: **browse through the websites selected by the teacher** (e.g. **the website of their school**), spot active elements of websites, surf through websites to a limited scope, play animations and multimedia presentations; create texts and drawings: write letters, digits, and other characters, words and sentences with the help of the keyboard, and make drawings with the help of a selected graphic editors, e.g. using ready figures; they know dangers related to the use of the computer, Internet and multimedia: they realise that work at the computer tires the eyes, strains the spine, and limits social contacts; are aware of the dangers resulting from the anonymity of contacts and the provision of their address; **comply with the limitations** concerning the use of computers, the Internet and multimedia (Regulation of MEN).

Familiarisation with the core curriculum shows that the school exercises efforts to **gradually admit** the student population to participation in the digital culture (the first grade consistently remains without access to the Internet). Nevertheless, what is noticeable is the designed teachers' supervision and control strategies concerning the subsequent stages and "admissions" (for example to the websites visited under close control of the teacher). Contact with digital culture in the framework of the school is based on limitations and control, and therefore we may suspect that the school will experience the mobile revolution as a "culture shock" (due to the immediate access to the Internet and the impossibility to exercise full control over the users' activity).

Noteworthy are also other anachronisms. Early school children from environments with average culture capital are already initiated into the world of new technologies, and the early school instructions concerning the operation of a stationary computer do not cause emotions comparable to the ones accompanying the contact with the latest mobile devices (smartphones, tablets). We are obviously aware of the ideological efforts of corporations, market powers and effective marketing exerting their impact on the population of the youngest consumers, resulting in the children's desires directed towards mobile gadgets. However, what is also noteworthy is the ideological work of the school (not only the Polish one) introducing a clear division in the area of communication tools. The school treats stationary computers as good, rightful and educationally significant tools, while banning or seriously limiting the possibility to use cellular phones, smartphones, and bringing tablets to school. Mobile devices are considered to be fashionable, distracting, useless gadgets designed for empty entertainment, and owning one is a symptom of consumer enslavement and vanity.

In an effort to grasp the ideological work of the school, we carried out a preliminary analysis of the hidden programme of one of the textbooks used in the first and the second grades of primary school (*Zajęcia komputerowe* [*Computer classes*][6]) and we also analysed five primary school statutes[7] to identify the rules pertaining to the students' (and perhaps also teachers') use of mobile devices in the area of the school. We are conscious of the limited possibility to make conclusions and

[6] The textbook was used as a part of many educational packages of the Nowa Era printing house.

[7] The study was performed on five primary schools in Tri-City, which agreed to make their rules and regulations (the fragments concerning electronic devices) available to us. Identification data of these schools were classified.

construct broader generalisations on the basis of a small sample of the analysed texts. They are only a starting point for further work we are going to undertake in this scope.

Zajęcia komputerowe (Kęska 2012a, 2012b) comprises a textbook and an instructional exercise book (plus a CD with educational games). The children using the textbook gain knowledge on the parts of a stationary computer, components of the basic computer set, names of devices cooperating with the computer, basics of its operation (explanation of the particular elements of the desktop) and elementary skills in the area of the use of the Windows and MS Paint programs. However, this does not mean that the messages contained in the textbook concern solely the operation of a computer. What is very interesting is the way in which the textbook presents the social uses of modern technologies together with the discourse of addictions and the "moral discourse" – a program of the appropriate use of computers (although neither these chapters nor the content are very substantial). The computer, consistently and often referred to by the authors of the textbook as a "secret box" (e.g. Kęska 2012a: 8), appears in the sphere of uses, facilitations, and improvements of work. The textbook shows places in which computers are used (work places – an office worker's desk), or professionals connected with a concrete institution (postmen, policemen) using the computer as a part of their professional activity. We may therefore conclude that the discourse of the usefulness of the computer is located in the context of "serious" social activities. The second area is the private sphere in which the computer is presented as a device facilitating and improving the performance of many daily activities (reading, drawing, doing homework). Interestingly, the authors "censured" the context of the use of computers for fun (there are no references to playing, games, or entertainment either in illustrations or in the text). We interpret such a construction as an attempt at linking the technological world with the sphere of rational (serious) uses to possibly weaken the children's construction: computer = entertainment.

The first chapter, entitled *W świecie kabli i* ***tajemniczych*** *skrzynek* [*In the world of cables and secret boxes*] is a very interesting part of the textbook. It is because the authors present here the rules and regulations of the computer lab, i.e. a collection of "principles in the scope of the correct use of computers". These rules concern not just the school space – many illustrations under the text show work with a computer at home (an illustration presents a child's bedroom). The catalogue of rules and regulations is preceded with a short text containing several puzzling statements: "Have you ever seen so many computers in one place? This is a computer lab. This rather non-typical room **may make you feel shy a little,** but **you will soon feel very much at home here**. It is here that we will discover **the secret world of computers** together" (Kęska 2012b: 4). The narrations of the subsequent parts of the textbook are consistently constructed around the following categories: a secret ("the secret box"), children's incompetence and their "technological fear", and the child's gradual and controlled access to the "world of secret boxes".

The first category – "the secret" – can be illustrated with the following textbook content:

> You already know what computers are for and where they are used. It is time to see them face to face. Today you are going to learn which way the wind blows in the **secret boxes** and what tells you that the computer is on (Kęska 2012a: 10).

Secrets of the keys (Kęska 2012a: 24).

Find the games for the classes and check what **secrets** of the computer keyboard you have managed to disclose (Kęska 2012a: 25).

You have been discovering the **secrets** of the computer all schoolyear long (Kęska 2012a: 42).

During the last few weeks you have been discovering the **secrets** of a graphic program (Kęska 2012b: 28)

The second category: "the child's incompetence and 'technological' fear" can be illustrated with the following fragments:

This is a computer lab. This rather non-typical room **may make you feel shy a little**, but **you will soon feel very much at home here**. It is here that we will discover the secret world of computers together (Kęska 2012a: 4).

Hello, Young Letter Hunters! You have already learnt a lot. You can draw and you have started to learn writing on a computer. **And it was only a short while ago that you did not know how to switch the computer on** (Kęska 2012a: 26).

The third category – "the child's gradual and controlled access to the world of 'secret boxes'" – can be illustrated with the following textbook fragments:

Before going to outer space, astronauts must **prepare themselves for a long time and learn a lot**. You have already acquired the knowledge necessary to start working with a computer. I am sure that you will not confuse a computer (the central unit) with a monitor. Today, **you will win your pass** to the world of computers (Kęska 2012a: 12).

Do the exercises for this subject to **win a pass** to the extraordinary world of computers in the computer lab (Kęska 2012a: 13).

Do not forget that summer holidays are the time of rest – also rest from computers. **See you in the land of the Internet in just two months' time – in your third grade** (Kęska 2012b: 43).

It is no doubt worthwhile to reflect on the textbook's (school's) strategy of presenting the stationary computer as an element of the child's cultural world. What is also interesting is the large number of references to a "secret", children's ignorance and shyness in the perspective of contact with electronic devices, as well as a stage-based organization of the contact. We think that this strategy reflects the children's information technology experience much less than it creates the foundation for the possibility of an adult control over these experiences (the context of supervision and authority). We are entitled to make the above conclusions on the basis of an analysis of the rules and regulations of a computer lab – a document providing "principles of the **safe use** of computers". These rules and regulations are repeated in an almost unchanged form (content and illustrations) in the subsequent parts of the textbook (for grades one, two, and three). The textbook for the first grade includes an exercise aimed at the consolidation of the principles. It consists in the correct placement of labels indicating the correct and

the incorrect behaviour in the table with "yes" and "no" columns. We are inclined to refer to the rules and regulations of the computer lab as a specific disciplinary programme applying to one's body, time, place and hierarchy of authority. The principles of the safe computer use include: the correct body posture (straight back, the correct distance to the monitor), the appropriate organisation of the working space (correct lighting, clear desk, icons on the computer desktop are perfectly arranged into two symmetrical columns), the appropriate length of time (no more than an hour a day), and the appropriate authority relationships (execution of adults' orders). The list of inappropriate behaviours also refers to these areas and includes: hunched back, looking at the monitor at a too short distance, darkness in the room, mess on the desk (apple cores, a bitten candy bar, a teddy bear, a toy car, a bottle of Coca-Cola, a mug), mess on the screen (many "open" files), prolonged use of the computer, no adult around, a sandwich in one hand and a mug of something to drink.

The disciplinary programme contained in the rules and regulations of the computer lab is very moralistic. It also shows contact with a computer as an activity requiring special preparations and procedures as well as a vigilant eye of an adult, rather than an activity spontaneously organized by a playing or studying child uncontrolled by an adult.

The problem of school authority and teacher's control of the students' activity related to devices is also the subject of other school regulations, such as school statutes. Under the Regulation of the Minister of National Education of 9 February 2007, changing the regulation on the framework statutes of public kindergartens and public schools (Journal of Laws of 2007 No. 35, It. 222), schools are obliged to determine the conditions ruling the use of mobile phones and other electronic devices on their premises.

Our analysis of the statutes of five primary schools from the Tri-City area shows that school authorities aim at the minimization or entire elimination of mobile devices from their premises. This is because the devices were defined as dangerous and destructive (a source of disturbance to the school order) or as toys distracting the students' attention.

Strategy 1. Minimization of the destructive impact of electronic gadgets and toys

The gist of this strategy is the limitation of the impact of mobile devices on school life, although the school authorities are aware of the impossibility of their elimination from the school space. They also accept the parents' right to equip their children with the gadgets; however, they also protect themselves against the students using the devices as a tool of control over the school and the teachers:

Example 1:

> Minor students can keep and use mobile phones on the school premises only if they have a written consent of their parent/legal guardian. During breaks, before classes and after classes, students can use their phones only in the quiet mode.
> To record sound and image via their mobile phones or other electronic devices, students must obtain a consent from the person who is recorded or photographed.

In the event of a loss of a telephone or other electronic devices on the school premises, the fact should be immediately reported to the head, teacher or any other employee of the school.
If a student breaks the principles ruling the use of mobile phones and other electronic devices on the premises of the school, the equipment will be placed in the depository. Mobile phones and other electronic devices can be collected by the student's parent or legal guardian.

Example 2:

There is a strict ban on using mobile phones during educational classes. The phones should be switched off and hidden.
Music-playing equipment of any kind (for example MP3 players) must not be brought to school.
During their stay at school, every student is strictly forbidden to photograph, film or record the images or sounds of other people without their knowledge and consent; this ban applies to all the classes organised by the school.
If a student breaks the ban specified in Items 1, 2, or 3, he/she will be obliged to place the mobile phone, camera, MP3 player or any other recording or playing device in the school depository in the school office. The devices can only be collected by the student's parents or legal guardians.

Strategy 2. Prohibition of mobile equipment in the school space

The gist of this strategy lies in an attempt at a total elimination of mobile devices from the school space: a ban on bringing and using them at school. The school culture and the mobile culture are clearly separated here; there is no common ground or possibilities for negotiation.

Example:

The school is a space free from electronic devices. There is a strict ban on bringing them. Every electronic device brought [to school] will be placed in the head teacher's depository. The devices can only be collected by the student's parents or legal guardians.

It turns out that the ombudsman for students and parents receives a growing number of complaints against teachers taking phones away from students (which is facilitated by the school rules and regulations). This is because the ombudsman believes that the taking away of a phone with private messages is a breach of the secrecy of correspondence. In the ombudsman's opinion, when a student disturbs others during a class, the teacher can lower the student's grade for behaviour, but she/he cannot take away his phone. Apart from this, the break time should be considered as a private time, during which the students can send messages or talk via the phone.

Another group unhappy about the school rules and regulations are parents equipping their children with phones so that they can control them during the day and follow their progress. For children coming to school from further locations, the phone is a facilitation – they can phone their parents so that they can be collected

at any time or inform them about changes in the lesson plan. Also, in the case of an accident on the grounds of the school, the children can contact the parents without delay. Recognising such expectations, the school authorities allow parents to make a written declaration confirming that they want their child to use a phone at school in the quiet mode.

However, in our opinion school rules and regulations are not so much about the distraction and lack of discipline caused by phones (making calls, photographing the blackboard instead of making notes), as the change of phones into tools of control – recording the course of the lesson, filming the teacher, etc.. This is because new technologies could contribute to a change of the authority relationship in the classroom and the "balancing of powers and control".

Early education teachers – digital immigrants?

In this part of the article, we will focus on reports from research projects describing cultural factors as a source of the educational rejection of modern communication technologies. When analysing the phenomenon of male dominance in the contemporary societies, Pierre Bourdieu stressed that despite the indisputable changes, which strengthened the position of women, there are still several cultural "constants" recreating the symbolic border between the male and the female world and their hierarchy. They include the culturally-constructed female technical "disability" expressed in the form of a social permission (and sometimes even expectation of signs of such "disability" and hiding any competence) for women's public manifestations of incompetence in the technical area, their demonstration of helplessness and the expectation of support from men, thus gaining the status of experts, regardless of their actual expertise in the field (Bourdieu 2004: 43). However, the analyses of the family context of culture as presented in the earlier part of the article do not confirm Bourdieu's diagnosis. We might even be tempted to arrive at an optimistic conclusion that the "mobile revolution" turned out to be surprisingly inclusive in the gender aspect: the results of the *M(obile) Mama* project show that mainly women make their own mobile devices available to their children, thus opening the children to the digital culture.

However, the research results discussed in the further part of the article indicate that a certain amount of caution should be exercised. We managed to find some analyses indicating the existence of "islands of educational resistance" towards the digital culture: resistance with a markedly gender-based nature.

When analysing the educational potentials of mobile communication technologies, Paolo Ferri and Susanna Mantovani turned their attention to the socio-cultural construction of gender (Ferri, Mantovani 2006: 63). According to the authors, hostility towards the modern mobile devices is not so much a part of the culture of the Italian school, as mainly a gender-based construction of the profession of a teacher. The female Italian early education teachers are not, as it was shown, prepared for the digital culture to be able to build their professional proficiency to some extent. On the contrary – the profile of their professional background is conservative from the point of view of culture, and for this reason, when studying at universities, they are allowed to diminish its value or even to demonise it

(due to the common omission of digital culture in the training of teachers, this context of the socialisation of children becomes the subject of demagogical criticism, multiplication of concerns and prejudices). On the other hand, the Italian female early school education teachers are – as Ferri and Mantovani argue – strongly attached to the discourse of the children's nature, which – in order to develop correctly – should remain "untouched" by modern technology (Ferri, Mantovani 2006: 66). Thus, the teachers give themselves a professional monopoly to define what the children's nature is, determining what social, cultural, and school conditions will give them a chance to develop most comprehensively. The attachment to the romantic concept of the children's nature and the correctly organised (standardised) learning environment makes the Italian female teachers one of the most conservative groups defending the "purity" of the school and the "purity" (non-technologicality) of the time of childhood, often against the children and their parents themselves. The teachers' resistance to the use of mobile devices in education is contained in the following statement: "[…] new communication technologies will change children into machines" (Ferri, Mantovani 2006: 68). The concepts of "naturalness", "natural environment", "correct development" and teachers' professionalism defined as the exercising of care (control) over the "natural", create an exceptionally strong barrier protecting the Italian education from the impact of the "unnatural" digital culture. We are also convinced that the practice of Polish early school education is not very distant from its Italian counterpart.

Ferri and Mantovani's research does not tell us whether the said group of teachers excluded touchscreen devices from their own non-professional life as well. However, we suspect that their "naturalism" is related to not so much a specific type of personal beliefs and attitudes (freedom from technology, deep ecology practiced in their own private lives, etc.), as the specific, professionally established form of power over children and the environment of their development. Therefore, we do not think that the early school education teachers create – in view of their incompetence and the lack of ability to move in the world of mobile devices – a very specific group of digital immigrants with a hostile attitude to children (representing the generation of digital natives). However, the school culture and the concept of their profession position them in this way.

Ending

In Poland, the popularity of touchscreen devices among the youngest (and not only the youngest) generation has been growing dynamically. According to journalistic reports, smartphones, tablets, and in particular iPads, are this year's "number one" on the list of First Communion gifts. Also a look at the internet fora (such as www.mjakmama24.pl) shows that the parents of the youngest children (three year olds) discuss the sense of buying a tablet for their child (*M jak mama* 2013). The devices in which we are interested are becoming an integral part of the children's world[8], a new childhood space and a new learning environment in contact with active subjects as well as an element of the construction of the children's

[8] We obviously are aware of the digital divide, which also applies to the children's population.

identity. In this perspective, it will be interesting to observe the school's reaction to the invasion of touchscreen devices. The heretofore existing ways in which the Polish school "coped" with mobile technology indicate the existence of a cultural conflict rather than the use of the educational potential of new technologies.

We are convinced that the knowledge of the ways in which children participate in digital culture as well as family strategies of introducing active objects into the sphere of the socialisation, child-rearing and learning will lead to the identification and recognition of the educational potential of mobile technologies in early school (and kindergarten) education, will stimulate research in the area of m-learning and will minimize the discourse of "new communication technologies as a stark threat to the development of the child" as well as the discourse of the "calming tablet" present in popular culture.

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Summary

Children in Digital Culture

The main aim of the article is to provide knowledge on the educational potential of digital culture, the m-learning infrastructure and its educational content within the field of early education. It examines the patterns of children's learning, cognition and action within the family and school learning and socialization, and the readiness of early education teachers for elements of digital teaching in their professional domain. These studies are relevant to the pedagogy of early education, innovative pedagogy, digital teaching and the sociology of education in Poland.

Keywords

children, school, mobile culture, family, digital socialization

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Children within Mobile Technology: Interacting and Learning

Contemporary society is characterized by fragmentation, individualization and mobility, in which cultural practices related to consumption, information and knowledge production (Elliott, Urry 2010), organization and distribution are "chunked", structured and connected together in very different ways from lectures, webs and books (Traxler 2010: 110). Mobile technologies are increasingly embedded in the life-worlds of children. They allow children to deal with such fragmented and personally transformed knowledge and information as mentioned above. Because of the degree of integration with everyday life, mobile technologies are considered as very important cultural resources, which embody social values, and which are shaped by social structures, cultural practices and people's agency (Traxler 2010: 102). Mobile technologies are also important from an educational perspective as the convergent tools for meaning making, for engaging with and for mediating the world around students as well as students' communication with it. Their increasing portability, functional convergence and connectivity have a great potential for social interactivity, ubiquitous information retrieval, processing and exchange, as well as context sensitivity and location awareness (Seipold, Pachler 2011: 2). Additionally, the increasing level of expertise of children in the use of mobile technologies and their participation in complex networking activities and communication has to be considered.

Technology has become an essential element of our daily lives, affecting communication, education, relationships, the way we manage our finances, progress and develop. As we have become more immersed in the benefits and capabilities of these constantly developing technologies, children as well as adults have become avid users. Smartphones, tablets, iPods and other technologies have been developed specially for preteens. Software and game companies have been targeting children in their game development. Video games have become a common form of entertainment for children as young as four years old. Children today can pick up a smartphone and quickly learn how to use all of its features, as if it were inherent to them.

Today, children have a higher exposure to technology than any previous generation. Some believe that technology has provided a wide variety of benefits to

children, and aided with their development. For example, technology allows for the classroom to be updated and education to be modernized to keep up with the ever-changing and fast-paced world. However, on the opposing side, some believe that technology is stunting children's development, and making them more prone to violence.

Contemporary children are described sometimes as the second generation of digital natives. They are individuals born around the end of the first decade of the 21st century. In contrast to the first generation of digital natives, they have an unprecedented access to technology. A substantial number of homes in the western world have broadband which is provided via Wi-Fi. A personal computer (most often a laptop) and many other personal digital devices (smartphones, tablets etc.) can be found in most homes too. This means that contemporary children have access to high quality content on any device and that the location of the devices is not important since Wi-Fi provides the freedom and flexibility to consume digital content anywhere. Many contemporary digital devices come with a touchscreen. This means that the basic requirement to use such devices is a finger, and even the youngest children mange to master the intuitive touch interfaces. Children do not even need to grasp the basic concepts of a language before operating a device. The fact that children can touch an interface and the interface is responding back to them is enough to stimulate them and encourage them to explore further.

Prensky's metaphors of the digital natives and the digital immigrants could be explained in terms of space and time: a place where access to technology is provided (technology is also equated to language in terms of immersion) and age as the defining factor used to assess the degrees of nativeness (Prensky 2012).

Digital natives are defined as those who are born into a world that just naturally "adopted" computers and the web. They are called the native speakers of this technology. Many agree with Prensky that as a result of this exposure, digital natives do in fact think differently. They think in terms of random access like hypertext, use instant information, and construct knowledge in "audiovisual" ways, because the way they think is directly influenced by the technology they use. With the notion of digital natives came the notion of digital immigrants. In Prensky's scenario, digital immigrants are those who are not native speakers of the "technological language", but still have to live in the land of technology. They make use of traditional methods to develop and represent their thinking. They also need at various stages to represent their ideas via technological media. Digital immigrants share a lot of features with other immigrants who move to different countries where they confront different policies, cultures and above all other individuals who are natives in this environment (Prensky 2012).

The relationship of digital natives to technology is obviously different from past generations: technology is not just a tool but rather an important extension of their life. It is used to communicate, to learn, to entertain, to express oneself etc. Digital natives are not afraid to use technology as they are not afraid to expose themselves and their views on the online fora. On the other hand, just as in language, learning how to use technology does not mean that children can handle technology in different contexts and applications: just because a child can use a device, it does not mean that he or she can apply this device automatically to a more efficient context.

Considering the fact that technology doesn't transmute in any way, however, the enhanced transmutive pedagogy will associate with technology to create a kind of powerful possibilities in education. Technology particularly in this case means either effectiveness or an involvement of technological tools in an emancipatory use in learning. As a notion, it concerns numerous tools, including media, devices, machines and the networking hardware. Moreover, taking into account the theoretical perspectives for their effective application, we have to remember that technology does not restrictedly mean hi-tech. Nevertheless, the electronic environment including educational technology has become a vital part of our society's everyday life.

The contemporary educational technology widely includes as synonymous the following long list: mobile learning, e-learning, instructional technology, information and communication technology in education, EdTech, learning technology, multimedia learning, technology-enhanced learning, computer-based instruction, computer-managed instruction, computer-based training, computer-assisted instruction or computer-aided instruction, internet-based training, flexible learning, web-based training, online education, virtual education, personal learning environments, networked learning, virtual learning environments, which are also called learning platforms, m-learning, and digital education. These tags have been differently utilized and conceptualized and conflate to a wide sphere of educational technology as well as e-learning. These descriptive terms are on the whole somewhat more restrictive than the term "educational technology" as here they particularly and individually emphasize the digitization approach, component or delivery method. One of these modules, m-learning, emphasizes the mobility, but is otherwise identical in its fundaments with educational technology (Chen 2005: 91–100).

Within the educational technology there are various types of media that provide text, sound, images, animation and streaming videos, and include technology applications and processes such as audio or video tape, satellite TV, CD-ROM and computer-based learning, in addition to intranet/extranet and web-based learning. Moreover, information and communication systems, whether stand-alone or based on either local area networks or the internet networked learning, all determine many m-learning processes.

Mobile learning, being one of the most powerful educational practices, occurs in or out of the classroom. It is capable of being self-achieved with asynchronous learning or even instructor-guided synchronous learning. In conjunction with face-to-face learning, it also serves distance learning, which is called "blended-learning". Educational technology is freely used by learners and educators in homes, schools and other settings.

Important theoretical framework of mobile learning

In the current m-learning discussion, two theories are recognized as powerful conceptual frameworks: the social-cultural ecology of m-learning and the learner--generated context theory.

Socio-cultural Ecology of Mobile Learning

The London Mobile Learning Group tries to provide a framework for the analysis of mobile learning which does not only highlight one specific aspect of mobile learning practices but also includes its socio-economical and technological structures, the agency of learners and their cultural practices (Pachler 2010: 153 –167). By doing so, the learners' life-world became a starting point for the appropriation of cultural resources such as mobile devices via agency and cultural practices within given or created structures. Appropriation is here understood as a process of producing and receiving engagement when students use mobile technologies. This process is described also as subjectively meaningful: students engage in meaning-making. Both appropriation and meaning-making are defined as situated, contextualized and subjectively shaped (Pachler 2010: 155). Learning – if understood as appropriation – is described as a process of meaning-making within the arrangements of social and technological structures, cultural practice and agency. For the mobile learning discussion, the introduction of such a model means a systematic extension of the domain of the learners' subjectively meaningful appropriation and meaning-making with the aim to position oneself in relation to everyday life or the educational context (Pachler 2010: 156). Obviously, it offers great prospects for education and formation.

Learner Generated Context

Alternative to the Social-Cultural Ecology concept is the Learner Generated Context which is used to describe and understand the situational attitude of appropriation and the changes within the pattern of appropriation depending on the place, time and availability of cultural resources (Brown 2010: 7–9). By referring to the context, formal and informal mobile learning situations and processes become describable, comprehensible and plannable for learning. The Learner Generated Context concept gains importance because the context concept moves the focus away from user-generated contents and away from the idea of learning tools and preset learning contents. The increasing importance of the agency of learners, technologies, structures, networks and contents creation within the everyday life of students as well as within educational settings makes this concept powerful. This new concept also provides links to current developments in communication and to the contemporary understanding of learning as meaning-making in formal and non-formal structures. Both move away from the idea of learners being consumers of pre-given contents towards an idea of learners as producers of self-chosen and self-created contents: within contexts, students act in flexible ways and are able to adjust resources to the demands and conditions of the contexts (Brown 2010: 42).

Implementation of mobile learning in classroom-based learning practice

Three common ways to implement mobile learning are identified in formalized educational settings. Often mobile devices are implemented into learning contexts

from top to bottom: the top-down approach (Seipold 2014: 42). This means that the devices are set-up onto already existing teaching and learning structures. This is the case with large budget projects in which whole departments or study programs are provided with mobile devices such as tablets. This approach implies strong regulation, which means that students find themselves in a pre-set and given technological infrastructure and scopes of action, but this situation gives them equal opportunities within the learning process. This may be extremely important for the learners who are disadvantaged socio-economically and on an infrastructural level.

An alternative to the top-down approach is the bottom-up approach, which consists of taking available resources, such as devices and the know-how of students and teachers, into account (Seipold 2014: 43). This approach obviously saves on costs because devices do not need to be supplied and the students feel confident with their own devices. The classroom seems to be open to the interests, competences and knowledge based on the everyday life of the students. However, this approach can bring unexpected infrastructural challenges and obstacles for learning in terms of connectivity and technological transparency.

The third possible approach is the demand-oriented one (Arnedillo-Sánchez 2008). This is an option closest to the everyday use of mobile technologies. The devices, applications and practices are used only when users, teachers and students consider them necessary or helpful or when they are applied selectively and explicitly as teaching and learning tools. Such arrangements need to guarantee the seamless use of mobile technologies in the class as well as outside of it. Apart from this, the demand-oriented approach allows universities to be open to technology use in everyday life as appropriate and allows the design of lectures and workshops by keeping instructional, communicative and discursive learning, individual or in groups. Also, it provides a wider selection among formal learning materials and resources or allows to refer to everyday life informal resources. Given the popularity, affordability, portability and flexibility of such devices, it is not surprising that educators have considered harnessing these devices within and beyond the classroom for educational purposes (Crippen, Brooks 2000; Liu 2007; Motiwalla 2007).

The integration of mobile technology at all levels of education is a current and ongoing topic of interest for children, parents, practitioners and researchers alike. As new technologies emerge or as new advancements become available for existing technologies, new opportunities for their application in the educational environment become available. Most recently, emerging research is examining the impact of digital mobile technology for learning. The following section explores new research that examines how learners utilize hand-held mobile technology (e.g. iPods, iPads, iPhones and BlackBerry devices) for learning.

Mobile technologies in the classroom and beyond

In part, the desire to incorporate new technologies as part of instructional practice is a function of their ability to motivate children, encourage persistence in challenging tasks, and personalize the learning environment (Gee 2008; Hartnell--Young 2009; Looi et al. 2009; Specht 2010; Specht, Howell, Young 2007). In addition, the capabilities of these devices offer the potential for an "anywhere,

anytime", creative, and collaborative construction of knowledge (Evans, Johri 2008; Hoppe, Joiner, Milrad, Sharples 2003; Norris, Soloway 2008). The potential for learning with mobile technology has been equated with "21st century learning skills". Although multiple components constitute such 21st century learning skills, many frameworks identify creativity, collaboration, the co-construction of knowledge, and an inquiring approach to learning (Dede 2010) as key or critical components. Mobile technologies also provide the opportunity for children to develop self-regulated learning skills (e.g. Pintrich 1995; Zimmerman 1989). Self-regulated learners know how to learn and are equipped with the cognitive skills and tools that allow them to learn. First, among the learning skills repertoire of self-regulated learners that make them effective learners, is their desire to learn, that is, they are intrinsically motivated to learn. In addition, they acquire and possess a high domain of knowledge, as well as a variety of sophisticated strategies that allow them to learn effectively and efficiently. Finally, they engage in meta-cognitive behaviours that allow them to monitor their own behaviour and performance, set goals, and use effective strategies to maximize learning (Perry, VandeKamp, Mercer, Norby 2002; Willoughby, Wood, Khan 1994; Willoughby, Wood, Kraftcheck 2003). Together, this constellation of cognitive skills prepares children to learn. When the model of the self-regulated learner is extended to include mobile technologies as a learning tool, the skill set also includes the ability to learn in collaborative contexts as well as being able to engage in the construction of knowledge with access to the Internet at the children's fingertips. Self-regulation is a complex process that occurs over many years (Pressley, Hogan, Wharton-McDonald, Mistretta 1996). Although self-regulation takes time to achieve, educators can foster its development by designing the instructional content and choosing an instructional style to encourage learners to acquire the domain knowledge, strategies, and meta-cognitive skills needed to learn independently. At the same time, learning contexts must allow children the opportunity to learn from others and with others as well as from the myriad of information sources available to the learner through the Internet.

The potential of mobile technology for encouraging "self-regulated learning" and supporting a constructivist pedagogy needs to be measured using learning outcomes that match the self-regulation theoretical framework. Constructivist pedagogy leading to "self-regulated learning" involves the following characteristics: it is student-centered; group dialogue leads to shared understanding; formal domain knowledge is introduced, both planned and unplanned; there are opportunities for children to challenge existing beliefs through engagement in structured tasks; and, there is a development of the meta-awareness of the student's own learning processes (Richardson 2003). Digital technology has enormous potential to be used as a cognitive tool to support all of these characteristics (Lajoie 2000). In order to assess whether mobile technologies have indeed supported self-regulated learning, the gains in knowledge construction, learner motivation and satisfaction, and collaboration need to be evaluated, along with student achievement levels (Lai et al. 2007; Wang 2003).

Along with the potential promise of mobile technologies as an educational tool, there are concerns regarding the practicality of introducing these devices in educational environments. For example, the evaluation of mobile technology use

has identified potential difficulties associated with the slow transmission of data, the use of a small screen and the keyboard, and limited functionality in comparison to more traditional desktop and laptop systems. In addition, there are concerns that some of the functions that make mobile technologies so very attractive are the same functions that might inhibit or be detrimental for learning. For example, recent research found that children and young students reported learning decrements when they engaged in multi-tasking with Instant Messaging at the same time as trying to do school work activities (Junco, Cotton 2011). There are also concerns that over time, the functions that appear attractive to learners may become less attractive. For example, younger students demonstrated decreased persistence in engaged observation as part of the instructional task when asked to do photo-taking with PDAs (Lai et al. 2007). Overall, however, there is limited research examining how learners actually use mobile technologies.

Defining mobile technology integration

Before we discuss how to shift the role of the teacher in a classroom that is integrating technology, it is important to first define what mobile technology integration actually means. Seamless integration takes place when children are not only using technology daily, but have access to a variety of tools that match the task at hand and provide them the opportunity to build a deeper understanding of content. But how we define mobile technology integration can also depend on the kinds of mobile technology available, how much access one has to mobile technology, and who is using the mobile technology. For instance, in a classroom with only an interactive whiteboard and one computer, learning is likely to remain teacher-centric, and integration will revolve around the teachers' needs, not necessarily children's' needs. Still, there are ways to implement even an interactive whiteboard to make it a tool for the children. Willingness to embrace change is also a major requirement for successful mobile technology integration. Technology is continuously, and rapidly, evolving. It is an ongoing process and demands continual learning. "Effective integration of mobile technology is achieved when children are able to select technology tools to help them obtain information in a timely manner, analyze and synthesize the information, and present it. The mobile technology should become an integral part of how the classroom functions as accessible as all other classroom tools" (Hertz 2010).

When effectively integrated into the curriculum, mobile technology tools can extend learning in powerful ways. These tools can provide children and teachers with:

– Access to up-to-date, primary source material
– Methods of collecting/recording data
– Ways to collaborate with children, teachers, and experts around the world
– Opportunities for expressing understanding via multimedia
– Learning that is relevant and assessment that is authentic
– Training for publishing and presenting their new knowledge.

Types of mobile technology integration use (where and how)

It is sometimes difficult to describe how technology can impact learning because the term "mobile technology integration" is such a broad umbrella term that covers so many varied devices, tools and practices; there are many ways in which technology can become an integral part of the learning process. Just a few of these ways where mobile technology is possible to be used widely are listed below but new technology tools and ideas emerge daily:

– Learning with Mobile and Handheld Devices
– Project-Based Activities Incorporating Technology
– Game-Based Learning and Assessment
– Online Learning and Blended Classrooms
– Web-Based Projects, Explorations and Research
– Children-Created Media like Podcasts, Videos, or Slideshows
– Collaborative Online Tools
– Using Social Media to Engage Children.

Levels of mobile technology integration

Mary Beth Hertz shares four levels of classroom mobile technology integration she has observed in schools:

1. sparse: technology is rarely used or available. Children rarely use technology to complete assignments or projects;
2. basic: technology is used or available occasionally/often in a lab rather than the classroom. Children are comfortable with one or two tools and sometimes use these tools to create projects that show understanding of content;
3. comfortable: technology is used in the classroom on a fairly regular basis. Children are comfortable with a variety of tools and often use these tools to create projects that show understanding of content;
4. seamless: children employ technology daily in the classroom using a variety of tools to complete assignments and create projects that show a deep understanding of content.

Despite the dramatic differences in resources and abilities from classroom to classroom, school to school, it is possible to integrate mobile technology tools in ways that can impact engagement and learning for all children.

How is mobile technology used?

A relatively recent study involved a comprehensive examination of the integration of digital mobile technology in the form of iPods, iPads and iPhones in elementary schools (Mueller, Wood, De Pasquale, Archer 2011: 415–416). Combining both quantitative and qualitative data provides a picture of use from both the teacher and student perspectives. Specific children use, independent of prescribed teacher use, is considered in measuring the self-regulated learning supported by

the mobile technology. Research was conducted at two elementary schools that used and accessed the mobile technology in different ways. At one school the devices stayed in the classroom and were only given to students at specific times for specific tasks. The school was well-equipped with technology with interactive white boards, document cameras and sound systems in each room, a set of computers in a common pod area for groups of three classrooms, as well as a fully functioning computer lab in the library. At the second school, each student received their own individual set of devices (iPod, iPad and iPhone) for the school year, which they had with them at school and at home and used as much or as little as they wanted. There was limited technology available in the rest of the school, but a digital projector, a document camera, and several computers were present and used in the participants' classroom.

At the first school, seven classes (a first grade class, one congregated enrichment class, one congregated special education junior class, and four junior classes ranging from grade four to six) were involved in the study. Before the formal study began, the students in the grade four class kept iJournals where they could write their thoughts and ideas about the mobile technology and what they expected to experience. At the beginning of the study, children filled out a survey assessing their attitudes, use, and knowledge of technology. The survey examined specifically their experience with mobile technology and how they used it outside of school. During the intervention with the mobile technology, class observations were conducted during lessons with and without the mobile technology on a weekly basis. Classes were videotaped and researchers kept a running record of the actions by the students in the classroom. Students also completed several online surveys on a semi-weekly basis, which asked about their use of devices, enjoyment and whether or not the technology helped their learning or made it more difficult. At the conclusion of the study, the children were interviewed and asked about their views on the technology, specifically the mobile technology, and the impact it had on their learning. Focus group interviews with the students were conducted and recorded in groups of five to seven children at the end of the intervention period. During the interviews, children were asked about their use of the mobile technology both at home and at school. They were also asked about the difference it made to their learning and whether or not they would recommend it to other students. The variety of learning contexts across the study (several different classes and grades in two different schools) resulted in three general levels of access for students: limited access within the class; full-time access within the class; and fulltime access within the class and beyond. The three different contexts afforded students with unique learning opportunities and they utilized the mobile technology in different ways.

In general, the children's' use of technology fell between "some" and "a lot" over the research. Four general categories or types of use in the classroom were extracted from the qualitative research data (Mueller, Wood, De Pasquale, Archer 2011: 417):

1. reference tool: children used functions of the device for online editing and as reference tools as well as specific apps. The children who had full access to the mobile device more often indicated in the weekly surveys in their interviews and in most research that the mobile technology was used as a reference tool and that all of their "tools" and work could be housed in "one place.";

2. curriculum resource: the mobile technology was also used off-line, that is, with specific applications that had been downloaded by the teacher and/or requested by children. The apps provided information or an activity related to specific curriculum content, e.g. planet apps in science, musical instrument apps in music, translation apps in languages, drawing apps in art, calculation games in math, etc.
   Children utilized the apps either individually or in pairs as either a component of a lesson (e.g. creating a Martian that they then described in a creative writing activity) or as the entire activity (e.g. writing vocabulary using Use Your Own Handwriting app). In some classes the set of devices were more often used as a whole class activity, whereas the primary class often used the devices with a small group in a centre rotation;
3. research tool: both full access and limited access provided opportunities to use the mobile device as a research tool for "locating information", "answering questions", and "searching for pictures". Information was said to be "right there" without the need to travel to the library or start up a computer, providing an opportunity to answer questions immediately;
4. strategic learning tool: children also used mobile technology for a multitude of purposes beyond the curriculum and research. The technology was used to create and produce as well as to assess and assist in learning. Children used the devices to take pictures, record voice memos, listen to music, search for images, plan their day, generally help them learn, draw, write stories, type, back-channel, tell the time, chat, make posters, and for several other purposes. The strategic use of the mobile technology as a learning tool was more apparent and available in classes that had ongoing, individual access either at school or at school and at home. Some children even indicated that they had stopped using the iPod as much near the end of the year as earlier on as they would soon be losing access.

What were the children's attitudes and beliefs?

The study of Mueller, Wood, De Pasquale and Archer indicated that children found using the iPods, iPads and iPhones enjoyable, with all mean scores greater than three on a five point scale from zero (not at all) to four (a lot). In the same research, junior children included the benefits of the iPods, iPads and iPhones to be speed and fun, e.g. "saves time", "not going to the library", "faster", "quicker", "fun" (Mueller, Wood, De Pasquale, Archer 2011: 417).

Many interviewing data indicated that the technology made learning more engaging than books and teacher-directed instruction. Some children indicated that the tool created social isolation in that "everyone is looking down at the little screen" and "it is very quiet" when the iPods, iPads and iPhones were in use, while other children indicated that they were "excited to share what they were doing and what they found" on the iPods, iPads and iPhones. Children who were using the tool in a whole group setting, used it for specific activities such as shared information, links, and appropriate sites more often than individuals using the iPod as a strategic tool for a specific purpose other than searching. Classroom observa-

tions indicated that teachers included explicit opportunities for children to share, to encourage collaboration, but many children also did this spontaneously. When asked to explain how the technology supported their learning, children repeated their references from the research to "ease" and "time". Children also indicated that the "just-in-time" feature of the mobile technology meant that they had the information at their fingertips and that it was searchable, in comparison to a book that has set content which could be outdated. Children who took the technology home were less enthusiastic about its potential outside the classroom, indicating for the most part that they preferred a laptop if it was available. They did speak of the portability of the device and that they used it on bus transportation to listen to music and play games. Children in the special education class expressed their engagement with the mobile technology that, in this case, was offered as one component in a suite of Web 2.0 collaborative tools and in-class computers (Mueller, Wood, De Pasquale, Archer 2011: 418).

What were the barriers and support for child learners?

Children identified some issues and concerns with the technology, indicating that the small size posed some problems in viewing and typing, but most qualified this statement by stating that it was overcome by the benefits of the device. The older children who had full time access were not as positive, noting both benefits and drawbacks, analysing when it was appropriate to use and when it was not. In this context, children also mentioned the "addictive potential" of the device and the responsibility of monitoring appropriate content and maintaining the technology (charging it, synchronising it, not losing it, etc.) Classroom observations and interviews indicated that children were generally flexible in troubleshooting the devices, getting a different device if necessary, sharing with a partner, asking a friend to assist, and following short, visual and written instructions for entering apps and search engines. When a problem occurred, it was not unusual for children to solve it individually or with other children before approaching the teacher. In fact, there were several instances where children demonstrated aspects and functions of the devices to the researchers/observers (Mueller, Wood, De Pasquale, Archer 2011: 420).

What are the implications for learning?

The variety of contexts and degree of access, as well as the variety of grades and learning needs connected with the positive response across the majority of participants, suggests that mobile technology, such as the iPods, iPads and iPhones, is versatile and engaging for children. It is flexible in its use and moves from a curriculum resource to a strategic learning tool as access increases. Differences between children who had full access and those with more limited access suggest that for the technology to be an integrated learning tool, it must be available and used on a regular basis. More limited access does allow for curriculum connections and for easy, fast connections to searchable information. Although children were

engaged with the technology, this was less apparent with some children who had full time access outside the classroom as well. It appears that these children did not see the need for the smaller device outside the classroom when a computer was available. It was, however, seen as a useful device in areas where a computer was not an option: for example, on the bus. For this group of children, the mobile device was perceived as one of many learning tools available. The immediacy and ease of access to information and reference tools was perceived to be a strong benefit. Children demonstrated collaborative inquiry when using the mobile device to search for information and when troubleshooting around the device and its operation. The assistive features of the technology, e.g. voice memo or note taking apps, served as scaffolds for children with learning challenges and as supports for independent learning for all children. The flexibility of the device in terms of the purpose and the variety of apps available, suggest that it is capable of differentiating the learning process for children at different developmental stages, with different needs, and in different contexts.

Among the main benefits of using the mobile technology in the classroom, Mueller, Wood, De Pasquale and Archer (2011: 420) mention the following:

– Increases motivation
– Facilitates access to, management of, and sharing of information
– Fosters children's learning and performance
– Allows a wider range of teaching strategies
– Fosters individualized learning
– Improves the reading experience
– Encourages communication and collaboration among children and between teachers and children
– Improves computer literacy skills
– Nurtures children's creativity
– A highly portable tool
– Facilitates student assessment
– Improves the quality of pedagogical support
– Facilitates learning how to write
– Makes it easier to organize schoolwork and assignments
– Children can make versatile and vivid multimedia presentations
– Significant benefits for children with learning problems.

As different types of mobile technologies become increasingly available in schools and home contexts, children and teachers will need to explore and define the most optimal contexts for mobile learning tools. Obviously, most of the technologies mentioned above are nowadays in a very advanced stage and children and teachers can expect to master their use in the coming decade.

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Summary

Children within Mobile Technology: Interacting and Learning

This article analyses the research question of how learners utilize hand-held mobile technology for the teaching of children. Mobile technology is an "anywhere, anytime" creative learning tool that has the potential to support the development of self-regulated learners. The article examines user-defined utilization of the mobile technology in elementary education settings: a comprehensive examination of the integration of digital mobile technology in an elementary school. Specific student use, independent of prescribed teacher use, is considered in examining the self-regulated learning supported by the mobile technology.

Keywords

children, mobile technology, mobile learning, school

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Book apps for younger children: between a book and a computer game

Describing the contemporary media reality as the era of the convergence culture has already become fixed practice in research reflections of various fields of the social sciences. Henry Jenkins' idea assumes the abandonment of the dominating decades-old vision of new media pushing out the older ones for the benefit of the acceptance of the narration in which various media create a certain mosaic in which new relationships and new constructs appear (Jenkins 2006). It might be thought that the media product that is the main subject of this paper – book apps – is a good example confirming Jenkins' theory. The fact that the said applications started to mushroom and gain popularity a couple of years after the publication of the breakthrough Convergence culture only strengthens such a thesis. This is because book apps – designed for tablets and smartphones – smoothly combine the characteristic features of all the earlier media: text, sound, image, video film, and the use of internet connections.

The researcher's attention is particularly attracted to book apps dedicated to the younger children. This is so for several reasons. When browsing through the stocks of, say, App Store, i.e. the main platform of distribution of apps dedicated to products of the Apple company, we can see that from the point of view of sheer numbers, it is the children's book apps which dominate among all the book apps, and that they also sell the best (Stichnothe 2014: 1). Additionally, when analysing the apps themselves, it is easy to conclude that they are the ones which execute the idea of the media mosaic typical for media convergence to the highest degree. And, finally, researchers indicate that in the times of the development of communication technologies, it is increasingly the case that literature, or, to put it even more broadly – text – accesses the users for the very first time in none other but digital form. At the moment, this is the case mainly in the countries which are most technologically advanced, in which the appropriate equipment is commonly available, and the media competences of the citizens are higher. Hence, opinions appear such as those expressed by Ghada Al-Yaqout and Maria Nikolajeva in their essay Re-conceptualising picturebook theory in the digital age – which assume that book apps have an important role in the literary initiation of the youngest children: "Today, digital picturebooks are often the first literature young children engage with."

(Al-Yaqout, Nikolajeva 2013). When assessing the possibilities of book apps, some authors formulate far-fetched conclusions – Lisa Margarete Schons gave her work devoted to book apps the following title: Is the picture book dead? The rise of the iPad as a turning point in children's literature (Schons 2011) (although in this case the title should be most probably treated as a planned provocation).

This paper aims at an analysis of selected aspects of book apps for younger children (history, terminology, research issues). The relationship between the products in question and the traditional book and computer games will be given a much more thorough treatment. This is because, on the one hand, it determines the media nature (including the ways of use) of book apps to the fullest extent; however, on the other hand, it confuses parents, as well as teachers and tutors: "[...] convergence of reading and game playing enabled by new digital formats raises concerns and misperceptions among adults. In a recent series of interviews in a library in Southern California, several parents expressed surprise that apps found on the iPad could be anything but games" (Martens 2014: 19).

Definitions are a very significant issue accompanying reflections concerning electronic publications (not only the ones addressed to the youngest recipients). This is because we can still observe terminological chaos – both in the scholarly environment and among publishers and producers1. Currently, two dominating e-products containing the word "book" in their name function on the market. On the one hand, the market offers **"e-books", computer files** containing digital copies of paper books. They can be played on stationary computers, laptops, tablets, special e-book readers, as well as mobile phones. All further actions to do with e-books: the very reading and browsing through the content, changing the font style and size, making notes, etc., require separate software. E-books are actually very close cousins of the Gutenbergian codex, as they maintain the linear text-based structure of the message, and, with few exceptions, do not offer any interactive options.

The second product – the one being the main subject of this paper – is the book app. **Book apps are computer programs** designed solely for tablets and smartphones (with various operating systems, including IOS, Android, and Windows). Their basic feature is their interactivity executed (from the IT point of view) by software components allowing the user to animate illustrative elements, turn on the sound, image, etc..

The origin and development of book apps for children is closely related to the market introduction and popularisation of tablets. This new generation of mobile devices combining the qualities of a portable computer, a music and video player and an e-book reader introduced entirely new possibilities to the world of media, leading to the onset of a mass production of apps. In turn, these products contributed to a significant change in the market of electronic publications for the youngest children. As Junko Yakota and William Henry Teale put it: "The typical e-book read on a dedicated e-reader (Kindle, Nook, etc.) has not hit the children's literature world for elementary school child readers in a particularly big way, but e-books and apps that incorporate text, illustration, and interactive features and

[1] Even today, researchers who are less familiar with the subject make such odd mistakes at conferences devoted to electronic media as referring to e-book readers as… e-books.

that are directed at an audience of young children – often thought of as the e-equivalent to picture books – have become a major force." (Yokota, Teale 2014: 577).

Apple tablets appeared on the market at the beginning of 2010, and it was as soon as in May that year that the Winged Chariot company published the app *Emma Loves Pink*, universally considered to be the first book app for children. The same year saw *Alice in the Wonderland* published for iPad (*Alice in the Wonderland* 2010) – a product which is still valued and popularly purchased. Upon its launch on the market, the app stirred much enthusiasm of the reviewers, who saw it as a "pop-up book of the twenty first century" and "a product, which reinvents reading" (*Alice in Wonderland iPad App Reinvents Reading* 2010). An important event in the still brief history of this kind of applications was also the publication of an electronic version of Olivier Jeffers' ambitious picturebook addressed to a more demanding audience entitled *The Heart and the Bottle* (December 2010). The app recorded a commercial success, and the publishers thus additionally proved that e-publications do not have to be tacky products based on low quality scenarios and books.

In the course of almost five years since the appearance of such apps, a considerable number of scholarly papers devoted to them have been published and they have also become a subject of interest of some well-known researchers so far focusing mainly on picturebook research, including Maria Nikolajeva, Junko Yokota or Betty Sergeant. Several subjects appeared on which both academicians and practitioners have concentrated their reflections. Without any doubt, the most important one is the discussion on the development of a research paradigm allowing adequate scholarly reflection (comp. Turrión 2014). Practitioners (teachers, librarians, tutors) try to build pragmatic criteria of evaluation of the quality and educational usefulness of these products (comp. Bircher 2012). Polish research reflection concerning the book apps for non-adults is still rather poor. Noteworthy are Małgorzata Cackowska's texts, which penetrate the educational value of book apps and popularise them (comp. Cackowska 2013). I myself have analysed book apps for older children and teenagers from the point of view of the book studies (comp. Zając 2013, 2014). Several scientific conferences of which they were the main subject were also organised (for example in Barcelona in 20142). Another important step in the popularisation of book apps for children was the introduction of an award for these publications to the list of trophies awarded during the world's biggest and most prestigious children's book fairs in Bologna (*The Bologna Ragazzi Digital Award*, since 2013).

Still, is not the reference to a "book" – which, after all, ennobles an electronic product – in the name of the medium a misuse? One of the most frequently asked questions in the context of the media products under discussion concerns their "*książkowatość*" ("bookness"). The term – very useful for our contemplations – was introduced to the Polish bibliological reflection by Sebastian Kotuła. It denotes a "collection of attributes an object must have to be a book" (Kotuła 2013: 104). In the simplest terms, the evaluation of a bookness of a given product would be based on checking whether it contains (printed) text, on what medium ("material [a codex made from paper cards put together]") it was published and in what way

[2] Simposio internacional "La Literatura en Pantalla" Grupo GRETEL, Departament de Didàctica de la Llengua y la Literatura, Universitat Autònoma de Barcelona, Spain, Barcelona, 3–4 October 2014.

one gets acquainted with its content ("reading [contact with the text understood in this way and produced in the material contemplated in this way]") (Kotuła 2013: 106).

An attempt at the justification of the bookness of the applications under analysis can be commenced with the main argument, i.e. the perception of their literary value delivered by the text. Book apps are equipped with text as one of the main (although not the only) medium of the narration understood in the broadest possible way. At the same time, it should be stressed that most book apps for children offer an option allowing one to turn on a narrator reading the text, and that all of them use iconotext (or icono-linguistic unity) – an amalgamation of textual and iconic narration typical for picturebooks and comic books. However, this does not change the main principle under which it is the written word which constitutes the basis for the construction of the presentation of the content in book apps.

Another argument in favour of bookness, which should be referred to in this place, is the fact that a very considerable part of such apps are based on literary originals. Used for the purpose are both classical works – fairy tales (the traditional repertoire of fairy tales includes for example Little Red Riding Hood and Cinderella), the more modern classics (Lewis Carroll's *Alice in Wonderland*, Polish productions, such as Józef Ignacy Kraszewski's *The Old Man and his Wife*, or Stanisław Jachowicz's *The Sick Kitten*), and modern works (Pablo Curtis' *Love, The App* or the already mentioned *The Heart and the Bottle* by Jeffers). To immediately reject the obvious counterargument: the adaptations are made with the help of entirely different tools than film adaptations. Their creators use ready illustrations such as plates and spreads, which in the course of the production process acquire new properties (animations, interactivities, etc.). At this point, it is worth pointing out that one of the basic discussions accompanying the development of the products in question concerns the advantages and disadvantages of adapting the already published printed books (in particular picturebooks).

When attempting to answer the question concerning the bookness of these apps, we should also mention the already quoted article by Al-Yaqout and Nikolajeva. The authors carry out an analysis of the formal structure of book apps, trying to identify the elements constituting the equivalents of certain morphological components of the elements of a picturebook for children. Hence, an icon used for the launching of the app, which is displayed on the tablet or smartphone home screen, would be an equivalent of a book cover, the screen (as a unit organising the narration) would be equivalent to the picturebook spread, which fulfils a similar function, while a subsequent update would be tantamount to a subsequent edition of a paper book (Al-Yaqout, Nikolajeva 2013).

It is difficult to clearly answer the question of the degree to which book apps meet the third component of bookness – that of reading as a manner of familiarizing oneself with the narration. Without any doubt, the decoding of written signs is one of the main elements of immersing oneself in the content of the app, but it is neither the only, nor (which is most important) the absolutely necessary one. As mentioned above, most book apps offer a narrator mechanism which may substitute independent reading. Also, to some extent (just like in the case of a picturebook, which would find it problematic to meet this bookness condition), its user may try to follow the content by just looking at the iconic message.

Therefore, book apps for younger children have very many qualities of bookness. Still, they are certainly not books, although owing to these similarities, they can be an interesting research object for bibliologists. Book apps also disclose in many ways their connection with another field: ludology (game studies), a discipline focusing on games (Turrión 2014).

It is very easy to find – at different levels of the users' interaction with applications – connections with games. They can be divided into two types. The first one consists in the direct participation in the very game, which is separated from narration and offered to the user. The second one is related to the notion of gamification, which is immensely popular in marketing. Gamification should be understood as activities consisting in the "transfer of mechanisms we know from games (including computer games, but not only) to the real world for the purposes of changing human behaviour" (Tkaczyk 2012: 10). Another definition – one which better fits the subject under analysis – resigns from the concept of the "real world", while indicating the goals of the strategy: ""Gamification" is the "idea of using game design elements in non-game contexts to motivate and increase user activity and retention" (Martens 2014: 20).

On the example of selected apps, we may show that their users in some situations follow gamification scenarios prepared by the product authors, while participating in the game independently in other situations.

At the very primary level (in chronological context, i.e. the child's first contact with the app), the very identification of the navigation system used in a given product has the properties of a game. In the absence of some standardisation (which covers for example the book), the child must face a certain challenge: determine what interface solutions are used to operate the app. Obviously, the most basic actions – mainly the switching to the next screen being the equivalent of page-turning – have already acquired universally used markings. They are normally arrows in the bottom left and bottom right parts of the screen (*Amelia and Terror of the Night*, *Alice for the iPad*). However, equally popular are "clicks" on the screen edges which are not marked with icons, or sliding the finger on the touchscreen imitating a similar gesture in the paper codex (*Love, The App*). It is much more of a challenge to identify mechanisms managing the app at a higher level: to find the menu and the commands allowing the activation of additional options, such as loud reading, recording of the voice (*The Old Man and his Wife*) or personalization of the app (be it by the introduction of one's own bookplate or photo) (*Little Red Riding Hood*). Of course, every app of this kind is equipped with the appropriate instruction manual, but it should be remembered that the recipients' reading comprehension is not always very efficient. As a result, the children are very often (with the exception of joint reading with a parent) left to their own devices, i.e. identification by trial and error.

A certain development of the above "game" – one which is more connected with the very familiarisation with the narration – is a typical gamification challenge the creators of the product provide to its users, consisting in the search for interactive elements hidden on the screen. The elements do not necessarily have to have anything to do with the development of narration (a hidden nest of a squirrel – *Amelia and Terror of the Night*, a banana skin you can throw to the bin – *Locomotive*). Here, we are dealing with a special version of hide-and-seek. The recipient

examines the screen, checking which elements may hide various effects, and is sometimes rewarded with a comic effect: an animated insect touched with a finger makes funny noises, the clicked tree hole reveals its secrets in the form of a bird's nest with amusing nestlings, etc. (*Amelia and Terror of the Night*).

Another way in which games function in book apps for children is the most obvious one, which requires little commentary: the direct participation in the "disclosed" game. A large share of the products are equipped with the "play" option in their menu. This allows one to play a short computer game to a lesser or higher extent connected with the narration. This may take the form of doing e-jigsaw-puzzles (*The Old Man and his Wife*) or a game of skill (such as the "drawing" of patterns on the screen in *The Heart and the Bottle*). The use of such possibilities is facultative – it does not affect the possibility to get familiar with the tale, and allows one to return to it at any moment and place of narration.

A much more interesting version of the above strategy in the gamification version is making a positive result of a game a condition for further familiarisation with the narration – the result is no longer an "option" or an addition, becoming a part of the narration. This strategy can take several forms. On the one hand, it can take the form of a computer game classic – where the user has to collect various artefacts, which can be used at some stage of the course of the app (e.g. the collection of feathers lost by birds in *Little Red Riding Hood*). Another solution is to collect the appropriate number of points (which can also be symbolised by artefacts), which allows one to collect an award in the end. In book apps, this may take the form of the possibility to read the final part of the tale or some kind of a bonus, for example a song (*Amelia and Terror of the Night*).

The most advanced introduction of gamification to the products in question is making the readers able to decide about the development of the narration. When becoming familiar with the tale, at some point the child has to decide about its further course. Apps using this gamification strategy are published by the Nosy Crow company (*Little Red Riding Hood*, *Cinderella*). On the way to her grandma, Little Red Riding Hood stands at the crossroads and has to decide whether to follow the "path to the feathers", or the "path to the flowers"? Each of the choices results in an alternative version of the narration. Obviously, the number of options is very limited, and the end of the tale is consistent with the literary canon.

The appearance of games and the implementation of gamification do not necessarily take place separately. The described strategies combine (quite often) to make uniform concepts. When choosing the "path to the feathers", the user of *Little Red Riding Hood* must participate in a game of skill consisting in the collection of feathers lost by birds, and the feathers must be subsequently used during the end stage to solve the wolf issue.

Closing this part of my contemplations, I must most definitely declare that – just like in the case of books and bookness – book apps despite their very many connections with games cannot be described as such. A game (in all the forms presented) is not a goal in itself – it plays an auxiliary role: it is to strengthen the readers' interest, their engagement in their familiarization with the narration. Additionally – as shown above – the game (games) and narration interweave, and the boundary between reading and playing a game blurs.

Summary

It seems that book apps are something more than a passing craze or a product, which will leave the media stage during the next few years. They deserve in-depth research reflection based on the understanding that the apps – despite the fact that they share many features with books and games – are a separate media entity, requiring special methods of description and analysis. The passion with which non-adults treat the products of electronic mobile technologies, and the fact, as quoted above, that they become a portal of initiation to literacy, and perhaps even to literary initiations, calls for the attentive studying of the mechanisms of the use of applications. In this context, some researchers write about reading "remixed", referring to the mosaic-like media structure of book apps (Kasman, Stephens 2012).

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Summary

Book Apps for Younger Children: Between a Book and a Computer Game

The article deals with the topic of children's and young adults' book apps. It shortly presents the history of this medium and the most important stages of its development. Children's book apps are discussed as a part of the "culture of convergence". Outlined are also both terminological aspects and the basic previous research attempts directed at these book apps. The main focus of the article is the connections between apps and computer games. The Author attempts to explore these connections on several levels starting from the first user's experience, through gamification structures installed within the narrative, and ending with micro-games included in the book apps as a kind of "bonus".

Keywords

children, tablets, book apps, games, convergence

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Possibilities of new technologies in education. A review of interactive apps with developmental potential

Introduction

In this text, I am going to focus on the educational content of apps for touchscreen devices (tablets, smartphones) available on the global market and designed for children in their family environment, i.e. for home-based socialisation. This topic, now undertaken mainly by the popular media (press and television, socio-political weeklies, social media, as well as internet newspapers and vortals or blogs related to child-rearing), is highly dominated by a common self-help book discourse, represented – not only in Poland – by the so-called technophobes, who scatter moral panic towards the new common enemy endangering the traditional values – as observed by David Buckingham – a scholar studying the reception of modern technologies in the field of education (Buckingham 2008: 133). A much smaller determinism marks the approaches of the so-called techno-enthusiasts, who try to show the importance of new, previously unimaginable opportunities for development, and for social education. For example – a series of studies carried out in the United States since the very beginning of the appearance of mobile touchscreen devices (mainly iPads) revealed that the parents of children regularly using the devices observed a considerable development of their cognitive processes such as memory and problem-solving, as well as a broader range of vocabulary, reading skills and mathematical thinking (Rideout 2014). Buckingham analyses the different approaches to technology and the emerging new cultural forms – indicating the differing ideologies and concepts of the child and childhood behind the slogans formulated by the opposing approaches as well as their politicisation. What both fractions have in common though is only their belief in the strong impact of modern technologies, especially digital ones, on children. There are many more arguments full of aspirations and concerns, hopes and fears: the supporters of new technologies can see their educational and developmental potential generating a change of the ways children learn, backed by the vision of the child as the demiurge, whose creativity and competences in the area of participation in culture may be developed in many fields, which may result in the (utopian) emancipation of children, whom Marc Prensky determined as "digital natives" (Prensky 2001: 1).

The opponents strongly, although – as Buckingham points out – with very limited amount of empirical evidence (Buckingham 2002), argue in favour of the existence of threats to children, who in this option are considered to be helpless, sometimes unreasonable, and vulnerable to the negative standards resulting from the digital technologies as an offer.

Buckingham's line of reasoning is very interesting, as it makes us look at the new phenomena as the birth of new cultural forms and the changing experience of the users of digital technologies. What is the matter of the digital culture is convergent and is embedded in the context of a huge power of commercialisation and claims of the global industry – mainly the entertainment industry. According to Buckingham, what is meaningful in this configuration is the control, the left and right anchoring of which is a symptom of "crisis about the changing relationships of power and authority between adults and children" (Buckingham 2008: 134). Similar concerns are expressed by Polish researchers (see Balicki 2005).

As the author of this article, I definitely belong to the techno-enthusiasts: I want to propose a reflection on this aspect of the world, life, and the ways in which children learn it, which changes in front of our very eyes; I attempt to show the developmental and educational potential of interactive apps for mobile touchscreen devices.

Starting my review of selected products from the market of apps designed for children, I need to remark that it is huge, global, and probably entirely free from social control. To a large extent, it resembles the Polish book market, which is marked by a clear qualitative difference between the most popular, mass products connected with economic capital and the products which originate from cultural capital and are produced with educational and social value in mind, particularly in terms of aesthetics. In the huge collection of the global production of apps for children – which can mainly be found in shops to do with devices with iOS or Android systems (several hundred thousand items)[1]– it is difficult to find the items which really facilitate development and learning, and separate them from the quasi-educational mass of, in essence, kitsch productions full of advertisements. Although both the creators and the systems of shops assume categorisation in terms of substance (subject matter, content and goals) as well as the age of the target recipients of the produced and distributed apps, it is essentially impossible to identify the ones which facilitate the development of various competences and be sure of their quality, despite the fact that the apps obligatorily need to be described in terms of their content and include several screenshots. The price is one of the distinctions allowing one to relatively easily find the appropriate app which is searched for. A specific price should guarantee both the top quality of the substance of the app, and its technical convenience. Unfortunately, however, it is not always that a high price of the app is tantamount to its real educational and developmental value. Although not yet frequently, free apps existing and distributed owing to subsidies from various cultural institutions start to appear. For example, it was owing to the partial financing from The Britten-Pears Foundation that a technologically advanced iPad app entitled *The Young Person's Guide to the Orchestra* was developed (by AVCO Productions). It was inspired by Benjamin Britten's 1946 concept of mu-

[1] The Windows Phone shop is incomparably poorer in valuable educational apps.

sical education; it was graphically designed by the famous illustrator Sara Fanelli. It is a fantastic music lesson containing a score (Britten's original manuscript) synchronised with a filmed orchestra performance, a lot of information about the history of the work, instruments, musicians, etc. as well as elements of exceptionally creative play activities in music composing, and games, and quizzes, between which the user may move freely.

As for the Polish context of the promotion of apps for children, the parents or educators looking for a piece of advice concerning the selection of the best apps often use portals devoted to the introduction to the use of the latest technology (http://wcosiebawic.pl/ [accessed on: 16.01.2014]; http://www.appysmarts.pl/ [accessed on: 16.01.2014]). However, they are mainly addressed to consumers, and they are sponsored, which means that they often promote selected products of specific producers (developers). Poland definitely lacks such initiatives as the vortals *Dust or Magic* or *Children's Technology Review* run by Warren Buckleitner, who aims at a broadly understood promotion of the educational use of the potential of new technologies.

Below, under individual categories, I will review selected apps for children available for devices with various operating systems (although mostly those designed for devices with iOS), developed by various companies. The choice is subjective, oriented towards the promotion of the educational and developmental potential, the degree of technological advancement and the experience of interactivity, and is largely based on aesthetics.

Apps for babies and preschoolers

Shops with applications offer thousands of multimedia apps for very small children. They seem to be the developers' favourite type of production and ideally fit tools with a touchscreen. They resemble the first picturebooks: ones owing to which children as young as babies learn colours, shapes, names of objects (types of vehicles, fruits, toys, animals, household appliances), notions (opposites, sizes, weighs, numbers, letters, sounds, as well as, for example, expressions of emotions), and activities (names of plays, professions and activities related to the simplest medical aid or the hygiene of physiological needs). The interactivity of touchscreen devices facilitates great results in the area of experiencing the said notions and cognitive effects. The possibility of making sounds (sometimes also releasing smells) during the presentation of an object, the free repetition of activities giving the child the sense of agency, the selection of preferred views (pages), the causing of various reactions, the activation of associations – all this enhances the child's perception, the creation of notions in the children's minds, remembering, cause and effect reasoning, and other cognitive processes which are important at the given moment. Therefore, it is important to provide a small child with apps which will be as beneficial as possible. Offers for very small children include the *Owlie Boo* series (developed by Matias Gravano): owing to a very simple navigation created on the page-turning principle, they provide children with an opportunity to become familiar with simplified but aesthetic visual representations and sounds of animal species living in various environments. The series of apps developed by

the *Sago Sago* company also provide a huge amount of educational foundations for small children combined with creative fun. For example *Sago Mini Sound Box* is a fantastic play in the learning and identifying of sounds, *Sago Mini Space Explorer* makes the child able to go on a (simplified) cosmic trip, while *Sago Mini Bug Builder* facilitates the independent composition of the look of small bugs. What the best developers in the industry find the most important are the elegant, simple stylistics and form as well as intuitive operation. All this combined gives the child the desired cognitive and developmental effect.

The craziness of the parents prioritizing the possibly early school readiness of their children, i.e. their learning to read and count as early as possible, is expressed in many different ways. This is answered by the publishers of books for children racing to publish books teaching children letters, numbers and many other concepts (*concept books*), and by app developers. The tablet seems to be the ideal present day substitute for the stone tablet, which was used primarily for the basic teaching of letters. This is because the former makes it possible to draw on the screen with one's finger, for example shapes which resemble letters and digits, and to transform, with the touch of one's finger, a concretely presented number, for example two blocks, into its symbolic form – in this case: 2. This action can be repeated endlessly, developing the appropriate connections in the developing child's brain. Additionally, the device makes the user apply gentle hand gestures, which is particularly important when children suffering from considerable muscle tension undertake for example their first writing attempts. In the situation when the child has a great motivation to reach the desired effect, he/she has to relax his/her hand. This is most often so in the case of hyperactive children and children suffering from cerebral palsy (which I will discuss further on). Examples of Polish apps include the production of the WSiP publishing house entitled *Litery i cyfry* [*Letters and Digits*]: on an imitation of a typical green school board the user draws popular patterns with chalk to smear letters and digits: first in print and then in cursive handwriting with their fingers. Another interesting proposal, more aesthetically extended, is the *Telewizyjne Abecadło* produced by TVP S.A. What I personally like most are the apps which are carefully developed in terms of their aesthetics and which are very interactive, which make one learn while having great humorous fun, such as *Endless Alphabet* and *Endless Numbers* developed by Originator Inc., unfortunately without a Polish version.

The immensely popular (although currently temporarily unavailable) totally Polish app *Mózg elektroniczny* [*Electronic Brains*] (produced by M-Concepts Sp. z o.o.) is great in all respects. The game is a digital version of my favourite childhood game testing one's knowledge from various areas, and requiring the player to connect objects with their appropriate names, activities, etc. with the help of electric cables causing a bulb to shine when the task is successfully completed. It contains a lot of exercises (in decent graphic design) with gradual difficulty, connected with various fields of knowledge, facilitating the development of observation skills, associations, memorization etc., which can be used by children as young as two or three years old, but also older ones.

Apps fostering creativity

In Poland, we have a considerable, varied and continually growing offer of books (activity books) inspiring the readers to engage in creative activities (the original Polish ones include the *Wytwórnik* [*Workbook*] series, and *Typobazgroł* [*Typodoodle*]). At the same time, developers are racing to produce apps with twin, albeit interactive, content. The Swedish company Toca Boca is the unquestioned global leader providing model proposals (practically every subsequent creator follows its steps) marked by top technological and graphic levels of advancement. Year after year, their app offer becomes increasingly rich and varied. For example, their *Hair Salon* app is an invitation to play being a hair salon in which the same nice customer is stylized in many different ways. In *Hair Salon Me* it is even more fun to create one's own often dreamt-of image (for example in long curly violet-pink hair) owing to the animation of one's own photographic portrait, while in *Toca Mini* even very small children can easily stylize a slightly slimy human figure. In the apps *Toca Monsters* and *Toca Kitchen,* meals are prepared for different, sometimes whimsical protagonists. In *Birthday Party*, it is possible to arrange a party in various conventions for selected guests. In *Toca Cars* and *Toca Train*, one participates in races or a train trip rich in adventures. *Toca Robot Lab* and *Toca Builders* require the user to experiment and create many bizzare objects. *Toca* Nature, one of the last productions of the company – which gets better and better with each product launched – is a real masterpiece. It is a premediated play as the creator of the world, and its authors with true ecological zest show the immediate consequences of the human impact on nature. The app creates the space of a virtual world, makes it possible to turn it, and slightly resembles the extremely popular *Minecraft* with its objects used for creation. However, its graphic design is much gentler (non-pixel), softer, and imitates the three-dimensional reality. And there are no frightening zombies or creepers one has to kill in the survival option in *Minecraft*. This is because this app is focused on creativity.

The apps of Polish developers which develop the imagination and creativity also enjoy great popularity. They include the JumpApp company (belonging to Luiza and Sebastian Bachórzewski, which offers great, attentively developed apps making it possible for the users to create – for example in a Puppet Workshop – monsters from socks, gloves, buttons, pieces of materials, string, etc. Plasticine beings can be created using the same principle in the *Imagination Box* app. Owing to it, small children, including those who suffer from disabilities, who do not have sufficiently developed praxis or manual and motoric skills, are able to obtain the result of a configured desired figurine by selecting elements with one finger. The playing time is even nicer owing to the calm, relaxing melody in the background. This developer's apps are very highly valued by global therapists of disabled children. *Cute Food* is a similar app, which additionally promotes healthy eating habits. It makes it possible to compose meals – mostly from pieces of colourful vegetables cut out from photographs.

Another Polish developer who has managed to win global recognition is Duckie Deck Development. The company offers – though in my opinion in less original aesthetics – apps for toddlers (starting perhaps with children as young as one year

old) working on a similar principle, such as the food-related *Duckie Deck Sandwich Chef* and many others referring to various areas of children's interests. Another Polish design studio – Pixle – managed to create a huge shop stand in the very engaging app called *Storest*. Owing to the app, the children's favourite play can take place in the situation in which elements of virtual and real space are combined (for example, some products offered for sale can be found in the virtual shop, while others can be printed out together with codes and scanned by the cash register on the screen).

The children's imagination is greatly stirred by apps which contain augmented reality (AR). They make one feel that borders between the digital and the reality were dissolved and that the digital permeates the reality. Such applications, in the previous category – for small children – include *AR Flashcards-Animal Alphabet* (Mitchelehan Media LLC). Owing to it, the child engaged in playing the three dimensions learns the names of animals starting with the subsequent letters of the alphabet.

Therapeutic apps

iPad, one of the very first mobile devices with a touchscreen used for the facilitation of the treatment of autistic children, was at some point called a miraculous tool. This is because apps can be used for the teaching of notions, categorisation, etc., which is effective when, for example, an autistic child especially dislikes communication with its environment (human being) even in a defined educational situation. It is then that the iPad (owing to the appropriate apps) takes over the role of the therapist and educator – it leads the child through the subsequent stages of learning, i.e. the acquisition and coding of knowledge on selected topics: colours, notions, activities, etc.. For this reason, the apps prepared for autistic children resemble the ones dedicated to the youngest recipients, as discussed above – only they are used to a broader extent. They include for example the apps from the *Autism iHelp* series (developed by John Talavera): *Food*, *Colours*, *First Words*, *Play*, *Sorting*, *Shapes*, *Emotions* and many more, which help children suffering from autism acquire very important competences. These apps are marked by their exceptionally simple graphic design, without any disturbing elements (they have clear figures against clear backgrounds). They also have very intuitive navigation, which helps those users suffering from manual difficulties. There are also some other, more advanced (and simultaneously appropriately more costly) apps facilitating augmentative and alternative communication (ACC), such as *Proloquo2Go* (developed by AssistiveWare). This app helps primarily those persons who are unable to talk independently, and makes it possible to communicate by touching symbols on the screen or entering words into the appropriate places which subsequently change into speech (a human voice). It can be used by people with various disabilities, including those suffering from cerebral palsy. Programs designed for tablets or smartphones are also greatly successful in the treatment of such persons – mainly because they do not involve the use of a mouse or a keyboard, which is difficult for them. The audiovisual effects and the instant feedback appearing even owing to an accidental touch of the screen motivate such persons

to continue exercises, and provide the sense to their own actions, in particular in the case of naturally inquisitive children. Therefore, it is not unimportant which apps are best for this kind of therapeutic work. They must be attractive enough to mobilise the user to use their disabled hand and thus develop the so-called fine motor control. Or they should aim at the facilitation of communication with the environment. The highest amount of information on the available apps with therapeutic potential can be found on websites in English (such as http://www.appyautism.com/en [accessed on: 16.01.2014]).

Apps for artists

The possibilities to learn animation (getting familiar with its principles), just like the possibilities to learn programming methods, have probably never been greater – and the very learning has never been as easy – than today, when we use programs designed for mobile devices. Owing to the app *Animation Creator HD* (mi-Soft) even children only a few years old can, initially with the help of an adult, and then independently, create their own original animation by drawing (with a finger or, more precisely, with a pen), adding drawings, and recording sounds. The interface and the navigation are so friendly and simple that children do not need special help from adults. *Daisy the Dinosaur* (Hopscotch Technologies) is a great, very simple app for the programming of the movement of characters. With the help of very clear commands (unfortunately, only in English), children can give various tasks to the dinosaur called Daisy, exercising cause-and-effect reasoning. They thus learn easily that they can themselves code, be game designers, that it depends on their ideas what and how the player for whom they prepared the play will do. A very modest and pretty graphic design adds additional points in the favour of this creative app.

Paper app (FiftyThree) is actually a fully professional atelier, creating huge possibilities for artistic expression. Many different options of strokes of brush, ink pen, felt-tip pen, and pencil, the riot of colours, the magnifier (allowing one to elaborate the details of a selected drawing fragment) give both the little and the professional artist[2] creative freedom and as a result an immediate digital version of their wok. *Garage Band* (Apple) is a similar app, albeit one aimed at the creation of music. This powerful music studio allows the users to compose and record works for various instruments (including a guitar, piano, strings, and percussion), and owing to an internet connection with other users of this app, even to establish a music group representing any genre of music.

A lot of visual pleasure and substantial effects of work can be enjoyed owing to the *Let's Create! Pottery HD* app (Infinite Dreams Inc.). It is a potter's studio in which anyone, even persons who have never had anything to do with a potter's wheel, can easily throw a vase or some other vessel and learn the operating principle of the device that allows to make these things.

[2] It was using this app that Józef Wilkoń created illustrations for the book app *The Elephant's Child* (Fundacja Festina Lente).

Apps facilitating the acquisition of subject-specific school competences

A comparison of a tablet to a stone tablet returns in connection with this category. App shops offer many applications facilitating linguistic education. For example, *Duolingo Learn Languages for Free* (Duolingo), downloaded millions of times in all systems, is a free app for the learning of foreign languages at many different levels. It diagnoses language proficiency and adequately generates tasks and exercises. The users learn by repeating, listening, writing, and reading at their own pace. Elements of play and games increase their motivation, necessary to complete the subsequent levels. This app can be used at all levels of education, starting with kindergarten. Similarly, many game and play elements are included in the apps which can be used in early education. At this level of the use of technology in education, we deal with applications which replace the conventional worksheets and workbooks, such as exercise books, for simple arithmetical calculations or spelling exercises, as well as calculators, abacuses, dice, etc. What makes the majority of such apps different to the traditional sets of exercises is the usual feedback concerning the correctness of the solution (which makes the parents'/guardians' checking whether the child has succeeded more efficient, actually taking a load off their shoulders).

It is a similar situation with mathematical apps selected from at least several hundred ones available, which cover the four elementary arithmetic operations: addition, subtraction, multiplication, and division. It is worth mentioning the original ones, in which the operations are weaved into a plot. They are *Mystery Math Museum* and *Mystery Math Town* (Artgig Studio), and owing to them the users, involved in great fun, experience events, familiarise themselves with exhibits from many different museums, and collect digits allowing them to go through doors and windows if they solve partially prepared mathematical puzzles from the numbers they have collected. This is not banal. Although it is not a timed game, it requires observation skills: the player needs to remember where numbers, operations, doors, and rooms are. The prize is the understanding of mathematics and becoming aware that the knowledge of mathematics is the only road to success. Slightly different, but guaranteeing equally good fun related to arithmetic exercises facilitating memorisation, is the *Sushi Monster* app (Scholastic Inc.): a hungry monster, indicating a result, demands that sushi rolls being the components of its addition or multiplication be served to it as soon as possible and is happy when the task is completed correctly. The app offers very many exercises with arithmetic operations in different configurations, sometimes more than a hundred in one round, but great fun does not make the user notice this multitude. The same number of exercises given to the child in a workbook would be an immense load.

There are many other, much simpler, although useful and frequently downloaded apps, which essentially generate easy arithmetic or algebraic exercises and require correct answers – such as *Math Practice* (TeachersParadise.com) or *Math Flash Cards* developed for Android – or which introduce elements of the so-called gamification (here: a play for two players at one device for the time during which they do basic arithmetic exercises), such as *Math Duel* (Ellie's Games LCC for iOS or PeakselGames for Android).

The app *Splash Math* (StudyPad Inc.) is an example of an almost comprehensive elaboration of the mathematics curriculum at the early education and further levels. It has been downloaded by more than ten million users all over the world so far. It contains many operations in the area of arithmetic, geometry, algebra, data and time measurement, and characteristics of numbers. All the operations are carried out in compliance with the selected level of knowledge and abilities, and each of them is accompanied by an instruction and, obviously, feedback, and the accomplishment of the subsequent levels is connected with elements of fun – and prizes. Graphic design, sound and the animated, interactive images attract the users to playing with mathematics, making associations with it positive. In English-speaking countries, the app is used at different levels of education in schools.

Niche picturebook apps

I wrote about book apps and the artistic niche of this genre for the readers of the *Ryms* quarterly devoted to books for children and youth (Cackowska 2013). In Poland, the Fundacja Festina Lente company, which brings the more than half a century old books by Franciszka and Stefan Themerson to contemporary children, deserves particular attention. Owing to animations, games, and animated elements, as well as the excellent narrator – Piotr Fronczewski – the app created from the book *O stole, który uciekł do lasu* [*The table that ran away to the woods*] by the pair of artists brought it back to the cultural scene. It is also worth mentioning two apps which received the Bologna Ragazzi Digital Award. *David Wiesner's Spot* (Houghton Mifflin Harcourt), which seems to be the artist's dream come true, is entirely fascinating to me, although it only received the jury's special mention. Owing to the stretch gesture of our fingers, we gradually get inside the original image, feeling the illusion of infinity. Various adventures, which create an intriguing visual narration, await us during this fantastic journey. Wiesner also showed his masterly skills in a printed textless book *Flotsam*, but it is here that technology allowed him to let loose his crazy spirit to a much higher degree. The designer of a fun app with a 3D effect addressed to the younger children – *My Very Hungry Caterpillar* (StoryToys Entertainment Limited) based on Eric Carle's book – which is also familiar to Polish readers – was awarded with the BRDA award. Here, children look after a very gluttonous protagonist, collecting subsequently apples, pears, plums and many other products for her, until she truly miraculously transforms into a butterfly. Apart from the plot, this highly interactive and multimedia app contains a great many educational tasks encouraging the users to give things their names, count, categorise, arrange them, etc..

Among the continually growing number of book apps, there are also some controversial ones. One example is *Geoff and his Two Dads in… Tomato Trouble* (Wompi Studios Pty. Ltd.). The app was developed as the first one in the series of adventures of an authentic dog from Australia – a charming, very intelligent Jack Russell terrier called Geoff, who is disabled and moves owing to the wheels replacing his paralysed hind legs. His great dads, but also promoters making him famous[3], are

[3] Geoff and his fathers even have their own Facebook fanpage.

a homosexual couple. This digital book (with a relatively small number of interactive elements, but with a pretty painterly design) presents an amusing story of Geoff, who during his crazy play with a dog friend destroys his neighbour's bed of beloved tomatoes, while at the same time covering with mud the washing she had freshly hung out. Luckily, his friendly fathers find a positive solution to the problem.

Although they are not books, I also wish to mention a couple of fantastic, exceptionally narrative adventure apps by the Czech game developing studio Amanita Design – *Botanicula* and *Machinarium*, which are versions of their predecessors – computer games. There is some attracting force in them, owing to the thoroughly premeditated, wise plot that has to be played: in *Botanicula* the protagonists must save the last seed of the life-giving tree, while in *Machinarium* the protagonist fulfils his mission in the world of metal robots. Both the apps contain no speech at all, and are full of riddles to be solved, which teach the user the reasoning of the protagonists trying to reach their goals. Each of them has wonderful graphic design and music, which seem to be film effects.

A word of conclusion

This review of apps is a selection made from the perspective of an adult "expert", although a large share of the products mentioned seem to be very popular among children all over the world (e.g. those made by TocaBoca studio). It may mean that we are witnessing the development of – according to the old model – children's plays, new interpretative communities, new common ranges of experience and practices. On the other hand, we should be aware that – quoting Buckingham – the social process is mediated by the market and commercialisation, which results in social distinctions and inequalities (Buckingham 2008: 136). For example, most of the apps that I have mentioned are not free. However, the prices are not very high – they normally range from 10 to 30 zloty for educationally valuable plays to which the child can go back over and over again. Even if not all of the desired apps can fit the device, which is not very capacious in terms of the number of gigabytes, once the iOS apps are purchased and removed, they may be installed again at any time – this time free of charge. The problem is that children have an excellent feel of market distinctions, and soon learn how good or bad quality a device they own, what they can do with it and what is above their reach. However, it turns out that the differences are not so much connected with economic shortages or the absence of access to technology, but above all, as strongly worded by Buckingham: they "[…] are also to do with access to the intellectual and cultural capital that is needed to use that technology in effective and creative ways" (Buckingham 2008: 133). In other words, it is much easier for the children of parents originating from, say, the middle class, to gain access and support directed at their development and education. For teachers, this may – or should – be tantamount to pondering on the conditions for the possibility or actually the necessity to shift and include the increasingly popular mobile technologies from the family towards institutional socialisation, in particular in the early education area.

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Summary

Possibilities of New Technologies in Education. Overview of the Developmental Potential of Interactive Apps

The aim of the article is to highlight the educational and developmental role of apps for children. The text discusses the usefulness of apps and the role of interactivity in children's development, both in family and school contexts. Apps are explored and described in different objective categories: creativity, special needs, maths, first concepts for toddlers and apps for preschoolers, app books. The article aims at turning the readers' attention to the educational potential of the apps' content.

Keywords

children, apps, tablet, iPad, games

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Gamers' remorse: decision-making in story-oriented video games in the context of socialization and social awareness

In the world in which information technology develops rapidly, we should take a look at the problems it generates. Pedagogues should not only be able to perceive the new, but they should also endeavour to apply a research approach to it.

An increasing number of children play video games. Their initiation in this field takes place sooner than before. Game-playing is also a significant activity of youth and adults. It is worth asking oneself whether we should curse the spirit of our times or rather better take the effort of studying the potential benefits that can be brought about by this form of entertainment.

Pedagogues associate video games with evil, with metaphorical demons tempting especially students and talking them into abandoning learning for the benefit of empty, not intellectually developing fun. In this context, the contemporary technological progress gives rise to concern – just as if anything new had to be related to fear and danger.

In my opinion, technological novelties are equipped with considerable educational potential, opening up new learning opportunities. Apps making educational processes more attractive are used during various classes, and in our daily lives we witness the appearance of tools of inculturation in the form of video games, which not only introduce gamers to 21st century culture, but also tell stories which often require analysis from the recipient. Video games contribute to the development of culture and science. The mechanism of gamification uses the game mechanics to encourage people to do things they normally do not want to do or which they do not know they can do in a different way – by making them more attractive, supporting internal motivation, and fostering creativity. Systems known from games can be used to make work on projects or education more efficient, but they are also successful in more direct activities – as socializing messages or tools making people more aware of today's social problems.

In this text, I shall have a look at the potential of story-oriented video games in the context of socialisation, raising awareness and education; I shall present results of preliminary research aimed at making pedagogues aware of their possible impact on gamers and, at least partially, capture the relationships between players and story-oriented video games. I performed my study on a sample of

171 subjects of various ages. It was based on a short internet survey concerning decision-making in story-oriented video games. The survey consisted of both closed and open questions aimed at the gathering of deeper answers and adding value in the form of concrete examples of games, situations and reflections, and it was distributed owing to the support of social media portals and internet fora. Since my survey was carried out in the Polish language, my subjects were mostly Polish.

Before I present the results and my reflections on the issues under discussion, I wish to make it clear that this paper does not aim at acquitting story-oriented video of all suspicions; it is not a question of a sacralisation of this kind of cultural text, but an attempt at yet another look at this type of games as a new phenomenon with its own possibilities and impossibilities.

The age of the development of and research into story-oriented video games

Video games research is relatively young, especially in Poland. The subject of games was marginalised – in particular in pedagogy – and often perceived as an impediment to effective learning, although the field called pedagogy of video games is responsible for a certain change in this scope. A research breakthrough was recorded when Jerzy Zygmunt Szeja's work entitled *Gry fabularne – nowe zjawisko kultury współczesnej* [*Role-playing games – a new phenomenon in present-day culture*] (Szeja 2004) was published. In his book, the author reflects that video games – along with story-oriented games – are a new phenomenon of present-day culture. At the very beginning of his work, Szeja calls video games texts of culture (Szeja 2004: 8), which is a significant observation as well as an attempt at a departure from the infantilised approach to all kinds of games. Unfortunately, it is commonly believed that games (be it video games, board games or parlour games) are the domain of children. If they are at all associated with adults, then only with those who are not very serious. Calling the game a text of culture breaks the vision of a "non-serious product". Szeja does not approach the text in a way that is separated from the market – he mentions titles and gives examples. His book is not entirely abstract, since the author put up a bridge – everyone is aware of what to look for and where, and can check a given product, thus encouraging researchers to explore the subject of games.

Szeja was followed by new, usually young video game researchers. There is a visible tendency to carry out studies into massively multiplayer online role-playing games (MMORPG) which allow gamers to play together in an extended world divided into regions in real time. The games raise a lot of interest, since they are largely easily available and free – although there are also popular MMORPGs requiring payable subscriptions. Popular MMOs include *World of Warcraft*, *Ever-Quest*, *Rappelz*, *League of Legends* (the popular *LoL*, which actually is more related to the genre referred to as a multiplayer online battle arena, which consists in online battling) and *Neverwinter* published in 2013. A considerable number of social researchers focus on MMO games because participation in them demands interaction with others; the games were developed with tournaments of play-

ers from all over the world in mind. Examples of research into MMO games and generally online games as such include Mirosław Filiciak's *Wirtualny plac zabaw. Gry sieciowe i przemiany kultury współczesnej* [*A virtual playground. Online games and transformations of contemporary culture*] (2006) and texts by young researchers such as Dominik Porczyński's *Komputerowe gry fabularne – pogranicze światów rzeczywistego i wirtualnego* [*Computer role-playing games* – a *borderland of the real and virtual world*] (Porczyński 2013) or Paweł Olejniczak's *Wirtualny Teatr. Koncepcje Ervinga Goffmana w świecie gier sieciowych* [*Virtual theatre. Erving Goffman's concepts in the world of online games*] (2012).

I shall venture to say that despite the growing interest in the subject of video games, the social sciences – and particularly pedagogy – fail to analyse story-oriented games or look at them as a text of culture picturing certain social needs and visions, as well as developers' ideas of what a good video game is. In their productions, the authors of games provide us with constructs gamers encounter almost on a daily basis. The *2014 Game Industry Trends* report (*GIT: Kids 2014*) shows that according to parents, their children spend the following amount of time playing games (on a weekly basis): 9% play for less than an hour, 45% play for between 1 and 5 hours, 30% play for between six and ten hours, 10% play for between 11 and 15 hours, 6% play for more than 16 hours. The results show how much time children (and let us remember that adults also play video games) spend with this kind of products. Since games are designed with the visual reception of textual constructs in mind, they transmit content, which generally largely depends on the authors' beliefs. Games – just like literature – transfer constructs, discuss them, and create phantasms. Therefore, it would be difficult not to claim that since games are a fusion of their developers' beliefs about people (game actors are created on the basis of their ideas of human behaviours, anxieties, desires, views, minorities, etc.) and the recipients' vision (developers always keep in mind the target players), a certain cultural content is transmitted. The sort of content – be it stereotypes, emancipatory thoughts, or the other way round – depends entirely on the creators of a given title. Is this not in itself a sufficient reason to analyse the content of games in terms of the constructs they contain?

Going further towards the main topic of this text, it is the posing of problems – via the plot, characters, events or anything taking place between these game elements – which is the way to engage the player to the point of immersion, to transmit thoughts through the game. The users solve problems by taking decisions – either in the form of dialogues, strategic elements (which can also be found in story-oriented games), or actions (for example who to kill, who to save or rescue). Making choices is of key importance and it is this element which is the gist of the recipient-game interaction.

It is on the basis of this thought that I carried out a study aimed at the determination of the players' attitude to decisions taken in video games. Are decisions perceived as indispensable? What do the players base them on? In what way do they immerse themselves in the virtual world? What does one's conscience has to do with all this and does it play a significant function when we deal with a virtual thing such as a video game?

Virtual decision-making – the dreamt-of challenge

An exceptionally significant question which is worth asking concerns the players' attitude to decisions in games. I made it my goal to get rid of my own opinion and ask players whether they are happy about such a possibility and whether they like making choices. I decided to attempt to break one question into two separate ones, but this is for a reason. Gamers may value an opportunity to make decisions in games, but we must not exclude the possibility that they consider the decision-making process itself difficult, frustrating or tiring. However, I discovered that from the statistical point of view, their answers coincided ideally.

Diagram 1. The number of gamers happy about the possibility of taking decisions in games who like this aspect of story-oriented video games

Interestingly, not every person happy about the possibility to take decisions in games declared that he/she liked it, but the votes finally coincided.

As can be seen, a considerable majority of players appreciate the possibility of taking decisions in story-oriented video games. Is this a significant finding? Yes, it is. The making of choices has always belonged to significant actions. Here, I wish to refer to Zygmunt Bauman and Tim May's text:

> There is no shortage of questions that arise within our daily activities. Some may occur fairly regularly and not preoccupy us for very long, while others may be prompted by abrupt changes in our circumstances and lead to further and deeper reflections. These types of questions concern matters that do not, ordinarily, preoccupy us, but which still inform issues about who we are and how we make sense of the world around us. Sometimes these inquiries will raise questions about why something happened? (Bauman, May 2004: 59).

Just like in daily life, decision-making in games is meaningful. In many story-oriented games, players are faced with difficult choices, with unclear results. Before deciding, they have to think, since decisions are related to consequences – including the ones which cannot be seen immediately after the choice is made. In some cases, the result of a decision can become prominent as late as towards the end of the game or even in its continuations (as is for example in the *Mass Effect*

series published by BioWare – the decisions taken in the first part of the game affect events which take place even in its third part). What are the consequences of the above? Well, it leaves almost no possibility for loading the save files and changing the path taken. Obviously, this is acceptable in the case of less significant tasks, but nevertheless the players are forced to take responsibility for those significant and often most difficult choices. The immersiveness of video games is understood here as a sense of permeation into another reality – in this case to the reality of the world of the game (Filiciak 2006: 62). Immersion consists in the temporary stopping of disbelief; it is the subject's immersion into a fictitious world to such a degree that it seems to be more real than the real one. Also, decisions seem to be more important – we know that we deal with a game, but feel a growing responsibility for the virtual world we shape with our own choices. Conditions for immersiveness include the interactivity of the product (the player must be able to influence the world of fiction) and the cohesiveness of the reality presented in the product; the recipient's expectations of the product must also be consistent with its conventions (Filiciak 2006: 63). Immersion can be easily explained on the basis of an engrossing book – while reading, we accept its conventions, its form; we enter into interactions with it, since when we read it, we imagine characters, events, scenery – we are no longer just passive recipients, but owing to our imagination, we create a universe presented in the work; we must find the characters, plot, and other elements of the novel credible – on discovering inconsistencies, logical errors, or flat psychology of the characters, we are knocked out from the world of fiction, we no longer believe it.

Is the type of the taken decisions important? Yes, it is, since treating them seriously and calling them appropriately begins to count even more owing to immersiveness, and through the nature of decision-making, idiosyncratic sensitisation can take place – the person-specific (here: gamer-specific) feeling which builds in a given (and not other) way both the gamer's personality and the elements which embody him/her (metaphorically or literally, the game recipient's reflections and opinions as well as the vision of the virtual equivalent of the gamer – avatar – in the sense of building his/her personality in the game on the basis of his/her actions and decisions). Games may put gamers in unclear situations – perhaps in the same way as life, demanding reflections and decision-making – the taking of a single decision characteristic for a concrete person. Obviously, the number of decisions in games is limited, but it is often varied. When you can answer a given problem in three or four ways, knowing that your choice will affect the game, you must react. The gamer can do it within a few seconds, but it often takes more time than that. The player becomes a kind of judge deciding about the further course of the story. Here, we may refer to Philip Zimbardo's theory described in the book *The Lucifer effect: understanding how good people turn evil* (Zimbardo 2008), which is also familiar to fans of psychological films owing to the film *Das Experiment*. The theory assumes that through the creation of the appropriate environment/conditions, a person taking on a role takes it on almost totally, to the degree that people considered good begin to behave in an evil, despicable, ruthless manner. How does this relate to video games? Let us take the example of *Dragon Age: Inquisition* published in November 2014. Here, we take on the role of a character (a woman or a man), who is the only survivor of an attack of evil creatures using a new tear in the sky

to enter the world of the living – and it is the main character who is blamed for the invasion. After a relative exemption from the charges, we join the Inquisition and subsequently become its leader. Being the leader, we are not only responsible for all the strategic decisions, alliances, and combat with the evil, but we also become a sort of a judge. Therefore, we are obliged to listen to the characters' stories, charges and testimonies. Obviously, it is also our task to deliver judgement (one of the several available ones). The very high interactivity of the game guarantees immersion, we feel as if we really were the character (or just the other way round – we put ourselves in his/her position instead of taking on the role suggested by the game). At the same time, providing its concrete (and not any other) environment, the game makes us listen and decide. While under the influence of the immersion, the player accepts his/her role and must take a decision – i is impossible to adopt an indifferent attitude. Just like in Zimbardo's theory, the gamer is thrown into a predetermined situation in which certain behaviours are provoked. He/she must become a judge and reflect on whatever happens around. When finishing the game, the player abandons his role, but the experience and memory remain – just like sensations, conclusions and reflections.

Games, similarly to literature, are able to leave one with what I shall refer to as a "sensation". Sensation is like memory, but it awakes one in a specific way. Fictitious events offer developing experiences – such as the experience of taking a decision, the feeling of giving one the sense of reality and empowerment. Paradoxically, owing to their references to fiction, people interacting with it – be it in the form of games, books or other interactive products of culture – acquire elements of real competences which, put together, create them as human beings. Simplifying the theory, by interacting with a fictitious universe, people undergo "cultural training". And here I would like to refer to some observations made by Michał Kruszelnicki – a researcher studying another fragment of culture (literary horror to be more precise):

> Both the onlookers of a tragedy and readers of horrors consciously desire to deal with protagonists who are in danger, suffer, and get into a variety of troubles the recipients would not like to face themselves (Kruszelnicki 2010: 70).

I am not referring to this quotation without a reason. Just like in the case of a horror, the players can experience challenges, problems, sufferings, and, naturally, decision-making from the space of "their own safe armchair" – owing to playing the game. All this is in a controlled, but at the same time immersive and relaxing way, which however requires their attention. When adding such an attitude to the problem, we may call a game with even more certainty "training". Players have an opportunity to "touch" the gist of the decision, without any personal consequences. In a sense, the "touching" is a symbolic bringing of the potential of the game to life. Let me quote Antoni Kępiński:

> The external world is changeable, while the internal world, the body, is constant. Among the constantly changing surroundings, living beings must maintain their *constantia*, their "truths", if it is unchangeability which is believed to be the core of truth. One's own body is "real", and the surrounding world is an "illusion", because illusions are marked by constant changeability. The touchable, the things we can have physi-

> cal contact with, acquire traits of true reality. […] The things which are not in direct touch with our bodies are always marked by traits of illusion, abstraction, unreality (Kępiński 2012: 32).

I believe that Kępiński's words can in a way be related to the players' interaction with a video game. The latter in itself is fiction, the mentioned "illusion", but through interactions with players, the game and its fragments become increasingly realistic, or true. A game offers challenges, we get more and more familiar with its mechanics, plot, and characters. Is this the reason why games are so attractive to so many people? Or is it because the players themselves make the game an immersive environment when they like its structure, plot and idea? Does the game make the unrealistic real owing to its interactions with people?

Without any doubt, many people will ask themselves whether gamers make decisions consciously when playing. In my study, I was trying to determine which choices are the most difficult ones for them and which ones made a deep impression on them. Many players discussing their decisions in games mention their result. It is natural that in our daily lives we try to anticipate the consequences of our actions and words; in the majority of situations, we are aware that every action brings about certain consequences. Gamers stressed the importance of this aspect a number of times and they repeatedly stated that the hardest decisions were those the consequences of which could not be anticipated:

> The toughest decisions in games are those the consequences of which cannot be predicted, and which have a significant impact on the further course of the plot.

> I consider the lesser evil decisions (when both choices bring about some losses) difficult; the same goes for decisions having consequences which cannot be easily predicted. And the decisions which go out of control when the choice is made.

> The hardest decisions are made when you have to choose between two opposite sides (Kenny and Jane in *The Walking Dead*) or those the consequences of which are unclear.

As can be seen, the consequences are important and it is often due to them that players find it hard to accept entertainment going along the tracks of a "wrong" decision and reach for a virtual-psychological defence in the form of loading the save file dating to the moment before the decision was made. The gamers themselves confirm that it is frequently caused by the consequences of a decision. Here are a few statements explaining the gamers' return to the previous save file:

> Direct consequences burdened my character's conscience :)

> Too heavy remorse or my favourite character's death as a consequence.

> It is normally my pure curiosity of checking what the other path offers. Sometimes, rarely, I am very unhappy about the consequences of a decision and I prefer to take another one, which does not fit the character so well, just to avoid them. Examples include some choices made as a part of the tasks from the *Baldur's Gate* series, causing the leaving of some valued character.

> It happened twice in *Planescape: Torment*: after talking to Ignus I decided that he did not deserve to be freed and that he should be still frying in fire, although I had lost

access to mighty spells because of that. On another occasion, a decision which initially seemed to be the right one had much too great consequences – the guilty one was disproportionally punished.

Obviously, decisions taken while gamers play video games do not have the same power as those made in real life, where if a tragedy happens people cannot "start anew" or "try once again", but, rather than this, it is the showing of the results of one's actions which is the matter here. In life, just like in games, it is difficult to predict many consequences.

At the same time, it is worth pointing out that the first statement was marked by humorousness, which shows the respondent's distance to his/her own words. Obviously, this can be understood in many different ways.

What are other similarities between games and the reality? Does the very decision-making process have the same course as in daily life? And how about the gamers' remorse featured in the title? I shall discuss these questions further on, at the same time disclosing what gamers are guided by when taking their decisions.

Gamer's remorse and motivations or what decisions taken in video games are based on

In the previous part of my article, I largely discussed ways in which different elements of games can be interpreted, I mentioned titles and talked about the gamers' attitude to making decisions in video games and to their consequences. It is the gamers' attitude to video games which makes the entire discourse significant. While conducting my research, I decided to check four different aspects of decision-making in search of the one gamers consider most important. They were to determine the significance of the particular aspects which motivated their choices. Table 1 shows the percentage-based breakdown of answers provided by 171 respondents (only valid answers, i.e. ones provided in correctly filled forms, were taken into account)[1].

As can be seen, the moral aspect proved to be the most significant one, which shows an important and interesting phenomenon consisting in making the game not only a space of entertainment, but also a virtual universe, in which gamers may create their super-ego, a representation of morality, and conscience and decision-related possibilities. Given this power, video games turn out to be a challenge area. Interestingly, it is gamers themselves who have shaped this area – they demand (as indicated in the earlier parts of my text) that productions contain a considerable number of decision-making opportunities; they want to decide about the fate of their characters and the world in which they live; at the same time, however, a specific transfer of the gamers' morality to the fictitious world of the game takes place, making it an arena of fights for beliefs, doubts and moral problems. When additionally looking at the role-playing aspect – which is considered very important – we might wonder whether gamers perhaps desire conflicts. They simultaneously

[1] The table shows results as at 2014. There are plans for the continuation of the research, collection of responses and analysis of the results

Table 1. Aspects gamers take into account during decision-making in story-oriented video games

	Unimportant	Of little importance	Important	Very important
Moral aspect (according to one's own hierarchy)	4.1%	13.5%	25.1%	57.3%
Rewarding aspect (according to awards for taking the particular decision)	11.1%	36.8%	34.5%	17.6%
Role-playing aspect (according to what the character played by the gamer would do)	9.4%	15.8%	24.1%	50.9%
Challenge-decreasing aspect (simplifying further the game)	36.8%	35.1%	19.9%	8.2%

Source: author's own work

highly value the possibility of importing their own morality to the world of the game and the possibility of playing a given character, which in the case of a conflict – a mismatch between the creation enforced on the character and the gamer's morality – in a sense leads to a dichotomy, the fight between the gamer's morality and the construct in the form of the character developed by the authors of the game. The results presented in the table below show that the challenge-decreasing aspect and the rewarding aspect are the least interesting aspects of gaming.

Since the sample was small and respondents were limited solely to Poles, it would be difficult to refer the results to the entire community of gamers. However, what is worthy of attention is that the gamers' morality is already emerging as a significant element of a game – along with the possibility to play a role developed by the authors. This shows certain scientifically interesting tendencies.

It would be difficult not to link morality and decision-making with pricks of conscience. To maintain clarity of understanding about what conscience actually is, let us refer to its most popular definition – the one offered by the *Encyklopedia PWN* [*PWN Encyclopaedia*], and then proceed to a slightly different formula:

> conscience, Gr. *syneídesis*, Lat. *conscientia*, a notion in the area of moralistics, ethics and moral theology (marked by a very broad meaning), usually understood as an internal instance of moral judgement, individual differentiation between the good and the evil, interiorized values accepted by the individual and shared by a social group (*Encyklopedia PWN* 2013a).

As is commonly understood, conscience is to help us differentiate between good and evil, and it is often described as an internal voice prompting, judging, reminding us how we should act. The definition from the encyclopaedia refers to the value accepted by an individual – for the conscience to truly have its classic potential, one needs to accept the content. During their lifetime, people deal with other people, live in a social group, which in a way develops individuals.

Principles and values are transmitted by our guardians, through the impact of the social environment characteristic for a given individual; an individual becomes socially conditioned, acquires certain competences, his/her undesirable behaviours are hampered and traits necessary for the existence in a group are developed. It is not without any reason that Lech Witkowski describes consciousness – referring to Sigmund Freud – in the following way:

> […] Freud "identified the sense of duty with the internalisation of a host of idiosyncratic episodes" related to accidental events present even in the case of memory disturbances. Therefore, conscience is the "memory of idiosyncratic events" (Witkowski 1993: 237)

Here, consciousness is understood in a different way – as sensitisation to and awareness of certain issues, behaviours, and phenomena owing to internalized experiences. Owing to events, human beings acquire the possibility of a more-detailed insight; they are forced to reformulate and overwrite their feelings. Can the above be related to story-oriented video games? Yes, it can. It has already been mentioned a number of times that games offer a broad range of stories, characters, relationships and graphic representations of places, conflicts or simply events. Games create a special, closed, and created virtual environment or arena of training allowing gamers to experience quasi-accidental events.

They are quasi-accidental because they only pretend to be accidental – they had been developed or programmed by their creators, but from the point of view of a game recipient, they cannot be anticipated. This is why the events are both accidental and planned. What is more, they are food for thought. Does not the structure of story-oriented games develop the human way of thinking? Does it not sensitise us and make us develop our ability to make judgements?

In my study, I asked gamers whether they felt pricks of conscience after taking specific decisions in a video game. The results are presented in Diagram 2.

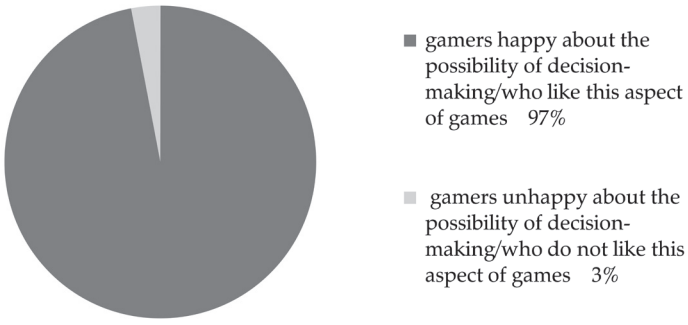

Diagram 2. The number of gamers feeling pricks of conscience due to a "wrong" decision made while playing a video game

It results from the data shown in the diagram that a considerable number of gamers provide a positive answer when asked about their experience of pricks of conscience due to virtual decisions. It is a surprising example of the way in

which phantasms and imaginings find their way into the reality. This confirms that the imagined world can influence the real daily world. Although the imaginings, graphics and texts influencing the player are a part of an unreal context, the emotions, the feelings, and the sense of the appropriateness (or inappropriateness) of the taken decisions which they stir are absolutely real. Obviously, in the case of a game, it is possible to do the thing impossible in the real world – load the previous save file in virtual-psychological mental defence; it is possible to change one's decision (with the exception of some cases when the decision and the result are so distant that such loading seems senseless – the time distance can stop some players from using an old save file). As much as a return to the previous save file makes the moment of decision-making less meaningful, the appearance of pricks of conscience sensitises; it is an experience. We can go a step further and ask whether games can therefore develop emotional intelligence, understood as an "ability to understand and control one's emotions" (*Encyklopedia PWN* 2013b). Decisions – both those made in games and in real life – put us in specific situations, enforcing our responses, also emotional ones. Gamers are given a challenge of interpretation of their feelings and their control. Do the emotions stirred by the game really have such a great potential? It is difficult to answer this question, but seeing how they can evoke one's remorse or pricks of conscience, we may risk to answer: yes, they do. Another question which follows is whether people have the need to feel emotions? We do not have to think long before giving an answer, but as to avoid being guided solely by my subjectivism, let me quote the psychologist Daniel Goleman:

> […] our deepest feelings, our passions and longings, are essential guides and (…) our species owes much of its existence to their power in human affairs. That power is extraordinary (Goleman 2007a).

Feelings and emotions play a significant role not only in the development of art, but the whole of humankind. Was it the need for feeling which led to the taking of emotions and challenges (which also stimulate anger) into account in video games? The need for excitement, anger, love, sadness, for being moved? We can probably say so. People often talk about brutality in video games, about the fact that they make it possible for gamers to play aggressively. This takes into account the need for taking it out, experiencing a "brutal catharsis" – for releasing one's frustrations, anger, or unhappiness. Without the need, no such opportunity would be created. However, as a balance, many games – especially cRPG ones – include romantic plots. In the *Baldur's Gate*, *Mass Effect*, *Dragon Age*, or *Never-winter Nights* series we can find romance (mainly heterosexual in the past, now also homosexual and bisexual) – some special romantic dialogue paths available to the gamer and the possibility to develop a love relationship with one of the characters developed by the authors. My study shows that romance has also become an important element of this genre of games and that it also has the potential of causing pricks of conscience. When asked about the most frequent reasons behind the decision to load a save file, one of the respondents recollected:

> I was not happy about the effect the decision had (e.g. DA – selecting Alistair to become king, and he then breaks with my character ;D).

Naturally, this statement is humorous, but it still stresses that romances are taken into account and that gamers remember them. They are also considered important by the very creators. During a teaser advertising campaign of the *Dragon Age: Inquisition* the topic of romances in the new part of the popular series was very often undertaken. An attempt at the building of a virtual relationship is also a certain choice – dialogues are a series of text lines and the gamer chooses what he/she wants to tell the character he/she has a romance with. And it is not only about this, since the characters have their own specific personalities and sketched past, so during the game they react to the players' decisions with approval or disapproval, and the players must either be ready to face the consequences of a decision or remember who they travel with (with which characters they perform their tasks) and choose answers consistent with the players' beliefs – which, by the way, is an interesting simulator of empathy, as the player must remember who a given character is and what their past is and owing to it anticipate his/her reactions to decisions.

Apart from romances, games also include romantic relationships sketched entirely by their creators: Corvo and Empress (*Dishonored*), Alan and Alice (*Alan Wake*) or Sarah and Kaim (*Lost Odyssey*). Characters whose emotions, experience and understanding are of key importance are yet another type. Fall-from-Grace from the popular game *Planescape: Torment* can be one example. Psychological development, and emotional intelligence, are related to social competences and functioning. In the introduction to another of his books, Goleman pointed out:

> Our social interactions operate as modulators, something like interpersonal thermostats that continually reset key aspects of our brain function as they orchestrate our emotions. The resulting feelings have far-reaching consequences, in turn rippling throughout our body, sending out cascades of hormones that regulate biological systems from our heart to immune cells. […] To a surprising extent, then, our relationships mould not just our experience, but our biology. (Goleman 2011).

Further on, the author mentions that relationships with other people may have both a good and a bad influence. Of course, games cannot replace relationships in real life, but by showing us virtual constructs, they give us an opportunity to analyse, play roles, and become familiar with different points of view – what the gamer obtains is a real simulator, which can also interest one and force one to reflect, feel joy, anger, wrath, or think.

In this way the entire potential discloses itself – the potential of making decisions, their relationship with conscience, and the need for emotionality, which at the same time mingles with social intelligence. Gamers are not indifferent to what games offer. They want to hear stories, to simulate life. Many people will certainly say that this is not real life, and that therefore it is not valuable, but I have tried to show that what games evoke is transferred to the real world. Do not books offer a similar potential for human development, with their immersiveness, storytelling, references to reality, their ability to teach, relax, interest and develop the readers? As one of the respondents recalled:

> Games are probably the only medium, which makes it possible for us to acquire life experience without bearing negative consequences in real life. They have the potential, which is rarely used, of being like sensoria from *Planescape*.

A brief explanation of what a sensorium is in the above-mentioned game:

> Guide to sensations: The man nods. "This is the public sensorium, whose chambers hold (…) sensory stones. Each of the stones contains a particular sensation - or set of sensations - which a user can experience for himself or herself. A Sensate is free to use them at their leisure, while visitors must pay a small fee. Does this answer your questions?"
>
> Lady Thorncombe: "The sensory stones provide me with all things that my considerable wealth cannot buy. (…) each stone has recorded within it one experience or another. When I first came to these halls, I spent little time with them. Only now do I realize what I had been missing… (…) Why waste time (…) when I could remain here among these precious stones, living one hundred new lives each day?" (*Planescape: Torment* 1999)

The fragments quoted above are dialogue lines from *Planescape: Torment*, and I decided to treat the game as a book, because games are also a text.

Sensoria, just like games, offer experiences, make it possible to provide sensations. They can be addictive just like literature, but when used in an appropriate way, they will tell a story and offer a gift of experiences, they will grasp the plot using the method of virtual impressions, they will make it possible to return to that plot and read dialogues again. They make it possible to "relive a hundred new lives", and, after all, human existence is based on experiencing something more than just the real world. Since primeval times, people have listened to stories – they presented them in the Lascaux caves, they then read, started to watch stories and tales on the screen, to finally experience them also virtually. Of course, these are by no means the only ways of reading meanings – since this is what fiction really is – the reading of meanings: we may refer to stories hidden in photographs, paintings or even music. The quoted statement shows that gamers sometimes notice that games tell stories, that they provide experiences. Actually, it is best to ask the gamers themselves what they think of games, why decisions in games are important for them and what their guesses concerning games are:

> Games forcing us to take difficult decisions are more mature, they may be food for thought, and they are an argument against the belief that games are a primitive and thoughtless entertainment.
>
> Games not only provide entertainment, but also teach; if inexperienced gamers start taking important decisions early (obviously in games), this may have an impact on their life, perhaps it will be easier for them to take more logical and better decisions. […] that is why we develop as persons and test our morality in safe conditions. We can learn more about ourselves and put our moral code to the test.
>
> By being able to load the save file, you can always check "what would happen if…"; you just have to remember that such a possibility exists only in games and that it is rarely possible to start everything anew in life.

I decided to quote these different statements in order to give the gamers an opportunity to talk about themselves and their feelings. Be it even only because of the significance that people – from various backgrounds, of different ages, with

different beliefs – attach to games, it is worth analysing them from the pedagogical point of view, especially in the context of criticism against video games, because critical remarks, like the one below, were also uttered:

> Decisions in games are an illusion of a choice trying to mask the immaturity of the medium.

I have not written this text to sacralise video games, and that is why critical views should be considered particularly important: they can raise doubts which may become an impulse for further action. This can be considered a specific attempt at falsification, doubt in the question concerning the potential of story-oriented video games.

In the social sciences, it is desirable to doubt theory, the formulated hypotheses – doubts enforce further research, which is indispensable in particular in the case of video games in the pedagogical context. Although they are sometimes the subject of research as a part of other branches of the social sciences, they are still scarcely represented at the level of education, socialisation, interaction with children, youths or adults.

Educational use of story-oriented video games – in search of further potentials

While looking for the possible applications of story-oriented video games, I decided to ask the gamers about their educational potential, since it is impossible not to learn something new when one plays games many hours a week. This could be compared to taking additional virtual classes in something – the question is: in what?

The answers disclosed the gamers' opinions in this matter and I shall review and analyse gamers' selected observations and theses in this last but one part of the text. I shall try to reflect on some of them in the pedagogical context. I wish to start with the following statement:

> The necessity to bear the consequences of one's decisions taken in the virtual world can teach responsibility and discourage hastiness in making choices in real life. It can also make one aware that it is not always possible to make the right decision and thus help tackle the sense of guilt and disappointment when we failed to anticipate some consequences of a decision and we made a wrong choice. It would be good if parents remembered to make children conscious of the fact that there are no save files or respawns in real life…

As I have already pointed out, every game has a different potential to show the importance of decisions – just like in the domino effect, they lead to subsequent events and incidents. This potential is considerably lessened by the possibility of returning to an earlier moment of the game, but this is not so for each game. This is the question of the coding of the game, as there are already games in which the consequences of decisions do not show up immediately after the choice is made, but much later, which discourages gamers from replaying a sequence and en-

courages one to accept their choice and to play the game again and to familiarize themselves with the plot "from the other side".

There is also the important issue of the difference between the real and the virtual life – should people, in particular children, be made aware that there is and will be no possibility of "loading the save file" and making the decisions once more in real life? People always want to strive to realise their ideal self. People copy each other, just like films, books, and other inspiring texts. However, the procedure of behaviour should remain the same, focus on self-awareness. I do not think that games should be considered media which particularly encourage dangerous behaviour. The same can be said about the daredevils from other media creations, while it would be difficult to say that television is bad in itself only because some people could go as far as to copy dangerous behaviours and effects as a result of overestimating their abilities. However, can we entirely forget about the very possibility of such behaviour? No – just like in the case of books, films, comic books, tales, etc..

I mentioned that video games have the same inspirational potential as other products of culture. One of my respondents said:

> A game which is simple and lacks the necessity to make decisions, one which leads us straight as the crow flies, will not give us an opportunity to reflect on other options of plot development. The "what if…" aspect stirs the imagination and makes one think.

Firstly, the very inspiration to speculate develops imagination, the ability to create an alternative path of events, anticipate and combine the particular events into cause-and-effect chains. It is an extremely useful ability improving the perception of relationships between actions, behaviours, questions and answers. However, I would go further in my analysis of the potential – towards literary development. The question "what if" is the basis for the creation of stories representing the fanfic genre – texts discussing adventures of characters (also those from games)[2]. Fanfic authors place their favourite characters in new roles, new adventures, new places or situations. Owing to the inspiration they feel, the young amateurs create texts for themselves and for others, which leads to the development of their literary and linguistic abilities. FanFiction (www.fanfiction.net/game), featuring more than several dozen thousands of stories, is an example of a portal with fanfic stories based on motifs and characters from games.

Referring to further statements, it is possible to find the possibility of picturing the real in games:

> Above all, video games are greatly useful for the picturing of different non-banal conflicts (e.g. political or social ones) and offer the possibility of making an in-depth insight into them by decision-making. I think that this allows a better understanding than just the reading/listening to the parties' testimonies.

Story-oriented games can inspire people not only to create new fiction, but they also encourage players to understand the reality. Games are fiction pretend-

[2] More broadly understood, these are stories created by fans, focusing on places, stories and events from their favourite games, films, serials, books, etc..

ing to be reality. In disguise of what seems non-real, one can show real conflicts. Some names, and also the actors of events, will change, but the ideas often remain the same. Games show the ideas of war, love, treason, secrets, adventure and many other things. Obviously, the extent to which they do this depends on the game creators, so once again I wish to highlight the significance of writers and developers facing the difficult task – both from the artistic, and the moral and marketing points of view.

Interestingly, many gamers point out that games raise their awareness and that they help them understand themselves:

> […] People who are more sensitive will have a chance to reflect on their own reactions and motivations.

Putting themselves in fictitious situations, the gamers may simulate themselves in the circumstances which did not take place in their life. The players must ask themselves how they would behave in reality. This question leads to an increase in one's awareness, but such challenges also facilitate the development of concrete principles in people – as much as they are able to find an answer to the question why they behaved in the particular way they did.

Of course, the above quotations and inspirations are only single voices, but they are the voices of gamers – persons experienced in playing games. Their statements on games are based on their own experience or their desire showing what games should be like, what traits they should have. There were also many answers negating any educational values in games, and this should also be said.

Conclusion

This article has a rather non-typical task – it is not to explain or determine what video games are like, what their potential is, what gamers are like or what their expectations of games are. Games exist and there is an increasing number of new players; games tell stories – sometimes new, and sometimes old ones, but always in a new form. All of these stories are told by game creators, who enforce – totally or partially – certain interpretations, behaviours, and ideas on the recipients. Many story-oriented games offer a possibility to make decisions. This all adds up to socialisation processes – cultural content is transmitted, pictured; decisions are made, and reception competence is shaped along with the ability to deal with virtual reality, etc..

Is there a place for sensitization in all this? For touching universal topics? Yes, indeed, because games – just like books, films, and stories in other forms – are mostly based on archetypes and on playing them.

This article has one more, extremely important task to fulfil: it is to assist in the formulation of new questions concerning the potential of games, their functions and future in informal education. Video games are still a hardly explored ground in the context of pedagogy due to pedagogues' minor interest in the field despite the unquestionably high amount of time children, youths and (not only young) adults spend interacting with the medium. Games are a cultural text, they carry

content, signs, symbols – everything which is drawn from culture. Games are a world of fiction becoming reality through cooperation with the player, through the raising of emotions or even the titular remorse. Can we therefore deny the significance of a medium, which, through imagined worlds, affects the daily and the real life?

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Summary

Gamers' Remorse: Decision Making in Story-oriented Video Games in the Context of Socialization and Social Awareness

The aim of this article is to analyse the potential of video games in the context of socialization and social sensitivity and awareness towards marginalized topics or those considered a taboo. My analysis and conclusions are based on a research of video-games players, and their opinions and thoughts about this unique medium. I am mostly interested in the effect of remorse caused by some decisions in video games and the effect of immersion that allows players to gain real experience through fiction. This text is also to show video games in a "non-alarmist light" and to describe (often omitted in pedagogy) the different interactions between gamers (children/teenagers/adults) and video games.

Keywords

video games, games studies, pedagogy, socialization, new media

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A study towards change (with mobile technologies in the background). Integration and resistance of Roma families against displacement and expulsion

I did not come to ask for food.
I come for you to believe in me.
I did not come to ask for wealth.
I come so you can give it all away.
I come to you from ragged tents
which the wind has torn and taken our water.
I ask you all, the old people too,
the smallest children and beautiful girls,
please build houses as silver as tents
that glisten in the woods, cold-white with rime.
I did not come to ask for wealth.
I come for you to take me in,
and not let the black night
take our broad daylight.

Papusza, *I come to you* (1953)[1]

Introduction: methodology, data analysis and practical ethics

The events that inspired this text unfolded between August 4 and August 26, 2014, when the authorities of the city of Gdańsk illegally dismantled a Romanian Roma[2] family's encampment and displaced them from the plot of land they oc-

1 Translation Raf Uzar, English translation retrieved from http://en.picture-doc.org/wp-content/uploads/sites/5/2014/12/11_DIALOG_01_72_EN.pdf

2 This publication will use two terms referring to the ethnic group in question interchangeably: Gypsies and Roma. The word *Gypsy* is an exonym, i.e. the name of an ethnic group used by others. Nonetheless, the word is used and practiced in communication by the representatives of this group as their name. The term *Roma*, on the other hand (i.e. *man* in the Romani language) is an endonym, i.e. a name invented by members of this group. Although political correctness would today

cupied. During these events I played the role of a researcher involved in social change, an educator, a facilitator and an activist. The nature and form of the narrative that I will adopt later in the text on the course of the events and observations is firmly rooted in action research and situated knowledge. The programme formulated in such a way will not adopt strategies that could objectively distort my axiological and ethical assumptions – strategies consisting in masking the presence of an observer or a participant, removing their presence and influence on the observation of the analysed phenomena, and ascending to the position of an all-encompassing gaze.

The rationale behind such a starting point to the study is the identification of the research problem, which lies in the social conflict between the majority, represented by the Gdańsk authorities, coupled with the public support for their activities, and the minority of the Romanian Roma. Nevertheless, I will strive not to discuss the exclusion of the Roma by the city authorities in a polarising way along the majority-minority opposition axis, realising that the choice of such terms fits seamlessly into the logic of a discursive construction of victims. The informal Romanian Roma Support Group, of which I was a member, was working to emancipate, enfranchise and empower the Roma by involving them in jointly developed strategies to resist and put pressure on the Gdańsk authorities. While conducting my action research in this context, any attempt to take an objective view would be skewed ethically and methodologically by confirmation bias, i.e. constructing the truth using a language that makes the Roma problem transparent, without having the concepts and categories to describe this group. Moreover, as became apparent in the course of the study, the adoption of objective concepts of the "truth", which is the language of the dominant group, inscribed the Roma in the normative concepts of the "equality" of rights, and identified the issue of their citizenship as a human rights problem. Starting with the dominant discourse would legitimise the violence exercised by the authorities as objective (normative) and transparent. This is why I started from the conviction that it was not possible to assume the position of an impartial researcher in a situation where there was no will or tool to work towards intersubjectivity within the realm of this social conflict. In a process in which the normative categories of the majority group did not pass the dialogue test and were not subject to epistemic curiosity aimed at finding a common language to frame the "Gdańsk problem with the Roma", it meant taking a position of commitment over knowledge of the privileged dominant group.

The adopted methods of data collection have undergone critical discourse analysis (CDA). The need to extract hidden meanings and demonstrate or make perceivable what is entangled in the structure of invisible "plain truths" speaks in favour of this method as a way of reading empirical data. Disaggregating the discourses allows us to examine old positions from new viewpoints and, consequently, modify them. Thus, as a tool of analysis and criticism, it can lead to a change in language and social practice. The change and criticism of the discourse, under-

require the use of the word *Roma*, because of the negative connotations of the term *Gypsy*, I have decided to use both names. In my opinion, the contemporary use of the word *Gypsy* is part of a subversive strategy of using language by quoting it, contrary to its original version, both by the Gypsies themselves and by artists and culture makers.

stood as a communication and performative act, in this case concerns the perlocutionary nature of the statements made by the representatives of the authorities of the city of Gdańsk. In this context, the language of the statements concerning the Roma has been analysed. It was particularly important to see how acts of speech produced social facts and how, as a result of the action research, these facts were subject to syntactic and semantic displacements.

It should also be noted that dispensing with objectivity (normativity) was an implication of the action research, which forced us to give priority to accuracy in following/keeping up with the discourse and ongoing events. The unique nature of such studies forced the participants to adopt the 3-step method of evaluation and production of empirical data in the research practice: 1) planning of the activities, the overall idea and objectives; 2) implementation of the planned activities; 3) establishing the facts, assessing the state of play in the implementation of the general plan and modifying future plans to incorporate new facts. The stages of individual segments of activity frequently intertwined and formed a spiral, until the working group considered the study to be saturated or implemented in relation to the planned objective of the intervention (Lewin 2010: 9).

However, the reader deserves additional clarification regarding the ethical challenges posed by action research, often accused of interfering with the study subjects and, consequently, changing them. Therefore, we are dealing with research which, in the course of its analysis, uncovers new meanings in order to show their hegemonic bonds and to bring out new discursive spaces. Objectivity of research is usually understood as a non-invasive, non-evaluating approach to the subject being investigated. From a critical standpoint, we could dispense with this approach, as it would force us to adopt the ideological positions of an impartial researcher, i.e. the perspective of a third party.

The extensive literature on studies of science has demonstrated repeatedly that such objective approaches stem from the Enlightenment concept of instrumental reasoning (Horkheimer 2007; Horkheimer, Adorno 2010; Haraway 1988). This method assumed that objective regimes of truth must yield conclusions allowing for the technological application of knowledge and analysis of the world as if in a laboratory setting, stripping phenomena of their variables and, in the case of the social sciences, of the background to the phenomena under investigation and the reapplication of such facts under the conditions of the dominant "truth" of the laboratory (Latour 2013; Afeltowicz, Pietrowicz 2009).

In the case in question, such an approach would entail complete assimilation of the Roma into the Polish reality. At first, our understanding of empowerment did not assume exclusion as a condition for multiculturalism. This is why we tried not to make inequality a starting point for inclusion measures. Nevertheless, this approach changed during the planning of the activities and, in the further part of the research, emphasising cultural differences became a crucial part of the strategy. Although "difference" is a threat to the equality policy, in our project it turned out to be of strategic importance for mediation and for exerting pressure on the Gdańsk municipal authorities. Being actively involved offered the advantage of enabling a change of perspective, experimenting with adopting the point of view of the excluded group's particular interests (listening to their voice) and using this position to observe and plan activities. This allowed us to gain new perspectives

on the issue in question as well as to witness the varied discourse around it, which we otherwise would have missed, blinded by the objectifying (normative) power of the machine of methodological accuracy.

Criticism of "objective" approaches has shown that science most often constitutes a reflection of certain particular interests and ideologies (Haraway 1988). Our approach was not devoid of such sins, since it assumed communication with the Romanian Roma. This meant that the planned measures involving Roma participation were discussed in terms of the anticipated benefits and risks. This process needed to be repeated several times before any activities could be implemented. The need to repeat communication activities resulted both from cultural differences and the language barrier. Moreover, in the Roma community all decisions concerning external activities are made by the men and in order to make sure of their explicit consent to specific actions, it was necessary to clearly convey the ideas behind the actions to the whole group and obtain their express agreement. Respect for the family hierarchy and ensuring that the proposed measures were accepted by the father, i.e. the head of the family, also played an important role. Developing the conditions of intersubjectivity within the group was one of the methods aimed at minimizing the influence and authoritarianism of our intrusion into their community. The creation of these conditions was based on fine-tuning our mutual language skills to the range of vocabulary and concepts that both we and the Roma know, understand and are able to communicate. For us, these activities also meant overcoming barriers and prejudices between our worlds and building mutual respect, trust and emotional bonds. Still, it was up to us to comprehensibly convey the meaning and significance of the proposals. This meant adopting the position of a "knowledgeable" subject, assuming familiarity with the empirical data to be transmitted to and mediated with the group. This is why it was so important to create the appropriate conditions for intersubjective reality within the group. It was important for our research approach to distinguish authority from authoritarianism, which is why I have tried to emphasize our position in the dynamics of the research processes, where we played an active and participative role. Our involvement was based on targeted measures for social change, and our position was external to that of the Romanian Roma group. Any attempt to hide and erase our intervention would be a distortion of reality. Indeed, our method assumed dialogue; however, it was founded on the asymmetry of relations, in which communication assumed the transmission of knowledge and experience concerning the awakening of critical consciousness and the possibility of resistance against systemic exclusion. The partnership in emancipation activities meant, first and foremost, the transfer of instrumental knowledge about the formal and legal reality and the ability to "read" the mechanisms of public opinion and the role of the media (the so-called fourth power) in the democracy of the distribution of the sensible, in order to make visible the exclusion and discrimination faced by the Roma (Rancière 2007). Until these conditions had been fulfilled, our actions moved between the roles of educator and facilitator.

This being said, the stage on which we operated reflected the tensions between the universality of the concept of human and civil rights and ethnic and cultural differences, generating further ethical tensions. This meant that where the circumstances brought civilizational universalism to the forefront, priority was

given to the totalitarian breakdown in the equality categories of humans and citizens, transforming our position of intervention from outside into a fully participatory one on the inside; it became "our common cause". In these fragments of the research our activity was dominant and it placed us, as "additional" actors, in the foreground. Such polarization along the human-citizen, Roma-Polish lines, caused epistemic difficulties in distinguishing the flickering of meanings between the position of an actor of events and the representation of events. In practice, however, this meant that our roles and the trajectories of assigning meanings were reversed, but the dialogue within the group remained preserved. In turn, as the categories of "difference" were gaining importance, the Romanian Roma became the actors of the events.

On the sidelines of this introduction, it should be noted that discussing the positioning of the meanings of man (citizen) versus the Roma as an ethnic group, requires reference to the debate on the identity of the subject and the criticism of normativising essentialism therein, which I believe, in the case of the category of the *Roma*, requires a clarification of any potential misinterpretations.

Research on the Roma community clearly demonstrates the constructivist dimension of the Roma cultural identity (Jakoubek 2010: 164). Therefore, the Roma should be understood as carriers of specific cultural patterns. In turn, their unique customs and cultural distinctiveness should be described as the "Roma tradition". Such a definition of differences and distinctive conditions leads us to reject any essentialist and biological stereotypes about Gypsies. This problem has a long tradition dating back to ancient times, which through the Middle Ages until now has been called the dispute between the status of universals and particulars. This problem points to the connotations between the conceptualisation of the category "Roma" with its ontological and cultural status. In other words, I would like to say that any form of exclusion arises as a tension between acknowledging the primacy of the existence of a social group, as a closed system, and treating the manifestations of their individual existence as a mere display of a set of characteristics of a general concept. Another major aspect of starting from the tension in the relationship between man (citizen) and the Roma, i.e. the universals and particulars, is recognizing the mutual relationship between these categories, as they impersonally describe certain entities established this way. Such an approach still reveals a dream of objectivising research and analysis; it also reminds us that our model of knowledge, by reducing the truth to universality, has thus deprived it of subjectivity and divided it into science and literature. Therefore, action research would constitute an attempt at reconciling literature with science, i.e. a continuous switching from universality into the particularity of life. In other words, the categories of man (citizen) versus the Roma impose the treatment of individuals as a group, members of which are not perceived as actors (I), i.e. in the first person singular, or as partners in a dialogue (you), in the second person singular, but in the third person plural (they). If it is the ethnicity alone that defines the Roma in Polish society, they are perceived in that society through the lens of being Roma. Their activity and presence is explained as a consequence of their Romani heritage, i.e. the manifestation of their cultural tradition, especially the stereotypes that have arisen around this difference. In this sense, our involvement rejected such models of research, maintaining the perspective of the second person singular. Knowledge

would thus become an activity aimed at creating intersubjectivity within the space of mutual care and respect for others. Our approach to this group would therefore be a compromise between our understanding of who the people displaced by the Gdańsk authorities are and their cultural habitat. In the realm of political action, this would mean recognising their rights, which are built upon European humanism, and respecting their cultural separateness. Such an approach to Roma subjectivity did not reject the biological body, nor did it reduce it to a blank slate, but rather sought to combine it into a coherent whole with a cultural superstructure.

This problem was highlighted in Donna Haraway's early texts on feminism and the radical reduction of the problem of difference to the performative space of discourses and constructivism. Neither constructivist nor essentialist explanations boil down to reductionist approaches to choice and determination.

> No, we behave the way we do primarily because 1) we have been brought up that way (determination of tradition); 2) it is rather convenient (determination to adapt), while at the same time it is obvious that if we had been brought up in a different tradition (for instance "traditionally Roma"), or if we grew up or lived in a different environment (in a socially excluded place), our behaviour or its models, as well as its values and norms (whose observance would be forced by social control), would be different (probably very similar to the ones we described above as typical for the traditional Roma culture or culture of poverty). In other words, it should be remembered that the choice of the value system from which the norms of one's own behaviour are derived is hardly dependent on the free will of the individual (Jakoubek 2010: 178).

The social setting we live in is not given to us but, rather, it is entrusted to us. Our approach and ethics of action sought to preserve the spirit of Freire's philosophy of emancipation understood as a conscious liberation from experienced and recognised oppression. Another important paradigm of the chosen strategy was Jacques Rancière's idea of the distribution of the sensible and making the voice of the oppressed heard (Rancière 2007). This entailed a dual strategy of legalising the presence and visibility of the Roma in Gdańsk and empowering them to be present in the social fabric of the city by enabling them to take a vocal stance during the events. Exposure and publicity was an emancipatory process that allowed the Roma to speak in their own name and independently assess their own situation, as well as to articulate their needs and decisions on how to change it. However, it was not the work itself, which was focused on caring for oneself, that was at stake in this process, but the creation of such conditions for understanding the relationship between the self and the world, which would allow for the transformation of a selected fragment of reality. Paulo Freire defined liberation as the regaining of one's voice and the breaking of the silence that would, consequently, spur the rise of critical consciousness. However, in the case of cultural and linguistic differences, this process was complex when working with the Roma due to their differing communication competences. This is because in order to reinstate justice, we would have to overcome the fear of a discursive distortion of reality, which would have been impossible without the involvement of modern media technologies and the activation of mechanisms for translating the voice of the oppressed provided by the media culture. However, this hardly implied the need to develop the Roma's communication skills, but rather the need to persuade the authorities to enter into

dialogue and to draw media attention. Freire's pedagogy of the oppressed means working with socially excluded groups. It means arousing consciousness and not forcing a person to adopt the views and knowledge of the depositor of "consciousness". This requires a commitment from an educator who finds themselves in a precarious and unstable position between the ideology of the dominant group and the understanding and listening to the voice of the oppressed. This task makes it possible to fight to reclaim the freedom and humanity of the oppressed. Such an educational project makes economic and symbolic exclusion, with its consequences, a subject of critical reflection by the oppressed. It assumes that only this process makes it possible to engage in resistance and fight for liberation (Śliwerski 2010: 267). Our role, therefore, was in line with the approach taken by Bogusław Śliwerski, who understands involvement as taking the side of the enslaved, poor and oppressed in order to help them regain the power to speak for themselves, and regain a sense of security and trust.

However, and this should be stressed, from our perspective it was too premature to use literacy, of such importance to Freire, as a way of liberating the Roma from the "culture of silence". Our approach and objectives did not assume spreading literacy, nor did they determine on which side of the exclusion or resistance the Roma tradition of oral cultural transmission lies. The lion's share of our work consisted in the ethical adoption of the "veil of ignorance" until we gained a better understanding of specific behaviours and strategies of the Roma life and were able to determine which of these result from cultural separateness, and which are the consequence of adaptation to the culture of poverty imposed by social control and oppression. According to anthropologist Judith Okely, the belief in the need for Roma literacy stems from many misunderstandings about their culture and the nature of Roma education, which is aimed at learning the practice of everyday non-territorial life. As Okely points out:

> A major corollary of their resistance to legal rational gorgio authority is the Gypsies' cultural tradition of non-literacy. This is partly explained by their semi-nomadism given that they were not fixed and settled in one place to attend non Gypsy schools. However, this is not a sufficient explanation. Other nomadic groups in the world such as those in the Middle East have inculcated literacy in their young, through the reading of the Koran. For Gypsies, literacy has not been a priority, nor has it been an economic necessity in their choice of occupations. It is more important for children to accompany their parents at work and learn how to make their future living that way. Besides, they can always make use of the friendly Gorgio or spouse for the occasional document. Well-wishers who favour a literacy programme and formal schooling often naively cite the need for Gypsies to read road signs. This presumes that the travelling Gypsies haven't made it their business to know routes. (…) The Gypsies' non literacy, far from being an inevitable cultural handicap, is in many key areas a force for freedom. They are free from the education system, and what Althusser [1971] has described the state apparatus. By avoiding this intensive training and cultural indoctrination, their consent, if we are to heed Gramsci's theory seriously, is not won over within the dominant hegemony. (Okely 1995).

The understanding of the Roma culture and the needs of the family displaced by the Gdańsk authorities could not, therefore, adopt a rigid framework of "certainty" as to what the oppressed should want. This led us to establish "ignorance"

in many aspects of what it would mean to regain rights and freedoms for this group. The awareness of "ignorance" and uncertainty meant consenting to potential refusal. It was a kind of bottom-up pedagogy, allowing for the polyphony of intertwining insights and theories. It would not be possible to carry out this action research were we to adopt the ideology of the state education apparatus. The fact that the Roma allowed us into their community meant, among other things, that we had to gain their trust by demonstrating our anti-systemic attitude and our opposition to the violence of the city authorities.

The media in the communication project with the Romanian Roma community have made it possible to establish a narrative network translating the voice of the oppressed. The Internet and social networking sites such as Facebook and Twitter proved important in the analysis of events and in building resistance. The mobile technologies directly used by the Roma have opened the path to research and broadened the horizon to include the construction of nomadic subjectivity. The inclusion of such devices in the action study allowed for the analysis of this group in the context of intercepting the use of communication tools and building tactics of resistance to the all-embracing view.

Situation of the Romanian Roma in Poland

The Romanian Roma arrived in Poland at the beginning of the 1990s. Back then, overstaying their visas was illegal and meant that they were forced to constantly hide and avoid the authorities, frequently changing their place of residence. Deportations at that time were widespread. Since Romania became a European Union Member State (as of 1 January 2007), the Roma have gained the right to move freely within the EU (Article 45 of the EU Charter of Fundamental Rights and Directive 2004/38/EC). Since then, the Roma have been legally resident in Poland and, as EU citizens, have been able to take up legal work, and their children have had the right to education. However, the scale of migration escapes government statistics, due to the abolition of border controls. Since its accession to the EU, the Polish government has not taken any action to introduce a migration policy on a national scale. The number of immigrants is constantly increasing and is no longer a marginal phenomenon. This group of people outside the system who are invisible to the authorities includes Gypsies from Romania. According to the regulations governing the registration of residence in the territory of another Member State, this formality must be completed after three months in order to become visible to the Polish system. Despite this, there are no mechanisms facilitating the fulfilment of this obligation by economic migrants, and, furthermore, Poland is not able to determine the period of residence of this group on its territory. Failure to register residence prevents the Roma from receiving support from social assistance and from using the services of a job centre. In order to register a stay in Poland, it is necessary to demonstrate an income sufficient to support the family independently and to have a contract of employment and health insurance. A large group of Gypsies do not meet any of these requirements and have no chance of doing so. For the majority, the possibility of finding a job is unattainable due to low qualifications, but most of all due to social prejudices. For example, the Municipal Family Assis-

tance Centre (MOPR) in Gdańsk, although it has a list of labour market partners employing the homeless, admits that employers refuse to accept foreigners as part of this cooperation (although allowing such restrictions is tantamount to blatant discrimination). Hypothetically, health insurance may be taken out on one's own – but how can this be done without having the possibility to take up a job, which in itself does not always guarantee that the employee will be covered by a healthcare plan, and that they will be able to afford it? Polish law segregates the Romanian Roma, marginalising them and pushing them into extreme poverty. The current legislation favours economically desirable migrants and throws the undesirables out of the system. Such policies lead to poverty, pathologies and exclusion. The Roma are forced to develop their own adaptive mechanisms of survival and life overnight, culminating in begging. It is mainly women and children who leave to earn money on the streets. Men are involved in scrap collection and housework during this time. When asked about their profession, they mention metalworking and the construction of metal furnaces (occupations now disappearing as a result of extreme poverty, lack of access to materials and tools, and lack of marketability). If someone from the Roma community manages to get a job, it is usually illegal, without any agreement. These are mainly casual activities for a few hours, for example clean-up works in the gardens of the local residents or on construction sites.

The effect of these conditions and the lack of awareness of one's rights is that the community focuses on securing basic means of survival. Their everyday life is about finding food, shelter and closing themselves off in family groups and relationships that give them a sense of security. Lack of access to housing means that they take matters into their own hands by finding abandoned plots of land, where they put up makeshift houses, made of what they find in the street, or they squat in vacant buildings. Only some manage to rent flats, of a very low standard.

It is the "Gypsies' fault" that they live in extreme poverty. The rules are designed to confine this community to a vicious circle. This is why Polish officials in their contacts with the Romanian Roma most often suggest that the best solution for them is to leave the country. Their situation makes them particularly vulnerable to discrimination and exclusion. The lack of real anti-discriminatory measures only exacerbates the stereotypes that have accumulated around the Roma. City authorities, representatives of public institutions, the police and border guards, either do not have the tools and the means to address the problems of migrants or (most often) violate the rights of the Roma by exploiting the language divide and their lack of knowledge of the law.

According to an Amnesty International report, the economic migration of the Romanian Roma is caused not only by extreme poverty, but also by discriminatory policies in their country of origin:

> On 17 December 2010, 76 Romani families were forcibly evicted by the Cluj-Napoca authorities from their city centre homes in Coastei Street. The only official warning they got was a written notice delivered two days before. The families were not consulted and/or given access to legal remedies or adequate alternative housing. The families were relocated to the city's outskirts, close to a landfill site and chemical waste dump, in an area already predominantly inhabited by the Roma. Only 40 families received housing. Even this meant only one room of up to 18m² per family. Four rooms share a bathroom with only cold water. The housing units were built with public money;

> they are thus part of a municipal policy that actively fostered residential segregation, a form of discrimination. For 36 of the 76 evicted families no alternative accommodation was offered and they were left homeless. Some moved in with relatives, which resulted in severe overcrowding, others built houses next to the existing units. With only verbal permission from the municipality to build on that land, families live in inadequate housing and fear further forcible eviction and losing their homes (*Human Rights HERE! Roma Rights NOW! A Wake-up Call to the European Union* 2013).

Intimidation, being chased away, humiliation or, in extreme cases, battery and abuse of the law by the authorities, as reported by AI, are the day-to-day reality of Roma life. Economic migrants are also targets of ethnic attacks. One of the main reasons for the Roma community's aversion to local authorities is the constant threat of deportation, removal of children and, above all, evictions from the vacant buildings or makeshift homes occupied by them. The tragedy of these people is not only the loss of their home, but also the systemic inability to obtain the rights or the means to find a new one. Very often, in such cases, the authorities abuse the Roma's lack of knowledge of the applicable legislation by exploiting the language barrier and their systemic illiteracy to intimidate them. It was only in Wrocław that the city's eviction plans were halted, and the case of Roma expulsion was referred to the court. When it comes to court proceedings, the Roma are not entitled to an interpreter for the Romani language (most Roma do not know Romanian, as they were born in Poland and their parents pass on the tradition to their children in the Romani language). The hearings, in turn, are conducted in Romanian. Legal interventions in most cases concern parental rights. In some cases, Romani children were taken away from their mothers in hospitals. Most often because of poverty, which is diagnosed on the basis of a shortage of means to cover the costs of childbirth and hospitalisation resulting from the lack of health insurance. The second most frequent form of legal intervention concerns the detention of persons who are begging.

The expulsions of the Roma are particularly harsh on Roma children, who, from a very young age, are already discouraged from coming into contact with the outside world.

> Roma children are often eyewitnesses to the brutality and cruelty inflicted upon them by outsiders. Usually they are the first to meet the representatives of the authorities during police raids on the camps. They are not 'innocent', but politically entangled. They assume the role of witnesses and messengers between the two worlds. Therefore, educators have to ask themselves why those children would want to become part of a dominant community that has persecuted them for centuries, confiscated all their possessions and used violence against their parents? I remember a little Roma girl – while putting her younger sister to sleep, she assured her that no policeman, counsellor or teacher would come and do her any harm (Okely 1997).

Sadly, the Roma's experiences with Poland are also inscribed into the history of mass displacement, reinforcing their mistrust of the authorities:

> One of the most notorious initiatives undertaken by Polish local governments, which took place in 1996, was the police raid on the encampment of the Romanian Roma in Warsaw. At four o'clock in the morning, considerable forces of the capital's police, ac-

> companied by city officials, raided the settlement under the Grota-Roweckiego bridge. As a result, 129 migrants were deported from our country, of whom about a third were children (*Minorities without rights, Roma migrants in Poland* 2014).

A year later, a similar scenario unfolded in Wrocław:

> In 1997, the whole group of Roma migrants camping in Tarnogaj, one of the districts in Wrocław, boarded the buses provided by the authorities. They were told that they would receive aid and assistance. However, these were not the authorities' true intentions. The group was deported. Their property and their barracks were destroyed. The consequence of such behaviour is the reluctance of the Roma to cooperate with city officials and public service officers; the Roma community does not trust them (the Romanian Roma community in Wrocław 2013)[3].

The same applies to access to health care. Medical assistance is refused not only to adults, but also to children. Few from the Roma community have been granted access to health services. In such isolated cases, the Roma do not usually enter the system, but bypass it with the help of a third party. This access is mostly limited or unavailable.

On 29 September 2014, I assisted in receiving help for a 16-year-old Roma woman, who had been previously fitted with a urinary catheter as a result of postpartum complications. This was two months past the date the catheter was to be removed. However, the hospital where the girl had given birth refused to perform this procedure – although the doctors were aware of the health risks, possible complications and infections. The hospital administration resorted to economic blackmail, making the provision of aid conditional on the payment of a fee of 9,000 zloty for the delivery and the removal of the catheter. It was not until we found another facility that the girl received help after I had made it clear that the patient was a minor and that treatment could not be interrupted if it threatened her health. After these explanations, the hospital agreed to perform the procedure upon payment of 500 zloty.

Assistance was provided in this case because the Roma family had raised the necessary funds. However, such discriminatory practices in relation to the poor most often result in health complications and are the everyday reality of the excluded. The health problems of Roma families include not only the lack of access to health care, but also starvation and poor diet. As a result, members of this community rarely live to see old age, suffering most of their lives from chronic diseases. Children, in turn, suffer from developmental disorders, and undiagnosed diseases result in long-term complications.

However, the lack of an adequate local government policy does not dissuade the Roma from remaining in Poland. Although pushed to the margins, they do not disappear from the urban landscape, becoming an embarrassing "problem" and part of the Polish reality. Many of them were born in this country, but do not receive Polish citizenship, inheriting their status from their parents along with difficulties in obtaining registration of their stay. Although Roma children learn

[3] From the Roma group described below, who currently live in Gdańsk, Constanti and Ewa Stoica were also victims of deportations from Wrocław in 1997.

Polish on their own when watching television, they cannot read or write. Their legal status is suspended and they remain invisible to officials. It is hard to believe that Roma migrants, who have lived here for many years, remain unnoticed, and that the authorities and Polish society only remember them when there are media reports or when the Roma set up encampments in their neighbourhood. The current legal situation polarizes public sentiment, contributing to the creation of a culture of poverty, perpetuating the stereotype of the Gypsy. Exclusion is reinforced by the lack of willingness of public administrations and services to respect the rights of the Roma and to inform them about their rights and obligations as EU members and residents of Poland. Our experience of working with this group shows that often the depositaries themselves do not obey the law because they do not know it. This creates a culture of poverty whose mechanisms require a great deal of determination to survive. Poland is not prepared to receive migrants. Under the legislation in force, the Romanian Roma do not constitute a Polish ethnic minority, nor do they qualify for refugee status. Ironically, in order to circumvent the obligation to register a stay in Poland, it is sometimes easier for the Roma to obtain the status of victims of human trafficking (even if a member of this group did not fall prey to traffickers). This situation seems to be convenient for the Polish authorities, who claim that the problem of Roma migration does not concern them. The lack of any kind of friendly mechanism for integration into the system and economic exclusion antagonise public opinion, making intercultural dialogue very difficult.

The Romanian Roma in Gdańsk – discourse analysis

The first media mention of the presence of Gypsies in ul. Bursztynowa in Gdańsk-Jelitkowo dates back to 2012 (Kozłowska 2012a). The article by Aleksandra Kozłowska, a "Gazeta Wyborcza" journalist, entitled *Beautiful Ergo Arena surrounded by dirt and squalor*, contrasts the presence of poverty with the new urban investment of a sports facility to become a showcase of the Tri-City and an advertisement of its sponsor, STU Ergo Hestia. The article depicts poverty in a language appealing to aesthetics, and whatever is undesirable is described with the use of phrases like: "squalor", "seedy dens", "poverty", "despair", "various shady characters".

In January 2014 "Gazeta Wyborcza" returns to the subject of the Romanian Roma living on abandoned plots in Gdansk, describing their life, and problems connected with their stay in Poland. From these articles we can learn that the community occupying the area consists of 17 Gypsies from Romania. The reason for their arrival in Poland is economic migration. Before they came to Gdańsk, where it is stated they have been living for two years, the Roma stayed in a settlement in Wrocław. They had lived there for five years. The media reports also tell us that they were not entirely invisible to the representatives of the Gdańsk authorities:

> Monika Ostrowska, spokeswoman for the Municipal Family Assistance Centre: – The families discussed by "Gazeta Wyborcza" reside in the Republic of Poland of their own free will. They do not have a Residence Card – essential for receiving support in terms of vocational development, the education of minors, health insurance or social welfare benefits. Nonetheless, for several months now, a social worker has been in

> contact with these families, despite the limited possibilities of providing them with support, including monthly referrals to the Food Bank. They use and are satisfied with this form of nutrition (Kozłowska 2012b).

At the same time, the Gdańsk authorities boast about the success of sending three Roma children from another Gypsy group living in the city to school. Gdańsk is the first city which has managed to enrol the children of Romanian migrants at a Polish school (Kozłowska 2012c, 2012d). "Gazeta Wyborcza: Tri-City" returns to the subject of the Roma on several occasions, describing their everyday life and systemic problems related to their inability to meet the conditions set by Polish law for economic migrants to register their stay in Poland. These articles show that the Roma's presence does not disturb local residents and that they often meet with the support and understanding of their neighbours.

On 2 August 2014, municipal police officers arrived in the Roma settlement to inform them of the need to vacate the plot by 4 August. On the scheduled date, about 7-8 o'clock a.m., BOM (Residential Services Office) staff, accompanied by police and municipal police, arrived at ul. Bursztynowa together with workers who are tenants of municipal flats and who work to cover their unpaid rent. The Roma are given an hour to pack up and leave their homes; they can only take their belongings by hand. Any houses and left-over property are demolished and destroyed. The Gypsies are not made aware of their rights (no alternative premises for the group to go to have been designated) and are not presented with a final eviction court order. Without support, they leave their homes in an atmosphere of fear caused by the presence of uniformed services. In addition, no interpreter was provided to ensure that they understood the situation. Since then, the Roma have been sleeping in tents, hidden in nearby bushes in Sopot.

The eviction was publicized in the media on 7 August in "Dziennik Bałtycki", "Gazeta Wyborcza: Tri-City" and by Amnesty International. The city authorities explained the reasons for the eviction as follows:

> […] city officials repeatedly received "complaints from the inhabitants about the nuisance caused by their neighbours" (Wierciński 2014a).

> […] this site (located close to the beach, which is very popular during the summer season) needed to be cleaned up as a matter of urgency according to the city authorities. Homeless people are usually directed to a hostel, while tourists use the tourist accommodation base (Kozłowska 2014a).

Journalists establish that the Municipal Family Assistance Centre staff had not been alerted about the evictions and the decisions taken by the city authorities on the Roma. Aleksandra Kozłowska from "Gazeta Wyborcza" notifies Amnesty International about the eviction. She sends a letter to the President of Gdańsk, Paweł Adamowicz, expressing her concern about the situation and requesting an explanation. Moreover, the journalist reports that Agata Ferenc from the Wrocław-based Nomada Association for the Integration of a Multicultural Society intends to refer the case to the prosecutor's office. Adamowicz explains that: "on the one hand, the right of ownership must be respected and, on the other, my colleagues must abide by the rules, and that is what I am going to investigate" (Twitter: EU Citizens 2014).

The attitude of the media towards the case is unequivocally critical of the city's governing bodies. It is the first time that the city authorities have described the Roma as "tourists".

In the days that followed, the expulsion of the Roma was also discussed in the "Journal of Opinions" (Mandelt 2014), Radio Tok FM (Wieczorek 2014) and Wirtualna Polska. There were questions and statements in the media about the extent to which these events were connected with ethnic origin; however, the dominant theme in the statements was legalism, and it was stressed that the eviction took place without a court hearing and a binding court ruling.

On 12 August, the Prosecutor's Office received a notification of a suspected crime from Nomada. Paweł Adamowicz admitted in the press that certain mistakes had been made during the eviction process:

> We have been implementing a programme of cooperation with the Roma for years. We all know that it is not easy, especially to convince them of the need for childcare and compulsory schooling in line with our standards. The mistake of my co-workers was that they failed to invite the Municipal Family Assistance Centre (MOPR) to be present during the eviction, as they would have suggested alternative accommodation for the homeless, but as a rule I do not accept the idea of building a camp on someone else's land. Well, there are many aspects to working with the Roma. Apart from the fact that they do not respect the right to property, there are considerable problems in terms of childcare and compliance with compulsory schooling. For years, MOPR has been cooperating with Roma families in various ways, and it was a mistake that they had not been invited to cooperate in this particular instance. I am aware of the Wrocław issue, and I also realise that these are EU citizens who, like any other citizen, have rights that must be respected, but also obligations that they must fulfil (Kozłowska 2014b).

In his reply to Amnesty International, Paweł Lisicki, Deputy President of Gdańsk, also emphasizes inadequate communication between the city authorities and the MOPR. In this letter, the Gdańsk authorities point out that the Roma claimed to be tourists and that they had deliberately and voluntarily left the area. In turn, Lisicki refers to the abandoned sheds and the property left by the Roma on the site as rubbish that had to be cleared from the municipal plot (*Reply of the Deputy President of the City of Gdańsk* 2014). Draginja Nadazdin, Amnesty International Director, responds to this letter, arguing that the situation in which the Gypsies were told to leave their homes is not one of a voluntary nature (*AI's Letter to the President of the City of Gdansk* 2014).

Talks with activists from several cities and Nomada are under way about meeting in Gdańsk and starting work with the Roma. The initial idea is to rebuild the demolished dwellings in their previous location. This would be in conformity with the law, since according to Art. 344 of the Civil Code, the owner whose property has been compromised is entitled to so-called property claims, which consist of a claim for *restitutio ad integrum*.

On 20 August, the Commissioner for Human Rights notifies the President of Gdańsk that he has opened an inquiry into the case of the Roma being displaced from city-owned areas in Gdańsk-Jelitkowo. At the grassroots level, in turn, a working group of activists is set up. We embark on working out the details of our activities and our strategy. As a first step, the need to explore the area and, above

all, to meet the displaced migrants, is identified. We are trying to determine what the Stoica and the Calderar families need and expect.

We set up our first meeting with the Roma at the Ergo Arena in Sopot, where we are picked up by Constantin Stoica. We are led into nearby bushes, in the depths of which there are three tents and a makeshift stove, where the Roma prepare meals. Rugs are spread out on the ground, and there is a hearth nearby, which serves as a source of heat for the Gypsies when the weather gets colder. At that time, the Roma group consisted of eleven people (the rest left after the eviction to Wrocław). We are warmly welcomed and offered cola with instant coffee. The children are very happy to see us and want to play with us. We talk about what we can do and how we can be of assistance to them. We listen to what they have to say and how the eviction went. We agree that we should find them a new safe place to live, away from the media and that is unknown to the city authorities. We begin to view and inspect the first vacant sites and plots where the Roma could potentially settle.

In the following days our initiative attracts new female activists. The Syrena collective publicizes the Gdańsk evictions in the anarchist environment, publishing a radical text entitled The Anatomy of Fascism, Participation and Revolt: The Housing Mafia and Modern-Day Slavery in Gdańsk (Syrenka 2014). The article is an attempt to broaden the perspective of discrimination to include issues related to the housing policy in Gdańsk. Our group is engaged in discussions on how to empower the Roma and remind the city authorities that this family is part of the Gdańsk community, as well as to make them understand the Roma's plight. At the same time, we are committed to giving the floor to the victims and making them be heard and seen. A letter is prepared and signed by the Gypsies. The local media are informed about the letter that is to be handed over to the President. The letter outlines the needs and circumstances of the Roma.

On 22 August 2014, the expelled Roma, together with a group of activists, head to the office of the President of Gdańsk, Paweł Adamowicz, and present a letter asking for help. Antoni Pawlak, a spokesman for President, faces the migrants and reiterates that the Gypsies are tourists and had no right to occupy municipal land. The whole event is observed by journalists of "Gazeta Wyborcza" and "Dziennik Bałtycki". As suggested by the President's spokesman, the group goes to MOPR, which is expected to assist the Roma. There we meet with a MOPR representative, who makes the offer of shelter conditional on the segregation and separation of women and men (*The letter of the evicted Roma addressed to the President of Gdańsk, Paweł Adamowicz*, 2014). Moreover, on that day the press reports that the decision to evict the Roma was prompted by the city' s interest in selling the plot of land at ul. Bursztynowa to a developer (Wierciński 2014b).

In the following days our team splits into two groups and we focus our efforts on searching for safe havens that seem inhabitable. During this search we spend many hours together with the Roma and begin to understand each other better.

The Roma will later say that this was an important time for them, because they felt that they were not alone and that they had support in us. Gypsies feel safer with us and they move around more confidently in places unknown to them. Mobile phones play a very important role in communicating with the Roma during the ongoing search. Men, leaving children and women in their tents, constantly call each other, shortening the distance between them, reporting on their searches. Not knowing the spelling and not knowing how to write, contacts on the phones

are saved and remembered on the basis of the sequence of digits that make up the individual numbers. In this way, they are able to memorize from a dozen to several dozen contacts.

On 25 August, the current Roma refuge is discovered by the Sopot municipal guards, who order the migrants to vacate their camp by 29 August. We schedule another meeting with MOPR staff, at which we jointly work on ways to include the Roma in the social assistance programme.

So far, there has been a balance in the media narrative between the emphasis on the ethnic background of the Roma as motivation for their eviction and the illegality of evicting them. In the letter submitted to the President of the city by the Stoica and the Calderar families, the perspective of being a citizen of Gdańsk and the desire for integration are underscored. Nevertheless, new references to the historical identity of the city of Solidarity and multiculturalism are beginning to appear in the media discourse. In this context, the issue of the upcoming opening of the European Solidarity Centre is raised in the media. The writer and historian Mieczysław Abramowicz becomes the voice of this criticism and poses a question:

> We pride ourselves on a centuries-old tradition of multiculturalism and tolerance, and on the ideas of freedom and solidarity which, here in our city, laid the foundations for the greatest bloodless revolution, where the European Solidarity Centre is about to open, of which we will all be so proud. Where was Gdansk solidarity, respect for diversity, the right to decent treatment, the right to dignity when, on 4 August, a group of municipal officials, assisted by the Municipal Police, expelled Romanian migrants from their slums in Jelitkowo? (Abramowicz 2014)

Despite the promise made the day before, on 26 August we receive a phone call from the Roma, saying the municipal police have arrived at their encampment and are ordering them to pack up and leave. We rush to see them and inform the media about this incident. The employees of the Sopot Municipal Social Assistance Centre (MOPS) are also present and are trying to persuade the municipal police to give the Gypsies time to take all their belongings. The Roma are frightened, anxious and powerless. We are working together on what to do next, and we are waiting for journalists. We inform the Roma that we do not yet have a new site for them, but that the Gdańsk and Sopot authorities do not leave us a choice… We know that, under the law, we can try to restore the lost property, namely to return to ul. Bursztynowa in Gdańsk-Jelitkowo, from where Roma families were originally displaced. We make a joint decision to return to their previous place of residence. Meanwhile, one of the Roma, Ewa Stoica, gives an interview to TVP Gdańsk. She tells the story of what happened and shows the reporters where they lived before – this is her first ever televised interview *(Roma thrown out of Gdańsk and Sopot* 2014). An eleven-member Romanian migrant group returns to ul. Bursztynowa, which is an unsecured area. We help them to move their belongings and put up their tents. A municipal guard patrol appears on the site, observing us, but does not approach us and does not intervene. Soon the representatives of the Gdańsk authorities also arrive, including employees of the Gdańsk Municipal Real Estate Authority, employees of the Municipal Family Assistance Centre and the Police. City officials accompanied by the municipal police inform us that we have to leave the property:

> You have no right to be here, and whatever you are doing here at the moment is simply provocation […]. There was no eviction here. Asked by Aleksandra Kornatowska from the informal Romanian Roma Support Group in Gdańsk about what the actions of the authorities should be called then, the official replied: – It was just putting the site in order. – You can put the site in order by collecting rubbish from the ground, Kornatowska answered. Head of the Residential Services Office (BOM): – That is precisely what it was – rubbish (Hukało 2014).

We inform the uniformed services that the Roma lived here before and have the right to stay here, and that the city evicted them without a final and binding court ruling. Following consultation with their superiors, the police and municipal police realise their hands are tied and do not intervene. However, they continue to assist the officials in their work. Then Maciej Lisicki, Deputy President of the city arrives and, in an effort to get rid of the Roma, calls on the border guards to check the migrants' documents. In addition, workers and private security guards are being summoned to destroy the Roma property again, tents this time. The measures taken by Lisicki are clearly aimed at intimidating the Gypsies and forcing them to "voluntarily" leave the city's plot. Lisicki responds to our demands for a legal justification and a valid document by saying:

> – You had nothing and you have nothing. – Nobody here removed anyone […]. I do not care about their nationality. These are people who are trespassing and are to leave the plot today (Hukało 2014).

The Deputy President reiterates that the Roma who have lived there for the past three years are tourists and not residents. Despite our efforts to persuade the Roma that there is no legal basis for their expulsion, Constantin (who makes decisions in this family), frightened and upset, decides not to stay there. Therefore, we leave the plots in ul. Bursztynowa.

In the course of these events, Gypsy property is destroyed again, the family is deprived of its stove and mattresses, and only two of its three tents remain. Eleven people are left with two three-person tents and seek shelter for the upcoming night. They manage to find a place near the cemetery in Gdansk Oliwa. It is cold at night and we bring them sleeping bags, gas bottles, rugs and hot tea. In the morning, the cold becomes unbearable and the Roma move to spend the rest of the night at the railway station. The area where the tents were pitched was not safe. As of 26 August, our actions and attempts to exert media pressure have ceased to seek dialogue and consensus. Our strategy morphed into emphasizing the conflict with the city, by adopting a discourse accentuating exclusion, persecution and discrimination. Successive expulsions have brought about anxiety and distress for the Stoica family and a temporary breakdown in communication between our group and the Roma. Nevertheless, we are able to establish that they are now safe and that they are renting a campsite. We launch our own media campaign by starting a blog titled The Roma in Gdansk. Against expulsions and evictions (http://romowiegdansk.wordpress.com), as well as a Facebook group (www.facebook.com/pages/Roma-w-Gda%C5%84sk/761684880543694?ref=hl), I also write my own press release on recent events and draw up a Petition against the illegal eviction of Roma in Gdańsk (Nowicki 2014a, 2014b; Facebook: Roma in Gdansk 2014; Roma

in Gdansk. Against expulsions and evictions (2014)). We are slowly establishing a network spanning the virtual and material strands of the Gdańsk Roma story. Information about the events begins to travel, creating a map between the corporality of our movements and its technological mediation.

In the aftermath of the successive evictions, the plight of Gdańsk Roma is beginning to generate interest beyond the local media. Roman Kwiatkowski and Bogdan Trojanek, members of the associations of Polish Roma, also choose to address this issue. These organisations wish, first and foremost, to promote their particular interest in preserving the good reputation of their community. Therefore, they emphasize their national origins, built on the multiculturalism of Poland. It is in their interest to criticise all the actors who highlight the Roma's ethnic origin in this matter and to highlight the Polish nationality of the Romanian Roma and issues relating to equality before the law for all citizens. For example, Bogdan Trojanek, President of the Royal Roma Foundation, has stressed that:

> – The behaviour of some of our Romanian brothers has had a very negative impact on the reputation of the Polish Roma. We feel that we are Polish patriots, we obey Polish law, we work hard. We love Poland. Unfortunately, the media often do not distinguish the Polish Roma from the Romanian Roma. And the differences are enormous. I urge you to pay attention to this. […]
> – The Nomada Association for the Integration of the Multicultural Society and Amnesty International have established cooperation with the Roma from Gdańsk…
> - In my opinion, these people are manipulating the Roma of Gdańsk and instead of helping them, they are harming them. They do not offer them any genuine support, e.g. in the form of accommodation. Instead, they insist that they stay on an illegally occupied plot of land and violate Polish law. Unfortunately, these types of organisations very often exploit the situation of the Romanian Roma to promote their own agenda. The louder the publicity, the better. […] – The Polish state should guarantee the security of the ethnic minorities, respect human rights, cultural rights and so forth. Likewise, every Roma who arrives in Poland should abide by the Polish Constitution. It is unacceptable that the Roma enjoy the hospitality of Poles and, at the same time, disregard the rules of our homeland (Heblowicz 2014).

In an interview with "Gość Niedzielny" Trojanek also deplores the street begging, which is a means of survival for the Romanian Roma. This positioning of the difference between the Polish and the Romanian Roma is far removed from reality, as a different picture emerges even from the life story of the author himself of this criticism:

> They lived off what she had earned with fortune-telling and begging. In winter, when it was so cold that the water was freezing in their cups, they hid under down duvets. When there was nothing to eat, he drank water with sugar and begged. He was given more than others, because the passers-by sympathized with him, thinking he was a Pole who had simply got lost (Kłoś 2011).

In turn, the letter of the Association of Roma in Poland to the President of Gdańsk, Paweł Adamowicz, concludes with the following words:

> […] why did your officials, aware of the infringements committed by Romanian citizens, not take legal action against them (immediate removal from the site, failure to

> register their stay, failure to call on the border guards to send them back to Romania)? Have the officials responsible suffered any consequences, as would any other citizen who does not enforce the law? Why has our Association decided to approach you with this letter and ask you to enforce the law against Romanian citizens of Roma descent? This is because the Polish Roma already had enough of continuous racist, hateful, xenophobic commentary by some of the media and by many Internet users. Why should the failure of state and local government authorities to fulfil their duties always affect the Polish Roma, constantly lumped together with foreigners breaking the law? Mr President, please visit the websites that have previously published articles on the eviction of the Romanian citizens in Gdańsk. You will read several dozen (several hundred) hateful entries aimed at our community, and how are we to blame? For an average Pole, the Romanian and Polish Roma are one and the same thing! In the light of the above, we kindly ask you to instruct your subordinate services to enforce the law (*Letter to the President of Gdańsk in connection with the eviction of the Roma* 2014).

Not all Roma organisations in Poland gave priority to identity based on citizenship over ethnicity. The Association of Polish Roma has adopted a different position in an article published on its website, describing the course of events in Gdańsk (Huczko 2014).

As I noted before, the pressure on the Gdańsk authorities became increasingly focused on the historical policy rooted in the ethos of solidarity. This coincided with the opening of the European Solidarity Centre, a project which aroused much controversy among the city's inhabitants, and among former "Solidarity" activists and social activists alike, who were critical of the authorities and politicians hijacking the workers' movement to use it as a symbol of the fight against communism. Criticism of this policy in the context of the issue of the Romanian Roma appears both in my petition and in the statements of public figures, journalists and sociologists (*Sociologists on the Roma of Gdańsk* 2014; Wierciński 2014c; Żakowski 2014). In connection with the opening of the European Solidarity Centre, a discussion is under way in our group on staging a protest on the day of its launch. Our main concern is that we have little time to promote the protest and doubt whether there is a chance of receiving support from Tri-City activists, who have so far ignored the behaviour of the Gdańsk authorities towards migrants. We inform the Roma of this initiative, of the risks involved and the uncertainties we face, as well as of the potential benefits. We are beginning to seek support from local Tri-City communities. So far, apart from journalists, two people from Gdansk have actively joined in helping the Roma (myself included). We attend several meetings where we collect preliminary declarations of support from a few individuals. There is not much time to organize a protest as there are only two days left before the opening ceremony. Some members of our group are preparing a banner for the upcoming opening of the ESC. The day before, it turns out that part of the Gdańsk-based KIPI SAMBA group, which had previously pledged to prepare the soundtrack for the protest, withdraws from participation. With little support from the local community, we give up on the protest. Our decision is further reinforced by the concern about our inability to protect the Roma from the intervention of the various uniformed services present on the ground and the risk of turning the media coverage "against" those involved.

Following the evictions of 26 August, the Roma find shelter on a plot of land with an elderly man who, exploiting their exclusion, charges them 90 zloty per

day[4] for the possibility to pitch their tents. We try to negotiate the price, but the person renting the plot does not want to hear about lowering the cost. The man who leases out the land believes that Gypsies do not deserve better treatment because they are inferior on the grounds of their ethnicity. We cannot reach any agreement. The conditions in which the Gypsies live are described by Aleksandra Kozłowska from "Gazeta Wyborcza":

> They rent a small house in a neglected garden from an elderly man for 60 zloty a day [in the article there is an error as to the actual amount per day, which totalled 90 zloty - T.N.]. A living standard not much better than a garden shed, and if they don't collect enough scrap and pay up each night – the "old man" yells at them and threatens to call the police, "to make those Gypsies get the f*** out of here, there is no way I'm going to court" (Kozłowska 2014c).

On 29 August, the case of discrimination against the Romanian Roma is reported on in the nationwide media. TVN24 in the "Dwie prawdy" show by Roman Kurkiewicz and Jan Wróbel critically portrays the actions of the Gdańsk City authorities. This broadcast is the result of our work and establishing contact with Roman Kurkiewicz.

The next day the members of our group go back to their respective cities. Agata Ferenc from Nomada and two people from the Tri-City remain in Gdańsk. We are continuing our quest for a solution to the housing problem of the Roma from Gdańsk.

After the August incidents, the media have focused their attention on tracking the proceedings of the Gdansk Public Prosecutor's Office, which is handling the notification of a crime filed by Nomada[5]. The grounds for opening an investigation are being examined. "Gazeta Wyborcza" manages to obtain a statement from the Prosecutor's Office indicating a breach of law by officials:

> – Even if we do not find any violations, it will not change the fact that there are other legislative provisions in force in Poland which prohibit evictions without a final and binding court ruling, says Renata Klonowska, Head of the Gdańsk-Śródmieście District Prosecutor's Office (Włodkowska 2014).

In September, our team continues to focus on supporting the Stoica and the Calderar families and setting up a public debate on the city' s migration policy. We already know that the authorities are preparing some form of assistance for the evicted Roma. However, the officials remain silent on the details and do not involve the residents, the Roma or us in consultations on the shape of such a policy.

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[4] In September, the man allows the Roma to move into a small room and hall in the sheds located on the plot.

[5] While writing this article I discovered that it was not the first wrongly conducted eviction by the Gdansk Municipal Council. The previous one took place in Gdansk in 2004, when the Deputy President, Szczepan Lewna, evicted a restaurant owner from city-owned premises. In that case, the Gdańsk court issued a verdict and sentenced a city official to six months in prison, with a two-year probation period ([ms] 2006). Maciej Lisicki took over from Lewna and is responsible for the current Roma eviction of 26 August. As regards the eviction of 4 August, we do not yet know the person responsible for this decision.

It is particularly important to allow the Roma, who wish to speak on their own behalf, to have a say in this matter. We expect the city to try to exclude us from public debate and co-operation with the Roma, treating us as external and redundant players. The partner to whom the work with the Roma will be delegated is the Centre for Support of Male and Female Migrants (CWII), an organisation that has been collaborating with the city for a long time and maintains good relations with civil servants.

The Gypsies give an interview to Jacek Wierciński from "Dziennik Bałtycki" about the recent events, and recount their side of the story, the way they experienced it. Ewa Stoica, partner of Pardelian Calderar:

> […] is proud of herself, of her courage on that day. The point is that the vice-president of Gdańsk, Maciej Lisicki, was there. – She told him that he was heartless, that he was a pig, says Pardelian, while the Roma woman sitting next to him giggles (Słomczyński, Wierciński 2014).

On 11 September, Jacek Wierciński reports in "Dziennik Bałtycki":

> After a series of articles in "Dziennik Bałtycki" and protests by activists, Gdańsk officials have changed their minds. The matter is being investigated by the prosecutor's office in Gdańsk. […] – Poland is not prepared in legal terms to deal with the problem of migration. Gdańsk is currently preparing a pilot programme of social assistance for Roma migrants (Wierciński 2014d).

On the other hand, "Gazeta Wyborcza" describes the change in the policy of the Gdańsk authorities as follows: "Perhaps it was the pressure from NGOs and the Ombudsman for Human Rights that made the difference?". (Kozłowska 2014d). Amnesty International also stresses its role in the launch of a pilot programme to help the Roma family by the Gdansk authorities (*Roma in Gdansk* 2014). Roman Kurkiewicz, on the other hand, ironically suggests that the city authorities decided to revise their policy after his show (Kurkiewicz, Wróbel 2014).

It is worth noting that this took place before the upcoming local government elections and the authorities certainly did not want to continue their streak of bad press in popular titles. The combination of factors that caused the city authorities to deflect from their former stance had many actors. An analysis of events and media discourse shows that the authorities were defeated in the media. Also in terms of the law, the Prosecutor's Office, at the request of Nomada, launched an investigation, having doubts about the decisions taken by the officials. Finally, there is also the informal Romanian Roma Support Group in Gdańsk. One should not forget about the Roma themselves, who showed their commitment to fight for their rights, shouted out loud that they were being harassed and mistreated, gave interviews to journalists, visited the City Hall and took part in a public debate. Although the city authorities wanted to forget about them, the Gypsies were continuously coming back into the media. They appeared on the Internet, in front of cameras, by microphones, in photographs and in texts. Our team worked in the shadows to support the Roma and to explain when and why they should speak for themselves.

On 13 September, a debate was held entitled *What kind of integration do we need? The Roma in Poland – tenants, tourists, immigrants?* To discuss the issue, the city del-

egated a number of officials who had no real influence on the expulsion of the Roma nor any decision-making authority over the city's social policy. Representatives of NGOs, activists and representatives of the Municipal Family Assistance Centre in Gdańsk and the Social Development Department took part in the debate. The representatives of the authorities were not able to say anything about the forthcoming assistance programme for the Roma. They repeated what we already knew: the support that is available concerns people with a registered stay. At the moment, they could offer in-kind assistance: clothing and food, and school kits and school lunches for the children. In view of our comments that in order to register their stay, the Roma need money which they do not have and support from institutions, they replied that their capabilities are limited by the Act on Social Assistance. The officials suggested that the assistance should be provided by independent self-government organizations or activists. At the end of the discussion, officials declared that they would contact us in order to further develop their plans for Roma assistance and strategies for dealing with migrants. These promises were not fulfilled (Kozłowska 2014e).

The official announcement of the launch of the support programme for the Roma took place on 16 September, during a meeting with Draginja Nadazdin, Director of Amnesty International, and Ewa Kaminska, Deputy President of Gdańsk (*Will Gdansk help the Roma*? 2014). In the subsequent days we would learn that the programme will cost 10,000 zloty and will last from 1 October to the end of 2014. However, the authorities declare that they will continue to work with this group in the following year. The programme is to include assistance in registering a stay in Poland, support in finding a flat, as well as education, health insurance and finding a job. The organization to which the city delegates these tasks is the CWII (Wierciński 2014e).

However, until the programme starts, the Informal Romanian Roma Support Group continues its work and search for housing. The members of the family we are working with cannot read or write. They learn about what is currently happening in the press from us during joint meetings. We all gather together from time to time and read the newspapers and their online issues. We share a laptop, which the Roma mastered very quickly using the touchscreen. On 19 September, I travel to the place of residence of the Romanian Roma family. I have brought with me the press clippings of the past week to tell them what the media are reporting on their cause. The visit is very exciting, because they learn of the fact that the city has granted 10,000 zloty to the CWII for the purpose of helping the family. I need to explain to the Roma what this means and how this money will be distributed. The difficulty is to clarify that this amount will not go directly to them, but to the organisation that will provide the aid. I explain to them that only the elder Ewa Stoica holds a valid Romanian identity card and can apply for registration of her stay right away.

On 26 September, Ewa Kaminska, Deputy President for Social Policy, sends her response to the petition *Against the illegal eviction of Roma in Gdańsk*. The authorities explain that the decision to launch an assistance programme for the Roma is motivated by their difficult circumstances (A reply from Ewa Kaminska 2014). We wonder why the city fails to respond to the Stoica and Calderar letter of 22 August, to which the deadline for replying has just expired. After all, the petition was never officially submitted, it was only posted online…

By the end of September, the Roma manage to find new housing. We negotiate with the owner the terms of the lease agreement. I prepare a document that the Roma sign with the landlord. On 1 October, the family moves in with the assistance of the CWII (Kozłowska 2014f).

My work with the Roma during these events develops into a friendship. I am currently supporting them in their communications with the police and the public prosecutor's office. During one of the conversations, before moving, Pardelian Calderar says: "You know what Tomek, recently, when the old man's son threatened to evict us, I repeated what you had said to him the last time, that he was not allowed to throw us out just like that, and that I would call the police or report it with Tomek, where necessary. And you know what, he turned around and left us alone!".

Finally, the role and importance of public opinion should be mentioned, including in the form of comments under articles published on the Internet. Their significance in the study of social attitudes should not be overestimated, as the percentage of people who read and want to comment on published texts would also require a separate analysis. In their assessment, however, it is worth emphasising the anonymity offered by the Internet. For example, the same people who display xenophobic attitudes in anonymous posts, in situations of undispersed visibility and responsibility, might speak differently. Nevertheless, the comments can be classified into the psychoanalytical categories of the Real Self and the Ideal Self. In this approach, the online commentary space may in some cases be treated as a source of research on the Real Self of the speaking entities. Therefore, it seems reasonable to note the importance of a qualitative analysis of real social attitudes on the basis of online entries. In certain situations, they can become a structure that shapes the attitudes of the Ideal Self, that is, the way we want others to perceive us. On the basis of such reasoning, it was possible to create rhetorical arguments criticising the Gdańsk authorities for the wave of hatred, Romaphobia and xenophobia triggered by their actions. The media covering the events from the standpoint of situated knowledge were also the cause of the wave of online "hate speech" aimed at the Roma. Still, one should remember that the role of journalists was to report, to obtain information and to make socially important content public. This made it possible to indict the Gdańsk authorities for stirring up the dormant aversion to the Roma. I used this argument to write my petition, and the Association of Roma in Poland also raised this allegation. In a slightly different context, Przemysław Gulda addressed the online comments to pass judgement on the residents of Gdańsk, Poles and people in general. However, the text in its entirety was a criticism of the policies of the Gdańsk authorities (Gulda 2014; Nowicki 2014a; *Letter to the President of Gdańsk in connection with the eviction of the Roma* 2014).

The comments under the articles were permeated by Romaphobia and stereotypes that have grown up around Gypsies, manifested in a derogatory description of this group. Another part of the online entries criticized the journalists who reported on the matter praising the Gdańsk authorities for their evictions. The fewest comments were made in defence of human rights. Whenever Internet users tried to challenge the arguments in the text, the dominant structure was the one called in eristic "the missing middle ground". "Well, perhaps the activists from Amnesty International or the disgraced reporter who wrote this article should take them home and let them become part of the landscape there". The argument was aimed to bring down the actions of those who stood up for the Roma to an

extreme. Such accusations are often levelled at activists or persons with a strong social conscience. The rhetorical value of the argumentation thus constructed lies in placing the rightness of action in the position of holiness and total dedication to the cause, abandoning one's own particular interests. It distorts the scene of a conflict and presents it in an exaggerated, ludicrous way. In the case of eviction, the conflict occurred along the Roma-city of Gdańsk axis. When third parties (activists/social activists) entered the space of this relationship to help the oppressed, the conflict map reconfigured and new actors appeared on the side of the excluded. That moment was used to substitute the system/authorities with the activists and challenge the activists to take responsibility for the effects of the actions taken by the authorities. It was the city authorities who were supposed to demonstrate holiness, which in this case meant respecting the law and the rules of social conduct.

Diagnosis – a theoretical analysis

The dispersion of the Roma minorities within the EU Member States, caused by economic violence and Romania's policies, can be considered an attempt to spread Romaphobia among the nations that, in the past, had a friendly attitude towards them.

> According to the findings of the European Union Agency for Fundamental Rights in 2009, it is estimated that every Roma has fallen victim to racial discrimination in their life, which prevents them from finding a job or from gaining access to high-quality education (*Human Rights HERE! Roma Rights NOW! A Wake-Up Call for the European Union* 2013).

The history of the places where Gypsies appear shows that their presence in Western democracies is perceived as a threat. A review of EU countries' policies for dealing with the Roma indicates one of the main actions taken is the removal of the Roma from a given country's territory. The influx of Gypsies into other countries and their constant migration spur opposition from the native population and thus become the most effective force in building a policy of prejudice against this group. Continued persecution and flight from one place to another are depriving the Roma of the opportunity to accumulate economic capital, leading to a situation in which they are becoming poorer and therefore more burdensome for the host country. As a result of growing exclusion and poverty, the social response to the presence of Gypsies becomes increasingly stronger.

From the legal point of view, the Romanian Roma do not constitute a Polish ethnic or national minority as they are citizens of another country. They are not eligible for refugee status either, as they are members of the EU. However, the very outrage of being a human being unforeseen by Polish law points to the danger of exclusion through absence. The need for a mechanism of reporting and legally classifying a given group reveals the paradox and etymology of the meaning of the word "subject", i.e. someone subject to the law and entitled to their rights. In practice, this means that a country's citizens include only members of the state nation and, in order to make other groups equal, people need specific legislation on refugees or ethnic groups. The uniqueness of their circumstances and the necessity

for an additional provision, a protocol on rights and obligations, underlines their difference and unassimilated distinctiveness. The ambiguity of the situation of the Romanian Roma in Poland is due to their obligations under the law of the country in which they are staying, and at the same time having Romanian citizenship. Although they enter the territory of the Republic of Poland, they remain invisible to the system. In this context, the only possible inclusion of Gypsies in the legal system takes place when the legal obligations are violated and broken. I would call the situation where an invisible individual becomes subject to the law and becomes an offender, a negative inclusion. This is the most common mechanism for exclusion of the Roma, which leads to their being suspended in the space between the deprivation of their rights and the simultaneous evocation of their legal obligations. Consequently, the criterion for checking whether anyone has found themselves outside the law is the question of whether they are benefiting from a breach of the law. If crime becomes the only way that can alter someone's legal situation, we can presume that they have been deprived of human rights. Breaches of the law are the only means of regaining 'equality' before the law. It is not important that this equality is regained through the violation of a legal norm, the most important is the fact of regaining one's subjectivity. This rhetoric appeared explicitly in the statements of the authorities of the city of Gdańsk: "Someone has seized a municipal plot and we are least interested in whether it is a Pole, a Romanian or a Swede. If the Swedes had set up a tent in the city park, we would have asked them to leave too" (Włodkowska 2014). This possibility of being equal before the law and not being treated less favourably was recognised by the city authorities, who noted that by violating the law, we become equal before the law. Equality in the public domain is not given to us, but, rather, it is entrusted to us, while a privatised life is characterised by inequality and difference. It was precisely this that contributed to the force of the Gdańsk authorities' message that, while reminding the Gypsies of the laws in force, they were offered the legal disadvantage of having to carry out their obligations. It turned out that it was only by infringing the rules that the Roma managed to recover their rights and the resultant protection. This leads us to a paradox: for those excluded from the system and disenfranchised, it is only by breaking the system's rules that they recover their legal personality and become part of the community (Arendt 2008: 401). The tension between equality and difference in this case is the struggle betw-een what is public and what is private. The inability to integrate Roma into the legal system stems from the inability to equalise ethnic differences with the equality of social groups, to whom the mechanism of extracting what is private into the sphere of politics is applied by obtaining a level of homogeneity satisfactory to the majority national community.

Gypsies are trapped in their own distinct ways. Remaining outside the scope of the policy for eliminating inequalities, they are at the mercy of institutions and organizations that can only remind the community that the group still have human rights. The depoliticization and privatization of the life of the oppressed reduces their existence to the expression of the difference in the space deprived of communication with the public sphere co-inhabited and created by others.

There is one more way to establish a subjectivity that is both more dangerous and more unpredictable: to transcend the space of the invisible exception and to make one's "private" exclusion a political matter. Such a path has now been taken

by the media, which have the power to make the private public. While the law paved the way for negative inclusion, it was the media that allowed the invisible ethnic difference to be shifted from the area of equality before the law into the area of significant difference, making the privatized life of the excluded a matter of public concern. A person who is deprived of legal personality lives in a non-transparent grey zone; their entire life becomes private, only sheer subsistence remains, even in places where there is a public sphere for others. Therefore, the risk of such action stems from the fact that the life of the excluded people is put into a space whose strength lies in arousing emotions – and these in the case of the Roma generated hateful comments from the Internet users under the articles describing their story. The degree of otherness and the construction of the difference achieved through the use of the media allowed the Gypsies to break out of the nameless, invisible crowd, and to regain their voice. Overcoming powerlessness and helplessness was accomplished by publicising the exclusion, the public was given a chance to find out who the Roma were, what their story was, and why they had violated their legal obligations despite being denied basic rights.

The de-territorialization and dispersion of the Roma, together with their systemic oppression, have also determined the specific nature of their use of mobile phones for communication. The tactics of resistance they develop are created in a "culture of silence" – without literacy. Instead of a discursive structure of the subject, built around education, childhood and text, the Roma create a structure of the subject based on the determination to adapt. The instructions and comprehension produced by the oral culture were not subordinated to this kind of questioning. In their strategy of non-discursive practice, the Roma simultaneously refused and intercepted the path of mastering a particular competence, learning it by combining symbolic representations used in phone interfaces with the oral nature of the meanings conveyed. A mobile phone has become the heuristic key to anchoring and adapting to what this instrument can do in the hands of a community that maintains its tradition through oral communication of knowledge and culture. Another problem area was the subjective opening of this group to constructing its own positions through mediation and networks created by expanding its identity with technological prosthetics. Mobile artefacts proved that the obvious nature of discourse and language competence can be surpassed or omitted in the process of mastering the ability to handle a particular technology. In this context and in the face of the growing complaints about secondary illiteracy among Western societies, the new media with their "friendly" interface can be treated as a linguistic leap from language to the iconicity of our culture. Studies by Julia McAdam and Evelyn Arizpe show that bilingualism and the cultural diversity of migrants use image representations in the process of understanding and reading, thus creating hybrid identifications (McAdam, Arizpe 2011). The Roma admitted that they learned Polish at home while watching TV and while using mobile phones. Their strategy for overcoming the barriers caused by illiteracy was to create associations between the number sequences that appear when answering the phone and a specific person. On this basis, they were able to create pictorial subject representations and assign symbolic images to people.

An important tactic of this group in using mobile technology was to acknowledge the potential threats of oppression and panoptical surveillance. For example,

this awareness led them to discard their previous phone cards and change their numbers after another expulsion of 26 August. They took this step because of the presence of border guards in the displacements and fear of the Municipal Family Assistance Centre, which insisted on establishing their location and on conducting background checks. Their fear was justified by the loss of housing and the inability to provide security for their children, as the lack of proper housing, according to the officials, could constitute grounds for taking the children away. Our team also lost contact with them and had to wait for the Roma to contact us.

In view of the non-territoriality of the Roma culture and their traveller lifestyle, the mobility of new technologies has become intrinsically incorporated into their identity. Just as caravans used to be the distinguishing sign of their mobile tradition, so have mobile phones become embedded into the trajectories of their relations with technology. They made them a tool, the availability and speed of which became an element of the tactics of resistance to systemic oppression. While the physical mobility of this group used to be the main tactic of escaping oppression, nowadays, in a forever changing world, in which relations with the technological other have made our bodies computerized, it is the phone that has become synonymous with mobility; still, however, not a metaphor of fluidity between the body and the digitalization of our identity (Braidotti 2014). If we look at it in the spirit of Freire's pedagogy, mobile technology has enabled this group to emerge from the "culture of silence" and to build alliances and symbolic-corporeal relations that have gone beyond discourse. It was thanks to their mastery of this technology that we were able to maintain constant contact with the Roma; to immediately be informed of further persecutions; and to initiate a network of interconnections between the information received and its mediation by the "fourth power", i.e. the media. It would be a mistake to make their ethnological difference the essence of the distinction between them and the Westerners. Their exclusion is political in nature, but the way they interact with technology shows how relations with machines can evolve into a path towards emancipation. The nomadic subjectivity of the Roma shows the limits of ambivalence between mobility and the determination to adapt. On the one hand, we have the shifting of boundaries between the organic and the inorganic and, on the other hand, the adaptation to conditions of a constant readiness to change the place of residence. Finally, the question must also be asked as to whether it makes sense to talk about technology in the context of highlighting the ethnic difference? No, it doesn't. This process affects all users of technology to varying degrees. The expansion of modern technologies must be seen from the perspective of streamlining our relationship with machines that transform information into hyper-reality. However, their involvement in the media culture is based on a selective entry into the simulation space. Their links to technology do not make the difference between *zoe* and *bios* disappear. Our experience gained during the fight against exclusion by the Gdańsk authorities may serve as an example of the fact that politicising the Roma's private existence was a process carried out through tactics of fighting oppression, rather than a permanent fusion into the simulation and computerisation of their experience. It is true that the technologies and the systemic exclusion described in this article create transversal connections, which make up the contemporary map of the political economy. Nevertheless, it is difficult to agree enthusiastically/affirmatively with all

the posthumanist diagnoses describing, as feminism used to do, the problems and transformations taking place in the first world, which ricochet and hit the excluded communities in the form of exploitation and political and economic oppression. The non-territoriality of the Roma and their lack of nationality situate them in the non-place on the political map of Europe (since even their own country of citizenship persecutes and expels them). An example is the lack of the defamiliarization effect with respect to this group. On the contrary, any links to technology serve to maintain family ties and relationships. This is directly related to the fact that they are not usually separated by voluntary decisions, but rather by the exclusion and persecution that affect them. The Stoica and Calderar families did not come to Gdańsk because they wanted to settle there, but because of the imprisonment in Gdańsk of one of their group members. I helped them to communicate with Constantin Stoica[6], who was detained in custody, by recharging his phone over the Internet so that he could have contact with his loved ones. Before arriving in Gdańsk, the Stoica family sold their house in Romania to pay for a lawyer to get Constantin out of prison and prove to the court that he had been unjustly convicted. For the Roma, the family is the most sacred value – they are ready to make many sacrifices – and technology builds and sustains this bond.

On many occasions, in the context of the Roma migration, there are accusations of a lack of willingness to assimilate. Without going into details, it is worth emphasising the colonial dimension of this claim and starting to talk about integration. However, this would be premature, because in the context of the relationship with the technological other, we can speak of a process of assimilating the inorganic. In this sense, the appropriateness of these calls for integration should be considered. Our symbolic superstructure, legislation and identity policy does not keep up with the identification and changes that arise from the transversal links with the inhuman. If we agree, at least to some extent, with the diagnosis of post-humanism and its proposed approach to assimilation and integration, then the Roma community on this map does not stand out from other social groups involved in the changing world of the fusion between technology and the body.

Returning to the issue of the equality of the Romanian Roma before the law, the problem which arose as a result of the policy of the city authorities boiled down to the violation of the principles of public order. For the Romanian Roma, it meant denying them equality by reducing them to those who have obligations under the law, but no rights. When the correlation between obligations and rights is disrupted with regard to one group and continues to exist with regard to other members of society, the existence of the legal order becomes a privilege and a reward for the selected few. The abolition of the equality and universality of the rule of law contradicts the very nature of legislation. The legal system is thus revealing its exclusivity, reducing its formulation to a Schmitt vision of a sovereign exception. The legal order becomes an arbitrary whim of the person or persons with the power to make sovereign decisions.

[6] Constantin Stoica is the son of Constantin Stoica, the person who heads the Roma family in Gdańsk. Roma often give their children the same names as their parents, in order to make it difficult for the authorities to identify them, if necessary.

The fact that the city authorities and their social services offered only material assistance to the Roma, such as food and clothing, put this group in the position of someone who can be helped because they are beyond the scope of the law. Thus, the right to assistance ceases to be an obligation and becomes an act of grace within the framework of the sovereign policy of the municipal authorities.

> – Having conducted background checks, we can offer legal and psychological assistance, food allowance and medicines, said Anna Sobota. – If you had a temporary address at least: in a hostel or with someone from your family, then we could present you with job offers (Kozłowska 2014g).

It has rightly been pointed out in the envious comments under the articles on the Roma that the assistance they receive is a privilege, does not stem from the legislation in force, is arbitrary, and is independent of what the beneficiaries do or are supposed to do.

The only instance one could try to appeal to was human rights, but these, despite their name, are only a kind of declaration, a cry for help from people who are deprived of their rights. According to Hannah Arendt, the paradox of inalienable human rights is that the notion of an abstract man (tabula rasa) was brought to life, who did not exist before at any historical moment (Arendt 2008: 407). Man, analysed outside the context of his identity and outside of social conditions, becomes an idea of the mind, which is left nothing but thoughts closed off in the monad of their "idiocy". Human rights have been defined as inalienable because they are intended to be independent of the existence of specific governments and to apply across borders. The problem is that if there is no government or body to enforce the law, there is no authority or guarantee that it will be enforced. This is reminiscent of Agamben's reflections on the state of exception – *zoe*, or the bare life excluded from the political area (Agamben 2008). Such stripping down of life to its bare bones makes it impossible to talk about legal violence and economic oppression against *zoe*. First, *bios*, a political life, should be restored, which allows for a further expression of injustice and the establishment of a disenfranchised person as a victim. In this sense, human rights would be, in Arendt's view, the rights of a bare life, whose *bios* dimension is reduced to *zoe*.

> […] civil rights – that is the varying rights of citizens in different countries – were supposed to embody and spell out in the form of tangible laws the eternal Rights of Man, which by themselves were supposed to be independent of citizenship and nationality (Arendt 2008: 410).

This equation of two modes of life leads to a confusion of concepts, creating a dangerous fracture in the perception of politics. The human rights referred to in the conflict between the Roma and the city of Gdańsk became a claim for a sovereign act of clemency against those who were reduced to two extremes: the legal mockery of human rights and the privatised ethnic otherness. The very existence of such an expression of injustice shows us that the recognition of human rights, or the bare life, as an area of political intervention, has led to a combination of two types of existence – the private *zoe* and the political *bios*. Agamben called such a transition the transformation of sovereign power into biopower. This is how leg-

islation lays its foundations on human rights. When such an appropriation of human rights takes place, they turn into civil rights. Thus, a Romanian citizen, when staying on the territory of Poland, can only regain his or her human rights by acquiring the privileges of Polish citizenship, which are partially provided by the registration of his or her stay. We are therefore faced with a contradiction: either civil rights are equivalent to human rights, which cannot be true, because citizenship would then be the right of people without rights, or human rights are the right of citizens, that is to say, the right of people with rights. Rancière offers a way out of this conundrum, saying:

> Meanwhile, the third theory exists, which can be summarised as follows: human rights are the rights of those who have not the rights that they have and have the rights that they have not. (Rancière 2008: 128).

What would this mean for the situation of the Roma, who have been deprived of their right to housing by the Gdańsk authorities? Rancière proposes to look at the issue of the invocation of human rights as the phenomenon of the production of dissensus (Rancière 2008: 131). In his view, dissensus constitutes a mismatch between the norm and the law, i.e. what should be and what is given in the content of a concept. He proposes to refer to the notion of injury caused by the deprivation of rights, which creates the possibility of invoking rights which are not vested but are guaranteed as human. The second option would be to break the law as an act of disobedience, for example by securing the right to housing guaranteed by the declaration of human rights and invoking a criminal sanction against those who prevent the exercise of that right. Such action would bring resistance down to enforcing the rights which the Roma did not have but which they were entitled to. This empowerment process would therefore process exclusion and oppression by identifying pathways to winning back rights and obligations and the persons who deny them. This conceptualization of the abstract nature of the term "human" in the declaration of rights allows us to treat its provisions as a normative space to which we can refer if we want to challenge the difference between being a Pole and a Roma, i.e. in the case in point, between being in the political space and being negatively included by having obligations (violating the law).

Another type of exclusion was the accusation that the Roma and activists who joined the fight for their rights were not willing to build a consensus between the parties to the conflict. This happened during an attempt to reclaim the plot of land taken away by the Gdańsk authorities: "You have no right to be here, and whatever you are doing here at the moment is simply provocation […]. There was no eviction here" (Hukało 2014). Subsequent statements by the Deputy President also pointed to an attempt to shift the responsibility for the lack of dialogue and real policy on the part of the authorities onto the Roma being reluctant to accept the proposed solutions:

> – But what else is there to talk about? – the Deputy President asks. – The fact that these people spent the night outdoors and could not sleep because of the cold. – But that's their choice! We offered them places in the shelter for the homeless. There are separate centres for men in Gdańsk, separate centres for women in Gdańsk, Kaminska replies. – But they don't want to separate. They are a three-generation family, they

> need each other. – Well, since they do not want to separate, it is their choice. If they do not want to take advantage of our range of proposals, we cannot force them. They simply do not want to integrate; they are not looking for a job, says the Deputy President. – It is difficult to find an employer in Poland who will employ a foreigner legally, especially a Roma. Ewa Kaminska has one answer to that. – Our biggest mistake was that we did not remove them from the occupied area immediately, after three months of living in Gdańsk. They should have registered their stay after three months and, as they have not done so, we should have called on the border guards to send them back to Romania. But you know how it is – you have a good heart, you start looking for legal loopholes, you turn a blind eye. We pretended that we did not know that they lived there. And we don't have areas for nomadic encampments. We have land for roads, schools, apartments, but not for nomadic encampments (Kozłowska 2014h).

What was the consensus reached on the terms of the Gdańsk authorities intended to be, other than forcing dialogue in a conflict situation where one of the parties is aware that the Roma were being deprived of their right to legal eviction, refused legal personality and offered charity instead? In fact, this criticism boiled down to imposing conditions for dialogue by excluding from its space additional parties, such as ourselves, and the Stoica and Calderar families – replacing the unwanted entities with 'real partners'. This scenario recurred even after an apparent victory, a public declaration by the city authorities to launch a pilot programme of support for the Romanian Roma family. This was when Vice-President Kaminska, instead of responding to a letter from the Roma asking for help, responded in writing to an online petition, addressing it to me. It was clear from her reply that a new partner in the dialogue with the city would be a self-government organisation appointed without any competition. Such a strategy of overcoming the difficult situation of the conflict built upon the opposition between the city's policies and human rights was aimed at removing the fact of the deprivation of fundamental rights and replacing it with a technical problem of distributing aid to the "Roma community". Eliminating politics, such as problems of exclusion, from the space of the conflict, and the smooth transition from the debate on the compliance with and applicability of the law, leads to an artificial situation of shifting the focus to expert "crisis management" strategies. Such a policy results in the suspension of the problem of the migrants' legal status, and, consequently, rights becoming useless as human rights. Rancière has no illusions about such a devaluation of politics and rights, saying:

> They seem to be of no use. And when they are of no use, you do the same as charitable persons do with their old clothes. You give them to the poor. […] It is in this way, as the result of this process, that the Rights of Man become the rights of those who have no rights, the rights of bare human beings subjected to inhuman repression and inhuman conditions of existence. They become humanitarian rights, the rights of those who cannot enact them, the victims of the absolute denial of right (Rancière 2008: 136).

In conclusion, if we believe that the rights of the excluded are the rights of the rightless, and that the only feasible response from the system to this lack of rights is not to modify the legislation in order to restore those rights, but to await a sovereign exception in order to find a way out of the hiatus between charity and humanitarianism, then the rights of those who are denied them become an

extravagance and a privilege. If the current legislation does not provide an opportunity to combat exclusion, but legally deprives others of the opportunity to live in dignity, then the history of the 20th century has taught us little. And yet we know what hiding behind the law has led to in situations where such law has deprived others of the chance to stay afloat. In this sense, there is also a difference between the subject and the object, the subject in the legal order is the one who has (is subject to) rights and obligations, while at the other end there is the object of *zoe*, or the bare life, referred to in modern politics in the third person plural. Such a shift in political conflicts effectively constitutes a negation of politics if the social groups subordinated to the government become an objective "problem" (they – the third person plural). In practice, the addressees of this policy become a thing, a "social group", with which the authorities do not engage in a dialogue, implying a conversation in the second person plural – politics *par excellence*. In fact, this is what happened in Gdańsk when the city authorities, instead of replying to the Roma's letter, responded by describing the Roma in a form that was appropriate for constructing the power knowledge, using phrases that objectified the family, reducing it to the third person form of an "ethnic group". By bringing the fight against exclusion and discrimination down to a humanitarian policy, we are actually following the logic we want to challenge – we are making human rights completely void. Such authority reduces its policy towards the excluded to an exception, where helping the excluded becomes the rule. But it is not a rule that becomes law, it is a rule that is dependent on the will of politicians – it becomes sovereign over those who do not have any power or rights. Maintaining a legal order in which acts and laws effectively prevent others from participating in the community leads to what Hannah Arendt called the banality of evil (Arendt 2010). This was the case with the employees of the Municipal Family Assistance Centre in Gdańsk, when the provisions of the Act on Social Assistance, i.e. the conditions of being subject to the law, did not allow for granting support and working with Gypsies. From a human perspective, this situation resulted in a moral and legal dilemma for the MOPR staff, who were eager to provide support, but lacked the legal instruments to do so.

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Abstract

A study towards change (with mobile technologies in the background). Integration and resistance of Roma families against displacement and expulsion

Poland is not mentally prepared to receive migrants. Under the legislation in force, the Romanian Roma do not constitute a Polish ethnic minority, nor do they qualify for refugee status. Polish law segregates the Romanian Roma, marginalising them and pushing them into extreme poverty. The current legislation favours economically desirable migrants and throws the undesirables out of the system. Such policies lead to poverty, pathologies and exclusion. Exclusion, in turn, raises social resistance and creates resistance tactics. The events described in this paper attempt to connect action research with the fight against exclusion.

Keywords

Roma, action research, exclusion, poverty, homelessness, human rights, civil rights, difference, universality, policy, subject

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Notes on the Pedagogical Role of Non-Human Actors

Introduction

In Peter Watts' short story titled *Malak*, the main character is a machine endowed with artificial intelligence (Watts 2013: 335–353). It is not, however, an anthropomorphic robot driven by its behaviour, way of communication, or intentions, towards a maximum resemblance to a human being. Azrael, as the machine is called, seems to be as alien to human beings as possible. It is not a kind-hearted imitator, but a self-activated fighter, armed to the teeth and designed solely for the purpose of precisely eliminating its targets. It feels no compassion towards its victims or the collateral casualties who are killed in uncontrolled explosions or caught in the crossfire. The only measure of success is the execution of the set task, as calculated by a fine-tuned script – a highly accurate inventory of mayhem and destruction. The turning point in the career of this quasi-conscious war machine comes when experimental "ethics software" is installed into the device. Its combat statistics are expanded to include collateral damage, i.e. civilian deaths, which for some reason should be avoided. However, Watts' perspective is quite pessimistic. The digitally enhanced machine reports time and time again to its human command that the predicted number of unintended casualties is too great for an attack to pay off. Each time it receives the same response, which is to repeal the "ethical" directive and continue its attack. Simple arithmetic produces only one answer. Since the command overrides orders to protect the lives of innocents, the way to minimize losses is to turn against those orders.

While Watts' text remains for now within the realm of science fiction, it raises an important issue of technological development. More and more often the tools we actively use suggest certain options, enter into dialogue, and indicate preferred solutions. They cease to be passive instruments and become, at least to some extent, active partners in our activities (Ostrowicki 2013). This poses a new kind of challenge for educators. It is no longer just a question of how the new media and the underlying technology can be made tools in the process of educational interaction. It seems necessary to ask whether they themselves should not be the subject of some kind of educational intervention.

Popular culture abounds in various fantasies about computers reaching self-awareness. These are usually visions of gloom and doom, filled with a great deal

of fear. What if our own creations turn against us? Doesn't the success of creating a digital, fully functional mind herald the end of mankind at the same time? We seem to expect some revolutionary change in the world on an apocalyptic scale. Sometimes we fail to notice that the transformation of our relationship with machines has already begun and continues, step by step, with a qualitative change in our world and way of life.

Interactive being

A real digital "being" – intelligent and self-aware – is still a thing of the future. It is perhaps not even too distant and certainly conceivable. For years, however, we have been talking about the gradual personalisation of individual computer applications. With the help of appropriate animation techniques, the computer programming can obtain a more or less anthropomorphic visual identity. It is possible to interact with it by means of communication, whether text or voice. If properly programmed, the application can also be an excellent substitute for the human being, for example as a game partner, a person providing specific, simple information, or even conducting a teaching process. Goffman's sociology, with its strong emphasis on the face as the primary tool of social interaction, seems to have much to say here. Even if computer programs are not yet fully-fledged social actors, by giving them personal characteristics they can at least participate to a limited extent in various social interactions.

Slightly older users of office software packages may still remember Microsoft Office 97, one of the characteristic features of which was the appearance of "intelligent" agents, whose task was to help the user work with the program. They took the form of simple algorithms, based on probability, which offered convenient or alternative solutions to current tasks and presented new capabilities (compared to previous versions of the program). They were additionally enriched with an animated visualization, which communicated with the user through dialog boxes in a form similar to comic strip "bubbles". Suffice it to say that this enhancement was not entirely successful. The agent proved more irritating than useful. Nevertheless, it was an interesting attempt to introduce a more personal dimension to man-machine relations.

Similar types of technical solutions are also used in popular computer games. Well-designed artificial intelligence is intended to control the behaviour of fictitious characters in the game environment. Programs of this type are created by selecting one of the two possible approaches. They may strive to undertake actions that are deemed the most reasonable or be guided by maximizing the similarity of their results to those of a human player (Jaśkiewicz 2012: 100). Such programs – the so-called bots – are aimed at replacing people in the performance of certain tasks, so it is understandable that in their activities they should strive for the greatest possible similarity to humans. In the case of bots, we can usually also talk about a specific educational function. In simulating human behaviour, they are to enable the player to master the rules of the game, practice effective behaviours, and develop their own strategies of action. Their role here is mainly substitutive, i.e. they replace real people. This being said, it is perfectly conceiv-

able that there will be situations when they are virtually indistinguishable. The context in which interactions with users or programmes take place is of decisive importance here. The nature of the virtual environment may, on the one hand, facilitate their identification – for example by clearly identifying (graphically or textually) avatars run by computer programs – and, on the other hand, the gameplay's mechanics and lack of appropriate labelling may make them indistinguishable from human players.

This type of human substitution by a machine has also been applied in pedagogy. Since the 1980s, attempts have been made to use similar programs based on reactive algorithms in educational processes (Wang 2013). The educational agent was to perform a function similar to that of an individual teacher. Equipped with complex mechanisms of diagnosing the state of knowledge of the student and recognizing his or her learning style, they were to actively support and direct the teaching process, increasing its effectiveness. The idea itself, leaving aside the question of its efficacy, has major consequences. The machine and its software are no longer just tools in the hands of the student. It is to become their active partner not only in the transfer of knowledge, but also in the evaluation of the learning outcomes. To some extent, it is to take control of the process in place of another human being. Not only the formal aspect of this relationship is essential. The assignment of tasks and the evaluation of their performance could be done equally well without the help of the agent's anthropomorphic visualization. However, the importance of emotional and motivational relations between the teacher and the student was recognised. A computer agent, in order to fulfil its task effectively, had to produce a proper effect also at the affective level. Unable to make a real personal commitment, it should at least imitate it adequately (Wang 2013: 14–16). To achieve this, the program could use its own situation assessment mechanisms – measuring the response time of the human partner, evaluating changes in their mode of action, and with the help of external hardware – also monitoring subtle physiological changes (Soliman, Guetl 2013: 828).

Educational agents are to some extent autonomous, in their own (limited) way, intelligent programmes guided by a predefined set of objectives. Available tools – such as reading user feedback, diagnosing progress and learning patterns – are designed to implement them more effectively.

The operation of interactive educational programmes, although essentially purely mechanical, is not free from a number of theoretical assumptions about how the human mind works. The model based on stimulus, response and reinforcement is deeply rooted in behavioural theory and the concept of Norman Crowder's programmed instruction (after: Meger 2013: 40–45). Nowadays, they reject simplified, linear patterns of knowledge transfer, replacing them with branching models, which often allow for a considerable degree of freedom in the choice of material to be learnt. Moreover, learning with this type of software has become quite popular in some fields, such as foreign language teaching (Meger 2013). This is also due to the widespread use of personal computers and mobile devices of all kinds allowing access to the Internet. A user-friendly program is oftentimes cheaper to use than paying for a course with a real teacher. It allows for more flexibility in terms of the amount of time spent on studying and also significantly reduces the stress we are exposed to when we come into contact with others. The program can

evaluate the accuracy of the work we have done, describe the progress we have made, but we don't have to worry about its anger, loss of patience or disappointment. In the worst case scenario, the program will calmly advise us to review the material again and will prepare the next series of exercises.

Despite some criticism that educational software faces (arising, for example, from its behavioural origins), we are undoubtedly dealing with a qualitative change not only in education, but also in the way the human being functions. The interactive machine becomes a partner for work, leisure and learning. Not only does it suggest the right solutions to be adopted in a given situation, but it also evaluates its human partner, points out their wrong moves or even challenges them – for example, within the framework of the game being played. Thanks to the developing technology, the available software is able to accomplish all these goals increasingly better – not only in terms of simple efficiency, but also in terms of imitating the human being.

Multilayer reality

The ever-increasing frequency and intensity of people's interactions with digital actors is a natural consequence of what is sometimes referred to as cyborgization. This is what we call the phenomenon of the ever deeper coexistence of man and machine (Klichowski, Przybyła 2013: 143–144). A line of development can be drawn from the abacus to the personal computer. In the same sense, the first alphabetic writing system is the ancestor of every interactive computer program we may work with today. Both the abacus and the calculator, as well as the laptop used in our work, are tools supporting our cognitive abilities. They can be for the mind exactly the same as a hammer for our hand, i.e. the reinforcement of certain existing skills or aptitudes or their extension. However, you can drive the nails with your fist just as you can make complicated statistical calculations in your head. In both cases, however, there is a good chance of achieving lamentable results.

The advancing cyborgization is a widespread phenomenon. The degree to which new technological solutions determine our lives is growing to such an extent that without a number of technical amenities, ordinary day-to-day social functioning seems virtually impossible. A notable example is the mobile phone. Having it and carrying it with you all the time has become the default way of working in our everyday environment. Nowadays, it is no longer used only for voice communication. Together with other mobile devices, it transforms into a platform for work and entertainment. Telephones are replacing classical notebooks, diaries, notepads, portable radios and televisions. You can use them to read books in the form of e-books or play games of ever higher quality. More importantly, these devices can also effectively expand our perception of reality. If you get lost in a new city, a simple phone with Internet access can help you find the right address. Having doubts about the choice of restaurants, we can instantly check the reviews on the places nearby on the web. When we are waiting for a meal, a few hand movements will allow us to check our bank account balance and in the meantime pay our bills. We can also use our phone instead of our payment card.

However, this simple list of available features – of which there are many, many more – has an additional aspect that is often overlooked in everyday thinking. The electronic devices we carry or wear allow us to perform a whole set of effective actions that relate to a completely different level of reality while having their most physical consequences. This fusion of virtual and physical dimensions is commonly referred to as augmented reality. In short, it means that the world available to our senses is being expanded in real time with an appropriate, artificially generated, reactive plane (Klichowski, Przybyła 2013: 147). The key to augmented reality is its interactive nature. With new technological means, man is able to take symbolic action with entirely real, tangible consequences. To be more precise, interactivity is a way of mediating the human being in an artificially generated virtual space – functioning in it under certain predefined conditions (Ostrowicki 2009: 58). This relationship is also of a feedback nature. While, thanks to appropriate devices, we are able to exert our influence on a new level of reality, we ourselves become an object of influence of the virtual space.

The effect of the coexistence of the physical world and its digital extension is what Kazimierz Korab tends to call "the real world" (Korab 2010: 24). As he points out, there is a huge difference between what we call reality (i.e. a certain intersubjective form of existence external to us) and what is available to us after we have experienced contact with the virtual world. The experience of mediation in a higher-order reality permanently obscures the previously available world, replacing it with a completely new quality. It is not without reason that virtual space is defined here as a reality of a higher order. Firstly, it is secondary to the physical world. It is manufactured by means of appropriate hardware, but is in no sense equivalent to it. On the contrary, it is a symbolic space, constructed through related systems of meanings. Although its existence is intentional and secondary, it is characterized by interactivity – it allows its participants to undertake effective actions (Gurczyński 2013: 124). Secondly, a person who comes into contact with virtual reality may find it to be a space for a fuller existence, a place more realistic than the physical world (Gurczyński 2013: 24). Things previously impossible become suddenly available, the access to information seems to be almost infinite, and the very consciousness seems to be free from material limitations.

The virtual world holds a powerful attraction for users. Not only does it change the way we perceive the world around us, it also, through its appeal, prompts us to engage more profoundly in the digital environment and its hybrids. Theorists used to talk in this context about the phenomenon of immersion, i.e. the process of sinking deeper into virtual space; about a specific redirection of one's attention and the transfer of activity within its framework (Ostrowicki 2007a: 539–540). This experience also translates into the creation of a specific, emotional relationship with respect to the alternative plane of one's own existence. The virtual is no longer just a tool in our hands – it is becoming a very real alternative to the current way of life, which with time is gaining acceptance as something natural. Michał Ostrowicki goes so far as to say that it can be compared to breathing, which is one of the basic functions of our body. Without contact with the virtual world, it seems suddenly impossible (or at least very difficult) to perform the most basic tasks, and our very existence loses its current nature (Ostrowicki 2007a: 549). The real world, i.e. a hybrid combination of the intersubjective reality and the virtual world, is

considered to be the starting point of the contemporary human condition, the fundamental plane of its existence and day-to-day functioning.

Implications of the existence between two worlds

As I said earlier, there is a certain affinity between the abacus and the computer. We are still inclined to think of computer programs as thoughtless tools, which are merely capable of the passive execution of commands – only that they are highly complex and sophisticated. However, let us consider the following issue. For many Internet users, the primary tool for finding information remains the online search engine (mostly Google). The search engine, in turn, for the purpose creating a page directory, uses programs called bots that are autonomous to some extent. They search the web relentlessly, indexing the pages – which allows the search engine to function efficiently. In doing so, they are guided by an appropriate set of mechanisms, with which they were previously equipped by programmers. They are not "intelligent" in any sense, they do not have self-awareness. They are far from artificial intelligence as depicted in films or science fiction novels. However, their role cannot be underestimated. It is these bots that structure countless information resources, ultimately contributing to the results we obtain by entering a specific query into the Google search box. In a sense, it is these bots that control a significant part of the mechanisms of obtaining information in our culture. They may not be self-aware, but it is difficult to deny them power and influence on our lives.

The bots are not visible to the average network user. However, their function would make them quite important actors in social life. Such programs function across the entire network – they populate it in countless numbers, subtly directing various activities, taking care of user security and convenience. At the same time, they take more and more control over user behaviour. Even a simple spam filter, which is used today in most mailboxes, can significantly determine which type of correspondence we will receive and which will be deemed undesirable. Of course, there is no reason to be concerned about this, as long as the filter actually works and stops e-mails offering cheap medicines of suspicious origin or letters from fraudsters who allegedly want to share their assets. But what if its algorithms were changed and instead of junk mail it started to censor information about important social campaigns or even private correspondence which, when scanned, would contain words considered inappropriate?

The Internet is usually perceived as a medium, i.e. as a means of communication. In this respect, it is indeed the successor to a newspaper, radio or television. However, its interactivity, immersive character and ability to seamlessly intertwine with reality, give it a completely new quality. It still remains a communication tool, but it offers much greater possibilities, which were previously difficult to imagine. This is very well illustrated by the research on virtual computer environments for online games – simulations of the world in which users (players) are equipped with appropriate digital bodies – so-called avatars – functioning in a fictitious space and capable of taking action in it and modifying it according to pre-established rules. A person in such circumstances can make contact with

others on several levels: in their own name – i.e. as if they were in a real life situation; they can also speak from the avatar level, i.e. by referring to the actions of their digital body, putting them in the foreground; finally they can also immerse themselves fully and behave as if everything in which they participate were completely real (Szeja 2004: 111–115).

A player immersed in a virtual environment also has the opportunity to interact not only with avatars controlled by other people. All kinds of bots, also equipped with digitally generated bodies, can function within this realm. In some games it is possible to engage in conversations with them, cooperate in the performance of tasks, issue instructions to them, etc. A properly programmed bot can also effectively replace a human being by controlling his or her avatar as instructed by its owner.

It is not necessary to simulate the physical reality in order to have this type of contact. The network is a "natural" environment for all kinds of autonomous agents; they can operate freely within it, carrying out the tasks for which they have been designed. A large number of bots operate, for example, on popular social networking sites such as Facebook or Twitter, impersonating (sometimes quite effectively) real users. Contact with a bot in a game environment or working with the help of an educational agent is usually a straightforward and transparent situation. The user is, in most circumstances, aware that they are interacting with a machine. In the case of programs running freely on the Internet – in discussion lists, online forums, social networking sites – this transparency is gradually disappearing, to the point where the software agent can manage our actions in a completely invisible and subtle way, so that we do not even think that we ourselves may be in any way influenced by it.

Still, the entire network – or rather the functioning within it – is much more complex. The interactions to which the user is subject cannot be characterized only as the sum of effects caused by particular programs with which they come into contact. By its very nature, we are dealing with an open space, full of interdependencies subject to strong dynamics. However, there is no denying that there have been changes in thinking and action as a result of engaging with the network itself and with the other players present. One could say that a human being succumbs to certain programming carried out by their own creations (Ostrowicki 2009: 66). Thus, due to the subject matter, we are dealing with a situation of great significance for the pedagogical sciences, the consequences of which are still not entirely clear to us. This is probably the cause of some of the concern and of the alarming tone of some of the commentators on current technological developments.

The way forward for education

Teachers have already learned to reap the benefits of technological progress and nearly universal Internet access. All kinds of e-learning courses enjoy great popularity, and there is a growing range of different educational programmes available, some of which serve only to support the teaching process, while others, using the pedagogical agents described above, are intended to be used indepen-

dently by the user as self-study resources. Not only is technological support for the teaching and learning process becoming standard practice, but it is actually expected. Even in the "typical" context of a teacher, a specific venue and a group of students, the use of appropriate multimedia tools or networking is becoming increasingly important (Jackson, Helms 2011: 294).

An additional positive aspect of the changes in this respect is the extension of the scope in which students themselves can participate in the educational process. By broadening communication opportunities and increasing the availability of alternative sources of knowledge, teaching takes on the character of building knowledge together, slowly moving away from a model based on one-way communication. Such processes are nowadays not only the domain of the educational sector, but also the way the Internet works in general – or at least in its areas based on Web 2.0 (DePietro 2013: 4). It is fair to say that we are living at a time when education is facing one of its greatest challenges, but also one of its greatest opportunities. A completely different issue, however, is whether it is able to make good use of those opportunities in the current state of affairs.

As I mentioned earlier, we are increasingly the ones who are conditioned by machines. Our activities begin to run according to the protocols and recommendations given to us by the computer software. Bots, in the form of web crawlers, have a strong impact on our access to information. This overlaps with the process of the gradual hybridization (cyborgization) of the human being as such. One could risk saying that even proto-intelligence, which is currently available to machines, is capable of controlling many spheres of our lives. Further technological development, research into neural networks and other learning systems, will soon increase this impact. The question of whether a teacher is necessary for the educational process is already pertinent, be it as a source of knowledge or as a facilitator of the learning process. As the focus shifts to multimedia use and the application of information exchange networks, there is also a colossal change in the structure of the educational relationship. If students or pupils are looking at the presentation displayed using the overhead projector and are taking down this information as part of their notes, then who is the teacher? The multimedia, which are to serve only as auxiliary materials, are turning the educator into an instrument. He or she falls out of the leading role and even gradually ceases to be real. In a sense, it is the medium that becomes reality, and the human is a simulative addition to it (Leopard 2014: 87).

The acquisition of control by technological devices is all the more challenging the wider the scale of this process. A school lesson or an academic lecture in which media support becomes more important than a sound relationship between teachers and their students is problematic. On a global scale, we are faced with an uncontrolled process the impact of which is difficult to predict. However, the problem does not lie in the fact that the role of technological solutions is increasing, as this is a natural development. Just as the invention of writing changed social life fundamentally by gradually diminishing the role of oral communication (Hopfinger 2010: 31), so too do the new media modify our way of life. The real challenge seems to be to find a space for ourselves in a rapidly changing system. We are averse to the idea that "anyone" can act as a teacher – we expect such an individual to have the right attitude, demonstrate adequate competence

and follow ethical principles. In the case of software that serves the same purpose, we do not set similar requirements, evaluating it rather on the grounds of efficiency. However, everything seems to indicate that the future of pedagogy is inseparably connected with computer programs that carry out specific practical tasks. The way they will address them is therefore becoming a major new ethical issue (Bober 2008: 58).

Today, pedagogical knowledge must focus on more than just working with a real person. It is equally important that it provides solutions that will allow the design and transformation of both the web and the software. Programming knowledge is not sufficient to create appropriate services in this area, it is also necessary to be able to properly diagnose needs and objectives, including, first and foremost, demonstrating familiarity with learning processes and broad competences in the field of the social sciences. Perhaps sooner than we think, we will find ourselves in a situation where there is a great demand for teachers with superb IT skills who will be able to successfully combine their abilities in both fields. However, it poses a challenge not only in terms of vocational training, but also in terms of a change requiring a redefinition of the role of one's profession and its place in society. The more advanced the software deployed in this area becomes, the closer it gets to the status of genuine artificial intelligence, and the stronger the response it will demand of us. This will continue right up to the point where the individual computer programs will be recognized as both the subjects and the objects of pedagogical intervention.

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Summary

Notes on the Pedagogical Role of Non-Human Actors

The aim of the text is to highlight the growing role of autonomous computer software in the decision-making and cognitive processes, especially in the field of education. This paper discusses the subject of the relationship of education, virtual reality and the contact with the advanced computer programs, which are of even greater importance in determining the goals of human activity. The author argues that advanced and complex software has become an actor itself in educational relationships – as important as any human being.

Keywords

pedagogy, socialization, virtual reality, artificial intelligence