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“Unnatural medicine” – Ethical and legal considerations of gene therapy and embryonic stem cells in the United States and Europe

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Abstract: *Medicine has developed at an ever increasing pace in the last decades. Things once thought impossible are now a reality. This includes gene therapy and stem cell therapy. Over the years, various tools for genetic alterations have been developed, ranging from viral vectors to special zinc-finger proteins to CRISPR-Cas genome editing. Even though in many jurisdictions, gene therapy is approved and used, germline gene therapy and research regarding embryonic stem cells is normally forbidden. However, the successful application of large part of gene therapy rests on the ability to use embryonic stem cells. The ban on embryo creation for research and their use for experiments are based on the notion that these embryos possess rights. I, however, am on the opinion that as the legislation protecting embryos was meant to protect life to be born and as experimental embryos are not to be born, these embryos should not necessarily be considered as carriers of rights and research should therefore be allowed to be conducted. Gene therapy itself has been said to create the danger of eugenics, medical risks are high. I agree with the need to prevent eugenic practices but believe that this can be done via oversight mechanisms better than through outright ban on several forms of gene therapy that would cause suffering. Gene therapy does have inherent medical risks and great care must be taken in the application of gene therapy.*

Keywords: *Balance of rights, Embryonic stem cells, Eugenics, Gene therapy, Right to life and health.*

INTRODUCTION

Medicine has developed at an exponential rate during the last hundred years. Organ transplants, laparoscopic surgery, antibiotics, radiotherapy and targeted medicine, among others, have increased the positive outcome of medical procedures, improved prognosis of health issues and, more generally, improved both the quality of life and average life expectancy. Medical technologies have reduced infant mortality, helped to eradicate smallpox and control other epidemics, discover internal injuries and illnesses without the need for a high-risk surgery.

As medical technology develops, it moves further away from the beginnings of medicine, the traditional ways of treating. New ways that are found to be more effective and less dangerous than traditional methods become widespread in practice, sidelining and eventually even completely pushing the more traditional treatments out of the practice. The refinement of active substances, pharmacological analyses of drugs, development of non-invasive technologies have reduced traditional medical practices to the fringes of medicine.

Undoubtedly, the technological advances in medical field have been extremely beneficial and modern life could not be imagined without modern medicine. Never before have humans been able to treat and cure so many ailments and injuries as today. However, there are voices that consider modern medicine to be too technological, too chemical, too much removed from nature, from traditional medicine. Recent advances in medicine and biotechnological fields – the discovery of stem cells (including embryonic stem cells), the development of genetics and methods of inducing changes in the DNA, the ability to express proteins of another species in a cell, to create chimeras – have opened a new front in medicine. Although these technologies are still rather young and need significant refinement before becoming a part of standard medical practice, they forecast a dawn of an era where each person could enjoy specific effective approaches accustomed to the needs and biology of the patient. Nevertheless, these technologies, as previously not even thought of as

conceivable, can appear as from a science fiction novel. These novel approaches require thorough understanding of the laws of nature and high skill in manipulating these principles to create a truly effective remedy to medical conditions. As these methods involve high amount of technology and require technological manipulation of biological systems that rarely, if ever, occur in nature, these methods are sometimes seen as even more manifestly unnatural than current widespread practices. As a result, they have received a lot of backlash from different groups of society, especially from religious groups. These technologies are sometimes seen as heretic, as attempts to play God. The mentioned technologies have, for various reasons, employing various arguments, been in the focus of attention of wide segments of society, producing different viewpoints amongst people, affecting the legal background of medical and research fields, affecting the course of research and treatment practices of physicians.

Undoubtedly, morals, ethics and law are intertwined.¹ As medicine and biotechnological research are highly dependent on law, they too are intertwined with the ethical dilemmas.² The purpose of this paper is to examine the legal status, public perception and moral and ethical issues that contribute to the legal regimes of these fields.

TECHNOLOGY

In order to determine the ethical consequences of biotechnology regulation for this novel therapy form, it is imperative to first analyse the technologies themselves. If technologies are left untouched, important aspects will likely be omitted from ethical analysis. For this reason, it is necessary to outline the technology used in these therapy forms. As the therapy forms discussed here are often interconnected, they will be subsumed under single term: gene therapy, although often, stem cell therapy, pharmacology and surgery are necessary to make it functional.

Gene therapy

Gene therapy means changing the genetic makeup of the patient. This can take different forms. It is possible to 'switch off' a harmful gene, reduce the impact of an overactive gene, increase the impact of an underactive gene, fix a fault in a gene or introducing an absent gene.

Knockout technology

Knockout technology involves "switching off" a gene that is harmful. It is done either by taking out the entire gene or tampering with it to make it inoperational. In order to introduce a knockout, a DNA construct with the disrupted allele is transfected into embryonic stem cells^{3,4}. This introduced DNA is separate from the cell's own DNA. However, through the randomly occurring process of homologous recombination, where strands of homologous (similar) DNA molecules are exchanged⁵, the modified allele can enter into the embryonic stem cell genome. Followingly, embryonic stem cells that contain the allele are selected. This is accomplished through marker genes

¹ Kerikmäe, T.; Hamulak, O.; Chochia, A. (2016). A Historical Study of Contemporary Human Rights: Deviation or Extinction? *Acta Baltica Historiae et Philosophiae Scientiarum*, 4 (2), 98–115.

² Kerikmäe, T.; Nyman-Metcalf, K. (2012). Less is more or more is more? Revisiting universality of human rights. *International and Comparative Law Review*, 12 (1), 35–51.

³ Lodish, H., et al. (2013). *Molecular Cell Biology*. 7th ed. New York: W. H. Freeman and Company; England: Macmillan Higher Education (international edition), p 213.

⁴ Snouwaert, J. N., et al., (1992), An Animal Model for Cystic Fibrosis Made by Gene Targeting. *Science*, Vol. 257, Iss. 5073, pp 1083-1088. Retrieved from: <http://science.sciencemag.org/content/257/5073/1083.long> (07.01.18)

⁵ *Supra nota* 1, p 156.

that were inserted to the transfected DNA sequence, allowing to selectively grow transfected cells⁶. When these transfected stem cells are grown into large enough quantity, they are injected into the embryo. The progeny to be born is a chimera – contains one's own original cells as well as cells carrying introduced sequence⁷. This would reduce the impact of the harmful gene. However, it must be remembered that the effect is only partial. In addition, this technology is not, as of now, used on humans but is mainly applied in mice to study gene functions. It is currently rather unconceivable to be used to delete genes responsible for genetic illnesses, however, I considered this technique still worth analysing due to the ability of technological development to potentially overcome technical obstacles.

However, traditional knockout technology carries an inherent risk that the deleted gene might prove necessary in early development, possibly causing fetal death or malformation. Therefore, a technology of altering gene function in somatic cells in specific tissues in specific times has been devised, called conditional knockout. The following technology is also mainly used in mice but unlike traditional knockout, it is conceivably useable on humans. The conditional knockout technology is based on loxP-Cre recombination system, where loxP refers to sites for the site-specific DNA recombination and Cre refers to the enzyme necessary for the process⁸. Cre is an enzyme that catalyses the recombination of the DNA sequence between loxP sites⁹, enabling to enter defective sequences. Expression of this enzyme can be put under the control of a promoter specific for the cell type¹⁰ or developmental stage. This allows to activate the enzyme at a specific place and time, only allowing the recombination to occur in selected conditions and to introduce a highly selectable knockout effect. Normally, using this technology in mice involves creating specialized loxP-Cre mice, but recent advances in introducing DNA sequences into targeted sites may allow to apply this system in humans.

Gene silencing

Unlike knockout technologies that are involved with the elimination of the target gene from the genome, gene silencing reduces the expression of the target gene, meaning that the production of the gene product is reduced. This provides the opportunity of reversing the disease-producing effects of faulty genes. This approach involves using one of several techniques, some of which have become useable in humans.

RNA Interference (RNAi) is one of the most viable methods of altering gene expression. Ribonucleic acid (RNA) is a nucleic acid, a polymer of ribonucleotides that has several roles. Messenger RNA (mRNA) acts as an intermediate in the process of protein synthesis based on DNA sequence, ribosome RNAs (rRNAs) and transfer RNAs (tRNAs) are essential components of ribosomes and necessary for protein synthesis¹¹. During gene expression – when proteins are synthesized on the basis of the DNA sequence – DNA is first transcribed into a complementary mRNA sequence. Thereafter, the translation of the mRNA into a polypeptide sequence serving as the protein backbone occurs in the ribosomes. Several smaller RNAs have regulatory effects. Such are, for example, small inhibitory RNAs (siRNAs). They are formed when double stranded RNA is cut, or cleaved, into small segments by an enzyme called Dicer¹². RISC protein complex causes the binding (hybridization) of siRNA to the corresponding sequence of mRNA and the cleavage

⁶ *Supra nota* 1, p 213.

⁷ *Supra nota* 1, p 213.

⁸ *Supra nota* 1, p 214.

⁹ *Supra nota* 1, p 214.

¹⁰ *Supra nota* 1, p 214.

¹¹ *Supra nota* 1, p 116.

¹² *Supra nota* 1, p 216.

and destruction of the siRNA-mRNA hybrid, preventing the translation of the mRNA into a protein¹³. This process allows very specific targeting of gene expression, without the necessity of disrupting the underlying gene. This procedure can be done in living organisms by lentivirus-mediated introduction of an artificial gene containing sequences that facilitate the synthesis of short hairpin RNAs (shRNAs) that will be transformed to siRNAs¹⁴.

Other RNA silencing mechanisms also exist. A similar mechanism to RNAi occurs through micro-RNAs (miRNAs). miRNAs are formed through processing of their precursors to very short sequences that bind to the three prime untranslated region (3'UTR) of the mRNA sequence they target¹⁵. They affect translation occurrence or can even cause the degradation of the mRNA similarly to RNAi¹⁶.

One such mechanism is using ribozymes which are catalytic RNAs that have functional similarities to enzymes¹⁷. It is conceivable to use ribozymes, some of which have the ability to bind and cleave mRNA sequences, to selectively inhibit gene expression^{18,19}. Another method of expression inhibition is using triplex-forming oligonucleotides²⁰.

Genome editing

Mutations are divided into three classes by function: harmful, useful and harmless. While often, the mutations are harmful, there are occasions where they can be a useful tool. For instance, if a target gene has a point mutation (mutation of a single base pair) that alters the function of the gene and causes illness, a targeted mutation of that specific base pair to reintroduce the original base pair can be used. One good method for such induction is using triplex-forming oligonucleotides that can site-specifically bind to a mutated sequence in the DNA and correct it²¹.

Another method for editing the genome could be specially designed zinc-finger proteins that have the ability to cleave DNA at specific, predetermined sites, also making knockout technology use possible through the ability to induce recombination²².

CRISPR-Cas system is a molecular system that could be roughly thought of as a bacterial immune system – it adapts to foreign DNA and cleaves it²³. CRISPR stands for 'clustered regularly interspaced short palindromic repeats' and Cas stands for 'CRISPR-associated proteins'²⁴. The effect is achieved when the target gene is inserted into CRISPR locus – this results in the transcription of

¹³ *Supra nota* 1, pp 216-217.

¹⁴ *Supra nota* 1, pp 217-218.

¹⁵ *Supra nota* 1, p 1143.

¹⁶ *Supra nota* 1, p 1143.

¹⁷ *Supra nota* 1, p 123.

¹⁸ Khan, A. U., (2006), Ribozyme: A Clinical Tool. *Clinica Chimica Acta*, Vol 367, pp 20-27, pp 20-21, 24.

Accessed at: <http://www.sciencedirect.com/science/article/pii/S0009898105006960?via%3Dihub> (28.12.17)

¹⁹ Yuan Y, Hwang, E.-S., Altman, S., (1992), Targeted cleavage of mRNA by human RNase P. *Proc. Natl. Acad. Sci. USA*, Vol. 89, pp 8006-8010. Retrieved from PubMed:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC49844/> (28.12.17)

²⁰ Guntaka, R. V., Varma, B. R., Weber, K. T., (2003), Triplex-forming oligonucleotides as modulators of gene expression. *The International Journal of Biochemistry and Cell Biology*, Vol 35, pp 22-31, p 27. Accessed at: <http://www.sciencedirect.com/science/article/pii/S1357272502001656?via%3Dihub> (28.12.17)

²¹ *Ibid.*, p 26.

²² Papworth, M., Kolasinska, P., Minczuk, M., (2006), Designer zinc-finger proteins and their applications. *Gene*, Vol. 366, Iss. 1, pp 27-38, p 31. Accessed at:

<http://www.sciencedirect.com/science/article/pii/S0378111905005731?via%3Dihub> (28.12.17)

²³ Barrangou, R., (2015), Diversity of CRISPR-Cas immune systems and molecular machines. *Genome Biology*, Vol. 16, pp 247-257, pp 247-248. Accessed at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4638107/> (28.12.17)

²⁴ *Ibid.*, p 247.

specific CRISPR spacers that are transformed to specific CRISPR RNAs (crRNAs)²⁵. These distinct crRNAs pair with trans-activating CRISPR RNA (tracrRNA) and lead the complex to the targeted sequence where the Cas9 cleaves the target DNA sequence^{26,27}. Fusing the specific crRNA with the tracrRNA allows to have a programmable genetic tool for targeting specific sequences precisely^{28,29}. This enables to make specific changes into the person's genome and opens a wide array of opportunities to fix harmful ailments. Recently, the system has been used to edit human genome in embryos³⁰.

Increasing expression

There are several ways of increasing expression of a gene. If the gene has a repressor or is influenced by other epigenetic means, this can be influenced by targeting the repressor by previously mentioned ways. There is also the opportunity of using specially designed zinc-finger proteins that can promote the expression of a gene when binding to it³¹.

Transgenics

Transgenics refers to the introduction of a gene from another organism to the genome of the host organism. There are various ways entering a foreign gene into a cell. The process of foreign gene insertion – transfection, can be done via electroporation (subjecting cells to a high-voltage current, making cell membrane permeable for DNA), using liposomes (fuse with cell membrane and release their contents into cell), entering a plasmid vector into the cell, using viruses as vectors carrying the desired sequence, it is also possible to use the aforementioned CRISPR-Cas9 system together with lentiviral vectors. There is also the possibility of using pronuclear injection for the purpose of embryo altering and research is conducted for using transposable elements (transposons) for genetic engineering purposes.

LEGAL AND ETHICAL PERSPECTIVE

Having established the baseline knowledge of the technologies used for gene and stem cell therapy, we can now start analyzing the relevant legislation. I shall proceed by reviewing literature and examining the legislation. I have chosen to focus on two of the most vivid biotechnological arenas – the United States and the European Union. As many applications of gene therapy and stem cell therapy are highly dependent on embryonal stem cell technologies, embryonic stem cells need to be thoroughly discussed if we wish to talk about actual widespread application of gene therapy.

Several of the mentioned technologies can be used in the embryonic state of development of the person, including the first usages of CRISPR-Cas9 technology this year. Moreover, certain

²⁵Barrangou, R., (2012), RNA-mediated programmable DNA cleavage. *Nature Biotechnology*, Vol. 30, No. 9, pp 836-838, p 837. Accessed at: <https://www.nature.com/articles/nbt.2357.pdf> (29.12.17)

²⁶*Ibid.*, p 837.

²⁷Jinek, M., *et al.*, (2012), A Programmable Dual-RNA-Guided DNA Endonuclease in Adaptive Bacterial Immunity. *Science*, Vol. 337, pp 816-821, pp 816, 818. Accessed at: <http://science.sciencemag.org/content/337/6096/816/tab-pdf> (29.12.17)

²⁸*Supra nota* 23, pp 837-838.

²⁹*Supra nota* 25, pp 819-820.

³⁰Tang, L., *et al.*, (2017), CRISPR/Cas9-mediated gene editing in human zygotes using Cas9 protein. *Molecular Genetics and Genomics*, Vol. 292, Iss. 3, pp 525-533. Accessed at: <https://link.springer.com/article/10.1007%2Fs00438-017-1299-z> (29.12.17)

³¹*Supra nota* 20, pp 27-38.

application such as oncolytic stem cell therapy and tissue and organ regeneration rely on the use of stem cells, for which toti- and pluripotent embryonic stem cells are one of the most preferred sources due to their ability to differentiate into any cell type in the body. For this reason, it is necessary to review embryology-related legislation.

Most states in the United States of America have passed legal acts related to embryology³². Some states allow limited research to be conducted on embryos, but some have banned embryo research in complete³³. However, the terminology related to the stages of development, more specifically, the beginning of embryo, has not always been very clear³⁴. Research on embryos involves research into increasing IVF efficiency, underlying principles of developmental biology, improving prenatal diagnostics in early stages and offering gene therapy applications³⁵. Soon after the first successful IVF treatments, the public concerns related to the medical experimentation with embryonic tissues led to the establishment of the first Regulations on the matter in the United States³⁶. This subjected any research in the field of IVF to the approval of Ethical Advisory Board which did not yet exist, cutting government funding for the research^{37,38}. Kiessling has pointed out that the lack of political will by scientists to discuss female fertility and IVF during the 1980s and the lack of terminology refinement has contributed to the mistrust of stem cell research³⁹. This has also been noted for Australia⁴⁰. In 1993, however, the ban was lifted^{41,42}. A panel was created for evaluation of research grant proposals, with all potential research utilising preimplantation embryos being subjected to additional reviewing by *ad hoc* committees⁴³, however, any federal funding was vetoed by President Clinton and the topic had not received further argumentative consideration by 2004⁴⁴. The discovery associated with first successful cloning of a mammal – that all somatic cells contain enough information for the development of an entire organism – led to discussions of the potentials of stem cell therapies that also concerned embryo research⁴⁵. After extensive discussions during the Bush administration, the federal funding for the research of embryonic stem cells of human origin was banned, with the only exception of cell lines already in existence⁴⁶. In the end of the article, Kiessling argues that parthenogenetic material could not be considered embryonic due

³²Kiessling, A. A., (2004), What is an embryo? *Conn. L. Rev.*, Vol. 36, Iss. 4, pp 1051-1092, pp 1067-1068.

Retrieved from HeinOnline:

http://heinonline.org/HOL/Page?handle=hein.journals/conlr36&div=35&start_page=1051&collection=journals&set_as_cursor=0&men_tab=srchresults (07.01.18)

³³Feiler, C. L., (1998), Human Embryo Experimentation: Regulation and Relative Rights. *Fordham Law Review*, Vol. 66, Iss. 6, pp 2435-2470, p 2462. Retrieved from HeinOnline:

http://heinonline.org/HOL/Page?handle=hein.journals/flr66&div=122&start_page=2435&collection=journals&set_as_cursor=0&men_tab=srchresults (07.01.18)

³⁴*Supra nota* 30, pp 1069-1072.

³⁵*Supra nota* 31, p 2436.

³⁶*Supra nota* 30, p 1073.

³⁷*Supra nota* 30, p 1073-1074.

³⁸*Supra nota* 31, 2459.

³⁹*Supra nota* 30, p 1074.

⁴⁰Nicol, D., Chalmers, D., Gogarty, B., (2002), Regulating Biomedical Advances: Embryonic Stem Cell Research. *Macquarie Law Journal*, Vol. 2, pp 31-60, pp 40-41. Retrieved from HeinOnline:

http://heinonline.org/HOL/Page?handle=hein.journals/macq2&div=6&start_page=31&collection=journals&set_as_cursor=0&men_tab=srchresults (07.01.18)

⁴¹*Supra nota* 30, pp 1074-1075.

⁴²*Supra nota* 31, 2459.

⁴³*Supra nota* 30, pp 1075-1077.

⁴⁴*Supra nota* 30, pp 1077-1078.

⁴⁵*Supra nota* 30, pp 1079-1080.

⁴⁶*Supra nota* 30, pp 1085-1087.

to its sole purpose being the use for the creation of pluripotent stem cells⁴⁷. However, such a view could lead to two interesting conclusions. Firstly, from a conservative viewpoint, it would be possible to argue that as nothing prevents parthenogenetic implantation to be carried out, despite it not being currently active research direction, it should be allocated a similar status with embryos as it could essentially still become a forming human being, albeit with some necessary modifications. Secondly, from a more liberal viewpoint, aborted embryos as well as embryos left over from IVF treatment as well as embryos specifically created for research are also not meant to be implanted to the uterus, leading to a hypothesis that they should not be subsumed under the term 'embryo' either – a conclusion which would open them up from the federal ban on research funding.

Christine L. Feiler has, in her article, brought out a decision by the United States Supreme Court in the case *Roe v. Wade*, where the Supreme Court held in an abortion legislation debate that the right of protection of fetal life must be balanced by the rights of the woman⁴⁸. Similar discussions have occurred in Australia⁴⁹. The balance of rights becomes extremely relevant in the discussion of the entire topic. Feiler brings out that the definition and legal status of embryos have been variable in US court practice, varying from being considered property to being considered children to being considered in between, illustrating this point with cases *York v. Jones*, *Davis v. Davis*, *Kass v. Kass*⁵⁰. Feiler argues that as human entities, embryos are highly valuable and must be protected as incapacitated humans, having the right not to be created, research performed on them nor them being destroyed, considering the reasoning of the lack of qualities of sentience a dangerous prospect for other incapacitated members of society⁵¹.

I agree with the premise that human embryos are highly valuable. However, I do not consent with the rest of the statement. First point of objection rises when the right not to be created is discussed. Before an embryo is created, the embryo as the carrier of this proposed right does not exist. If the carrier of the rights does not exist, the carrier's rights cannot be violated. Of course, it can be argued that as the embryo is created, it has acquired such rights *ex post facto*. However, creation of the embryo is also the creation of the embryo's rights. A physical entity cannot be logically considered to have had rights before it existed.

Secondly, my opposition relates to the equation of embryos developed from conception and IVF treatment to those created solely for research purposes. The underlying reason for introducing legislation protecting the embryo in the first place was to protect unborn human life – to protect those who will eventually be born as children from damage. This is the main reason why fetal and embryonal rights issues arose. It is adamantly clear that human life to be born must be actively protected. However, embryos created for research purposes are not human life to be born – they are never meant to be born in the first place, they will not acquire the status as the members of the society. The fundamental aspect that the author has left without notice is gestation. Gestation provides embryos the opportunity to develop into humans. The environment in the uterus, the existence of placenta, hormonal balance and many other factors are necessary for the development of a child. The incapacitated members of our society have gone through the process of gestation, they have been born. Therefore, they must be considered as fully humans. Also, embryos and fetuses developing in the womb should also be afforded extensive protection because they are to become humans. However, embryos in an artificial environment that will never be implanted into the uterus should not be afforded the same level of protection as for the embryos that do develop in the womb. They will not become humans. They will remain in their early stage of development, they will not

⁴⁷ *Supra nota* 30, p 1089.

⁴⁸ *Supra nota* 31, 2438-2440.

⁴⁹ *Supra nota* 38, pp 41-43.

⁵⁰ *Supra nota* 31, 2440-2443.

⁵¹ *Supra nota* 31, 2453.

develop any functional organs, they will remain as a collection of tissues composed of cells in varying levels of differentiation. This view is also supported by legislation proposal in the United States in 1998 – the Prohibition on Cloning of Human Beings Act – which would have prohibited only the implantation of embryos created by somatic cell nuclear transfer into the womb but not the research⁵².

Of course, we then need to set the limits between considering an embryo as carrier of rights and not. If we look at the same organism, but developing in a womb, I consider the embryo in the same stage of development to be a carrier of rights, because a child is to be born. Here, we must look at two points of conflict. Firstly, it could be argued that if the pregnancy fails at the later stage or if the child is born dead, this must then mean that the foetus and embryo never had rights. I am inclined to disagree with this premise. The biological purpose of the gestation is to provide an environment for the child to develop. If this process should fail for any reason, this does not mean that the embryo would not enjoy rights. This is because even though the pregnancy could have been destined to fail from the beginning, the environment for gestation in the womb was established – biological changes leading to birth in normal circumstances did occur. This leads us to the second potential conflict – it can be claimed that if science were to create an artificial womb that would allow the foetus to be carried to the term and be born as a child, this would then cause the embryo to become the carrier of rights. As there are many women who are unable to carry a child and as surrogacy is a hotly debated topic, this issue is actually relevant. I would equate the status of the embryo in an artificial womb to the one in actual womb. This is due to the changes introduced into the embryo's environment to promote its development into a child and for this reason, I would consider such an embryo to have fully equal rights to those developing in the womb.

My third objection to the arguments of Christine L. Feiler come from other areas of research. An embryo to be researched is in such an early level of development that it consists of vaguely defined tissues with varying levels of differentiation, essentially being bundles of stem cells. From this point, we get a potential analogy. If such aggregations of cellular material outside of development-promoting environment are considered to be carriers of rights, it can be argued that cell lines, especially stem cell lines will also become carriers of rights. However, I would disagree with that statement. Indeed, they are alive and contain human biological material. However, they do not compose a human entity, they are not intended for it, they do not have such capacity. This would also lead to some bizarre conclusions such as considering Henrietta Lachs, the woman whose cervical cancer cells gave rise to HeLa cell line, to be still alive, and human embryonic kidney cells (HEK293), which I myself have used, to carry rights. However, it is rather unconceivable to consider cell lines as rights carriers. This would also lead to an odd conclusion that if my adipose-derived stem cells are cultured into a cell line, they would acquire rights separate from mine. Organs grown from cell lines taken from a living person would also acquire separate rights. However, as conventional biological transplants do not acquire separate rights from donor or recipient, cell lines should also not acquire such rights and through deduction, embryonal stem cells and, indeed, embryos created for research purposes should also not acquire such rights.

Another conflict occurs, as demonstrated in an Australian example, when, even though it is forbidden to do damaging research on embryos, their storage time is limited by regulation, after the end of which they must be destroyed⁵³. If it were illegal to conduct experiments that can have detrimental effect on embryos, it follows that it must also be illegal to dispose of embryos stored

⁵²Riaz, F., (2001), Genetic Transplantation Cloning and Federal Legislation: Some Constitutional Issues. *B. U. J. Sci. & Tech. L.*, Vol. 7, Iss. 2, pp 421-430, p 427. Retrieved from HeinOnline: http://heinonline.org/HOL/Page?handle=hein.journals/jstl7&div=27&start_page=421&collection=journals&set_as_cursor=0&men_tab=srchresults (07.01.18)

⁵³*Supra nota* 38, p 54.

above determined time limit as it would introduce a similar damage, a similar violation of the embryo's rights. On the other hand, it could be claimed that as it is not merely allowed, but, in fact, obligatory that overkept embryos are destroyed, this must infer that research on embryos must also be allowed. Destruction of embryos due to the expiry of time limit offers no benefits to humanity, yet, it is obligatory. At the same time, destruction of embryos subjected to research that can potentially revolutionize medicine and save perhaps millions of lives is illegal. Here, we return to the balance of rights. Firstly, it is clear that in the situation just mentioned, the researchless destruction of embryos damages the supposed rights of embryos while also damaging the right to life and health of those who could be helped by technological discoveries as such a research ban would significantly postpone any advancements. In the case where the research does occur, the balance of the conflicting rights of the embryo and patients becomes the central point of discussion. I am on the opinion that in this instance, the rights of the patients to life and health significantly outweigh any potential rights of embryos used for research. This is firstly because any practical advancement in medicine can allow saving the lives and alleviating suffering for many people. Distancing oneself from the utilitarian principle, one can say that the life of the embryo should not be ended due to it being useful for many and I agree. But I do have a reservation. I agree with this principle only as long as the embryo is meant to be born – to become human. If there is no intention, no establishment of gestational environment, if no opportunity is given for the embryo to develop to a human being from the beginning, I would not consider this statement valid in this circumstance.

Next, we must discuss gene therapy itself. Gene therapy as the collection of methodology capable of altering our genetic makeup has been given considerable consideration in legislation and ethics. Some of the ethical concerns brought out in relation to genetic engineering are its potential use as a tool for eugenetics⁵⁴, its impact on human evolution⁵⁵ and a potential apologetism for nazism. There is also a major concern of potential errors that may occur during the process of gene therapy⁵⁶ and remain within the patient or even be inherited to the next generation. Resolution on the Protection of Human Rights and Dignity with regard to the Application of Biology and Medicine⁵⁷ states the position of the European Parliament that creation of embryos for research purposes, conserving frozen embryos, altering germline genome must be banned. European Parliament and the Council of Europe adopted a joint decision in 1994, banning germline gene therapy and human cloning applications⁵⁸. Article 13 of the Oviedo Convention allows genome to be modified, with the exception of germline modification⁵⁹. Second paragraph of Article 18 bans

⁵⁴Corsover, J. T., (1998), *The Logical Next Step – An International Perspective on the Issues of Human Cloning and Genetic Technology*. *ILSA Journal of Int'l & Comparative Law*, Vol. 4, Iss. 2, pp 697-758, pp 710-713.

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⁵⁵*Ibid.*, p 710.

⁵⁶*Ibid.*, p 710.

⁵⁷Resolution on the Protection of Human Rights and Dignity with Regard to the Application of Biology and Medicine, 1996 O.J. C 320, 28.10.1996, p 268. Accessed at: <http://eur-lex.europa.eu/legal-content/HU/TXT/?uri=CELEX:51996IP1029> (30.12.17)

⁵⁸*Supra nota* 52, p 718.

⁵⁹Council of Europe, (1997), *Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine*.

European Treaty Series, No. 164. Oviedo, 04.04.1997. Accessed at:

<https://www.coe.int/en/web/conventions/full-list/-/conventions/rms/090000168007cf98> (30.12.17)

the creation of embryos for research purposes⁶⁰. Recently, though, gene therapy has become introduced to the EU market⁶¹.

One of the most notorious jurisdictions in terms of embryology and genetics is Germany. The Embryo Protection Act of 1990 sets out punishment for artificial fertilization without the intent of implantation to the womb⁶². The second Article of the Act also prohibits out-of-body development of an embryo while Article 5 prohibits any genetic manipulation of germ line cells to be implanted into the womb⁶³. Article 6 prohibits human cloning for any purpose and Article 7 prohibits any creation of human-human or animal-human chimeras⁶⁴. In France, the Law No. 94-653 in its Article 3 changes the Civil Code by adding Article 16-4 which provides a prohibition of eugenics, but grants the opportunity to introduce changes into the germ line cells for research purposes to fight genetic illnesses^{65,66}. Article 9 of Law No. 94-653 created Penal Code Articles 511-18 and 511-19 that make the creation of and experiments on embryos for research punishable^{67,68,69}. In the United States of America, regulation of gene therapy is highly fragmented and decentralised⁷⁰. Title 45 of U.S. Code of Federal Regulations, Section 46 is responsible for regulating research on human subjects. The first relevant provision to our discussion is Section 46.111 (a)(2) which sets out the balance requirement between risks and benefits of research⁷¹. Similar provision exists in Title 21 as Section 56.111 (a)(2)⁷². The Food and Drug Administration (FDA) has authority in gene therapy

⁶⁰*Supra nota* 57.

⁶¹European Medicines Agency, (2012), Positive opinion on the marketing authorisation of Glybera (alipogene tiparvovec). EMA/470328/2012. Accessed at: http://www.ema.europa.eu/docs/en_GB/document_library/Medicine_QA/2012/07/WC500130153.pdf (30.12.17)

⁶²Embryonenschutzgesetz vom 13. Dezember 1990 (BGBl. I S. 2746), das zuletzt durch Artikel 1 des Gesetzes vom 21. November 2011 (BGBl. I S. 2228) geändert worden ist; § 1(2). Accessed at: <https://www.gesetze-im-internet.de/eschg/BJNR027460990.html> (30.12.17)

⁶³*Ibid.*, § 2(2), § 5(1),(2),(4).

⁶⁴*Ibid.*, § 6(1), § 7(1).

⁶⁵Code Civil, Livre Ier: Des personnes, Titre Ier: Des droits civils, Chapitre II: Du respect du corps humain, Art. 16-4. Accessed at: https://www.legifrance.gouv.fr/affichCodeArticle.do;jsessionid=0AA68ECF2800B185EFA63BB66A365592.tplgfr27s_3?cidTexte=LEGITEXT000006070721&idArticle=LEGIARTI000006419298&dateTexte=20171230&categorieLien=id#LEGIARTI000006419298 (30.12.17)

⁶⁶Loi n° 94-653 du 29 juillet 1994, *JORF* n° 175 du 30 juillet 1994 page 11056. Consolidated version as of Dec 30, 2017: <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000549619#LEGIARTI000006284445> (30.12.17)

⁶⁷Code Penal, Partie législative, Livre V, Titre Ier, Chapitre Ier, Section 3, Article 511-18. Accessed at: https://www.legifrance.gouv.fr/affichCodeArticle.do;jsessionid=0AA68ECF2800B185EFA63BB66A365592.tplgfr27s_3?cidTexte=LEGITEXT000006070719&idArticle=LEGIARTI000006418916&dateTexte=20171230&categorieLien=id#LEGIARTI000006418916 (30.12.17)

⁶⁸*Supra nota* 64, Article 9.

⁶⁹*Supra nota* 65, Article 511-19.

⁷⁰Cornetta, K., (2003), Regulatory issues in human gene therapy. *Blood Cells, Molecules and Diseases*, Vol. 31, pp 51-56, pp 52, 54. Accessed at: https://ac.els-cdn.com/S1079979603000597/1-s2.0-S1079979603000597-main.pdf?_tid=95519746-ee13-11e7-94b3-00000aab0f6b&acdnat=1514715534_9abb3b4d339354c6f1c9d692c617c6dd (31.12.17)

⁷¹Government Publishing Office, (2017), Code of Federal Regulations, Title 45, Vol. 1, Part 46, pp 131-165, p 139. Accessed at: <https://www.gpo.gov/fdsys/pkg/CFR-2017-title45-vol1/pdf/CFR-2017-title45-vol1-part46.pdf> (31.12.17)

⁷²Government Publishing Office, (2017), Code of Federal Regulations, Title 21, Vol. 1, Chap I, Subchap A, pp 5-547, p 388. Accessed at: <https://www.gpo.gov/fdsys/pkg/CFR-2017-title21-vol1/pdf/CFR-2017-title21-vol1-chapI-subchapA.pdf> (31.12.17)

clinical trials field^{73,74}. Investigational New Drug Application must be submitted to the FDA before commencement of clinical trial activities⁷⁵. National Institutes of Health (NIH) Office of Biotechnology Activities (OBA) and Office for Human Research Protections (OHRP) are also responsible for gene therapy trial oversight⁷⁶.

Followingly, let us analyse these ethical and legislative implications of gene therapy. Of course, one of the earliest concerns in this field was eugenics. The ability to manipulate the genetic makeup of people can become a tempting opportunity for those who wish to establish some form of superhuman. It has the potential to become the production factory of specifically designed athletes, scientists, artists, models who would not necessarily be very human and whose lives would not remain very humane. It would be an opportunity for those advocating racial purity and other similar ideas to bring their ideology to life, potentially leading to the rebirth of horrors committed during World War II. The potential ability of upcoming parents to choose their child's qualities to produce a child of their dreams is an eerie perspective. Such manipulations would likely lead to the homogenization of the human race.

It is adamantly clear that eugenic applications of gene therapy must be prevented. However, this prevention cannot materialize in the form of a ban of gene therapy such as the Embryo Protection Act in Germany. Understandably, Germany wishes to prevent the repeat of the savagery, mindless genocide of the nazi regime. But, in my opinion, it is counterproductive to reach towards any extremity. In fact, weighing the rights against one another, I am on the opinion that the prohibition of altering the genome of embryos without reservations is a fundamental abuse of the right to life and health. Firstly, such a ban abolishes significant part of the research into gene therapy, leading to the inability of people with genetic diseases or predispositions, people with cancer or other diseases brought about by genetic alterations to become cured. Although somatic cell gene therapy to be practiced on adults is still permissible, there are some differences. Firstly, the mechanism of modification may not lead to the receipt of therapy to all cells, potentially inhibiting the effect of therapy. In fact, most of the vectors used for genome alteration would likely not be very effective inside a living body, because they are designed to transform the genome of cells. Even if the vectors are delivered to the right location, they will probably not reach all cells in the vicinity. Of course, there can be exceptions such as viral vectors which can spread from cell to cell, but many other applications such as liposomes and plasmid transfer do not have such qualities, making distribution of the alteration ineffective. However, if it is known that an embryo to be implanted into the uterus has genetic abnormalities, they can be corrected when there are still few cells that can be easily accessed, cells that will later divide and differentiate into cells forming various tissues and organs, all of which contain the alteration, leading to a normal life. Additionally, such alteration would enable to prevent the inheritance of the harmful mutations by next generations, something that somatic cell gene therapy cannot. Only reverting to somatic cell gene therapy would mean that if the child is born, they will need to live years with a debilitating illness before they have a chance to a normal life, if they are even able to survive until then. Many foetuses with severe genetic defects would die in womb, devastating their parents. Of course, eugenics must be avoided. But this should not occur through processes that can violate other people's rights. Additionally, I do not see much legal benefit of such a ban in the light of preventing potential nazi

⁷³ *Supra nota* 68, p 53.

⁷⁴ Department of Health and Human Services, Food and Drug Administration, (1993), Application of Current Statutory Authorities to Human Somatic Cell Therapy Products and Gene Therapy Products; Notice. *Federal Register*, Vol. 58, No. 197, pp 53247-53251. Accessed at: <https://www.fda.gov/downloads/BiologicsBloodVaccines/SafetyAvailability/UCM148113.pdf> (31.12.17)

⁷⁵ *Supra nota* 68, p 53.

⁷⁶ *Supra nota* 68, pp 52-53.

practices. If such a regime should ever come to power, this law could be repealed. Preventing private individuals from using gene therapy for eugenic purposes can be achieved through much less infringing ways. Even though this measure is suitable for preventing eugenic practices, it is not necessary. Practical regulations subjecting any use of the technology to stringent oversight by the government, ethical and scientific committees would enable the use of this technology where desperately needed, yet would prevent the abuse.

Another, related, concern is the effect of the technology to human evolution. I agree that natural selection would be inhibited in such a situation. However, there are a few nuances. Firstly, even though natural selection does play a role in human evolution these days, this role has diminished through the use of technology. Increased food production, development of medicine, creation of social systems have all ensured the survival of most people who would not be adapted to a completely natural environment. We have utilized the technology to make us all fitter to the natural environment and we have amassed the ability to change the environment according to our needs. All of this has enabled the world population to reach past seven billion people. Of course, this, in turn, brings about the problems of overpopulation, but this would have to be discussed at another time. Additionally, gene therapy does not mean that natural selection would disappear, it would mean that we do the selection ourselves, we change genes to the ones adapted to environment.

Naturally, all previous points must be taken with a grain of salt. The technologies and the medical application of these technologies have not yet developed into a widely applied, safe and effective state. These technologies are still premature and most ethical and legal analyses are aimed at the future developments.

From here, we get to perhaps the most important issue with genetic engineering technologies – errors. In 2003, for example, a child who received experimental gene therapy to cure severe combined immunodeficiency (SCID) developed a condition similar to leukemia⁷⁷. The child received the therapeutic gene through the use of a modified retroviral vector⁷⁸. The problem with retroviral vectors is that they insert the carried gene into a random place in the genome which can disrupt other, vital, genes, including the ones that normally prevent the development of cancer such as cell cycle control genes. A similar problem would occur with the use of transposons. Here, we must again return to the technological side of view to analyze the risks of the therapy. As evidenced by the example brought, altering the genome can lead to serious permanent conditions if things do not go as well as planned. A harmful gene knocked out at an early stage of embryonal development may turn out to be vital for the development and knockout may cause severe implications. A conditional knockout employing the loxP-Cre recombination system might be of aid, however, even though the loxP sites are inserted into introns (non-coding parts of the DNA), it must be said that these non-coding parts could have regulatory effects, for example, on transcription, and their disruption could bring undesired effects.

Perhaps changes of gene expression are more preferred, safer method for achieving the results. Here, as well, we encounter issues. Firstly, from the RNAi perspective, it is necessary to ensure good enough expression of the introduced gene controlling siRNA synthesis, but there could be epigenetic mechanisms in the cell that can inhibit the production of siRNAs such as changes in methylation and acetylation of the DNA. Secondly, the siRNA-encoding gene is introduced into the genome and can potentially disrupt other genes, leading to dangers similar to the ones using retroviral vector. Thirdly, considering siRNAs and miRNAs as well as CRISPR-Cas9 system, great care must be taken to target the exact sequence. Moreover, many genes have conserved parts which

⁷⁷Noguchi, P., (2003), Risks and Benefits of Gene Therapy. *The New England Journal of Medicine*, Vol. 348, No. 3, pp 193-194. Accessed at: <http://www.nejm.org/doi/full/10.1056/NEJMp020184> (31.12.17)

⁷⁸*Ibid.*, p 193.

correspond to conserved protein substructures found in many proteins. If instead of targeting a unique part of the target gene, a more widespread, highly conserved sequence were to be used, this could hamper the production of many vital gene products and introduce an ailment even more serious than the original one. Therefore, a thorough system of checks, balances and controls must be in place where significant peer view would have the opportunity to find potential pitfalls. Luckily, most jurisdictions appear to have stringent guidelines in place.

The introduction of a non-human gene into human genome also poses inherent risks and therefore, warrants stringent guidelines. The most important action here is to ensure that the protein does not have undesired reactions with any human proteins or other substances as this could produce severe adverse effects. Therefore, before such insertion of a transgene, a thorough proteomic analysis, including the analysis of binding sites, possible substrates, chirality and tertiary structure in general is highly necessary.

In addition to previously mentioned difficulties, the threat of adverse reactions to one of the treatment components remains an issue. This issue is especially strong with the use of viral vectors, which are highly effective in transporting desired gene products to their target locations but can lead to serious complications.

Nevertheless, the regulations guarding gene therapy and related fields such as stem cell therapy, embryology are often very stringent, as evidenced by Germany, France and the United States. Especially German legislation in the field is not merely restrictive but even repressive of research and may potentially remove hope from patients of getting their illnesses cured. France is more liberal in this sense, although the ban of creating embryos for research purposes (and resultingly, the use of embryonal stem cells) is forbidden, like in the United States. In the United States, however, gene therapy is merely one of the 'biologics' falling under the jurisdiction of NIH and FDA, with few specific provisions and one special committee. The recent approvals and ever increasing amount of approved gene therapy products⁷⁹ shows that the practical application of gene therapy has reached the reality.

CONCLUSION

The 'unnatural medicine' – gene therapy and stem cell therapy, also utilising embryonic stem cells, constructed viruses and cloning – is becoming part of our reality. Despite the constant refinement of technologies, legislation and public opinion is wary of the application of new technologies in medicine. Although embryonic stem cells are highly useful recipients of gene therapy, source of stem cells for regeneration and a medium for studying different biological mechanisms, the research on embryos is usually forbidden. Understandably, there are moral issues present, mainly connected to the rights of the embryo. However, I do not consider it necessary to equate embryos created for research purpose, left over from IVF treatment or abortion to those developing to human beings via gestation. As these embryos will not be implanted into the womb and will not be born, will not develop into sentience, there is no strict need to consider them as carriers of rights as the embryo rights are meant to guard the safety of development of embryos that will become humans.

⁷⁹U.S. Food and Drug Administration, (2017), Approved Cellular and Gene Therapy Products. Accessed at: <https://www.fda.gov/biologicsbloodvaccines/cellulargenetherapyproducts/approvedproducts/default.htm> (31.12.17)

Gene therapy can bring several dangers with it. One example is a possible eugenics approach and the desire by some to create children by design. However, I reject the premise that a complete ban on germline gene therapy to prevent eugenic exploitation is the correct way. It deprives those embryos with genetic illnesses from receiving prompt aid and force them to live years with agony until they are able to receive somatic cell gene therapy. At the same time, it does not necessarily prevent abuse as laws are changeable. An effective prevention of eugenic applications of gene therapy can be better achieved by subjecting any research and application of the technology to stringent oversight. Therefore, the absolute ban on germline gene therapy fails the proportionality test – it is suitable but not a necessary measure nor is it proportional in the narrow sense.

Gene therapy also causes concerns regarding human evolution, more specifically the alteration of natural selection. However, it must be remembered that all technology that aids humans can be considered altering natural selection, especially technology related to food and medicine.

Third major concern of gene therapy is the potential errors of the technology or its application. Introduced DNA sequences may be located in an area where they disrupt important genes, badly designed siRNAs can also target necessary mRNAs and interspecies proteins may have the ability to react with the natural substrates in the body, causing ailments. Additionally, vectors used for delivering gene therapy can have considerable side effects.

It is clear that stem cell and gene therapy need refinement, both in technology and in law. However, this can only occur through extensive research that needs appropriate legislation that would allow this research to occur. Excess banning may not be the best solution for the ethical and moral dilemmas occurring in this field of science.

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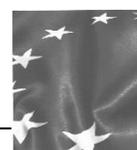
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Ethical Issue in Employee Monitoring

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Abstract: *With the increasing dependence on the Internet in both personal and professional life, the matter of using Internet for personal reasons at the workplace has become an important issue for companies. Thus, companies have started to consider the private use of the Internet as a threat for their organizations and to minimize the potential risks they started to limit the Internet access and/or monitor employees behavior through the Internet and this approach has become the part of work life for most of the organizations. This paper focuses on the issues of employee monitoring, its ethical implications, the motivations behind it and its legal aspects in relations with the right of privacy.*

Keywords: *Ethics of law and technology, Personal data, Privacy, Surveillance.*

INTRODUCTION

Nowadays we live in an interconnected world where the development of information and communication technologies (ICT) has made a significant impact on all aspects of people's daily lives. It has influenced the way people communicate with each other, work, make business or even governing country. It is undoubtedly that the development of technologies has changed workplace conditions as the companies have started to leverage new technologies and especially the Internet.¹ All these changes have automated many business processes, created new workplaces and generally has changed the standard of work. Hence, the Internet has become the part of work life and notwithstanding it has brought positive changes for the organization, it also has arisen new challenges for them.² As the dependence on the Internet is increasing not only in people's personal life but also professional, the matter to use the Internet for a personal usage at the workplace, has become an important issue for everybody and companies has started to consider the private use of the Internet from employees as a threat for their organizations. It is not surprising that all employers would like that the equipment which they provide be used only for work and not for non-job-related tasks. To minimize potential risks related to the Internet use, the companies started to limit the Internet access and/or monitoring employees behavior through the Internet and this approach has become the part of work life for most of the organizations. Of course surveillance and monitoring of employees is not a new phenomenon for the people, just the appearance of the Internet has changed the form of it and has become more computer-aided monitoring.

Today employees are using numerous technologies to watch their employees at work, for example monitoring e-mail, instant messages, the Internet usage, even monitoring the location of their employees in real time worldwide. New technologies give possibilities to the companies "secretly to view, record, and report literally everything employees do on their computers" (Frayar, 2002). It is obvious that the forms of surveillance are changing with the development of ICT and it is becoming more sophisticated. Also, today monitoring workers has become cheaper and easier than it was before. And it has become available for more companies. All these have become the reasons for increasing monitoring employees practice among the companies (AMA, 2007).

The concept of employee monitoring has been the matter of debate always, but the development of the Internet and using computer-aided surveillance technologies has raised new

¹ Kerikmäe, T.; Mürsepp, P.; Särav, S.; Chochia, A. (2017). Ethical Lawyer or Moral Computer – Historical and Contemporary Discourse on Incredulity between the Human and a Machine. Вісник Національної академії правових наук України, 2 (89), 27–42

² See also: Kerikmäe, T.; Hamulak, O.; Chochia, A. (2016). A Historical Study of Contemporary Human Rights: Deviation or Extinction? Acta Baltica Historiae et Philosophiae Scientiarum, 4 (2), 98–115.

dilemma according to ethics which relates to the privacy of the employees even if by according current laws in some countries it is legal for the companies monitoring employees activities. Ethically, the matter of workplace monitoring in the “information age” has become more complicated, since generally, the perception of ethical and moral values is different among the group of people, hence related to the Internet it has become more complicated and doubtful. In most cases, the employees are aware of the possible monitoring of their behavior but sometimes the employee monitoring their employees without prior notice it to them. Hence, the concept of employee privacy has become more vague and questionable related to the ethics of the development of technologies. Has the company right to read personal messages of their employees? Is the company invasion privacy of their employees? Or is it right to use company-owned equipment/resources for non-business-related tasks? These and other questions have become the matter of debate nowadays. According to Frayer, employees have a right to privacy. But also the companies have a right to monitor their employees, especially if they have a reason for suspicion of inappropriate activities form their employees. But employers must notify their employees that their activities are monitored in advance (Frayer, 2002).

The aim of this paper is to address the important issues relating to employee monitoring, to understand what is ethical implications of employee monitoring, what is the motivation behind of behaviors from the both of side, employer and employees and what is the right of the privacy of individuals at a workplace. Based on the literature and practice will be review the current state of employee monitoring, used technics and the right of the employer and employees, arguments for and against of employee monitoring and surveillance are reviewed as well. A case is analyzed to see a legal side of this phenomenon. At the end of the paper is presented a small online survey which was conducted to understand how employee monitoring is perceived by workers in Georgia.

ARGUMENTS AND MOTIVATION FOR AND AGAINST ABOUT EMPLOYEES MONITORING

Monitoring employees workplace brings up some ethical questions around it not only between employer and employees but generally, in the world. The issues which justify employers can be considered unethical for employees and the arguments which can justify employees cannot be ethical for employers. Which is acceptable and not new as for people it differs what is good and what is bad. From both sides of a point of view, we can find something unethical and something that justify their behavior. So, there exists different opinions and key arguments for both sides.

It is undoubtedly that the Internet has changed working environment for every company and today almost everybody is using computers to perform different tasks of their jobs. It has brought numerous benefits for the companies and also gives more possibilities to people to do their job better and faster. So, Internet has become the main part of the companies' daily life and the dependence on it is increasing everyday in every field. The internet gave possibilities to the companies to improve communication with each other and also outside of the company. So, e-mail has become the main communication channel for many companies. Notwithstanding of the benefits, all these changes has brought also new challenges and risks to the companies. Specially when the employees has started to use the Internet for personal usage. In some cases personal usage of the Internet can be reason of overloading network bandwidth which can have impact on the work quality and speed. But the usage of the Internet for personal purposes is related also with different risks. The development of the technologies has given possibilities for the companies' to use computer-based monitoring technologies. Which gradually has become more sophisticated, cheaper and available for many companies. As the Internet has become more and more vulnerable, companies started to use different tools to protect their business from potential risks. That's why

they have started to limit access to the Internet for employees, some companies limit usage of the internet during work hours and only for lunchtime can be used it by employees for personal usage, some companies fully block the Internet usage for personal purpose or just companies are monitoring their employees activities through it. Everyday more companies are using different technologies and software for monitoring their employees activities at the workplace and also the number of workers who are fired based on the monitoring results is increasing as well.³ According to AMA , 28% surveyed companies have fired workers for misusing e-mail. This survey proves that employees use company-owned resources inappropriate and there is a need of monitoring (AMA, 2007).

One of the main argument from the employers to use monitoring technologies in a workplace is productivity. There are many surveys which prove that employees are spending working hours for online shopping, surfing different websites, such as sports, entertainment, reading news, watching videos or movies and of course mostly employees spend their working hours on one of the social media websites were they are just talking with colleagues/family members/friends or just scrolling pages. For example, according to one survey 53% of employees doing online shopping at work (Annual CareerBuilder Survey,2016). It is obvious that companies are paying salaries to their employees for performing their job and not to spend working hours for other activities. It is undoubtedly that they have right to control efficiency of the employee. Also, sometimes these activities can bring damage to the company, not only financial but also moral. Nowadays companies are using different software to track activities of their employees which of course is additional expenses for the companies. Most companies are using website monitoring software which collects information about which websites are viewed by an employee and how much time has spent worker there per day. Also, there is software which can monitor outgoing and incoming e-mails by specific words or file (Bezek, Britton, Curtis, 2001). According to AMA survey 66% of employers monitoring Internet connection and 43% of them monitoring emails of their employees. Even companies are monitoring the content of visited web pages, keystrokes and also how much time spends employee at a keyboard. Even some companies (40%) read manually employees emails and even reviewing existing files on the computer. As we see from this survey companies are spending time and money to protect their business resources from inappropriate usage (AMA, 2007). As Alana Semuels reports, it is quite fair to monitor your employees for increased productivity (Semuels, 2013). As every minute spends for personal purpose means less time to spend for work work-related tasks. Today, for competitive advantage every minute is important for the companies. From this viewpoint, we can justify company and even more we can see employees behavior is unethical. As they use trust of the employers and use company-owned resources for personal usage.

Another motivation for employee monitoring is security. As employers have to protect their business secrets and also confidential information not only about their clients, most of the company's business is related to the clients' sensitive information, but also employees. As it is mentioned in another survey, 21%-31 % out of 800 workers has transferred company confidential information by email (Office Slacker Stats, 2017). Also, this argument is for companies, as generally stealing something is unethical for everybody.

On the other hand, there is also an economic interest in companies in getting access to innovation generated by employees by their online activities or in form of comments, correspondences, or personal notes which induce e.g. technical improvements. Taking into account

³ Kerikmäe, T; Särav, S. (2017). Paradigms for Automatization of Logic and Legal Reasoning. In: Krimphove, D.; Lentner, G. M. (Ed.). *Law and Logic: Contemporary Issues* (205–222). Duncker & Humblot.

that most inventions are made by employees – and the dimension of these activities – the significance of employee-generated innovation for a company's R&D can hardly be overrated.⁴

Another motive power for conduct monitoring employees workplace is to control any harassment activities on the Internet or email through their equipment. Because that can be a serious problem for the company and can have an impact on their reputation. Of course, sexual harassment is not new and it was happening all the time but the development of the information and communication technologies (ICT) has made it easier. People can be more aggressive and offensive in the online communication rather face-to-face communication (Bezek, Britton, Curtis, 2001). According to the survey “, 70% of all web traffic to Internet pornography sites occurs during the work hours of 9am-5pm” (Office Slacker Stats, 2017). Access to this kind of pornography web pages can be discussed as one of the forms of sexual harassment as well and it can be offended for female employees (Bezek, Britton, Curtis, 2001). So the employer is responsible to create a good work environment for everybody and forbid activities related to any kind of harassment.

Perhaps the main issue which raises ethical questions in the monitoring of workplace is related to the privacy and trust. And seems that these two arguments cannot justify monitoring and surveillance of the employee's activities. Most workers spend 8 hours at work, so it is obvious that they are using the Internet for personal use as well. But when they know that any activity while using company-owned resources is monitored they will act differently and probably under stress. They will feel less autonomy and mistrust from the managers. All these feelings can be because of demotivation which will have an impact on the business results at the end. Also, they will think that they have no privacy at work even if they are using the Internet and email only at non-working hours or only when it is essential for them. According to Yerby, the employee cannot expect that any privacy at work as he/she is using the company's equipment. And the owner of this equipments, in this case, the employer has the right to monitor the employees' use of the company-owned equipment (2013). It is obvious, that every employee prefers to know if they are monitored somehow or what is their rights at work. There are some cases when employers do not notify employees that the Internet and email usage for personal reasons are forbidden at work or the company is conducting monitoring and their personal conversation can be also reviewed or read.

Nowadays there is some software which allows a company to monitor their employees secretly. For example, there are softwares, so called spyware which “aims to gather information about a person or organization without their knowledge, that may send such information to another entity without the consumer's consent, or that asserts control over a device without the consumer's knowledge” (Wikipedia). It is obvious that secretly monitoring is more complicated and raises more important ethical issues between employee and employer with regard privacy of the individual. If ethically it is unacceptable for people that kind of monitoring, for example in the USA by law it is not prohibited. Besides, there are not precise laws about all forms of new surveillance technologies, for example, about location monitoring law does not exist, the US Electronic Communications Privacy Act (ECPA) of 1986 is prohibited for an employer to monitor its employees' communication intentionally and it sets some restrictions on employee monitoring. One of the main exceptions is monitoring for business purpose, which permits employers to monitor its employees' communication in case if they are doing it for a purpose of the business. The second important exception is related to the constant. Which means that employer is allowed to monitor its employees if they have the consent of their employees for it. One of the limitations which applies the ECPA is related to the transmission communication. To say, in other words, companies have rights to read emails during transmission of the communication and not when it is storage (Kaupins, Minch,

⁴ On user-generated innovation in general see Hoffmann/Prause,). How to keep open-source based innovation approaches sustainable, p. 133-141.

2005). Here, it must be mentioned that even if the employee deletes some messages cannot be sure that this message is not saved somewhere in the server and cannot be accessible for the employers.

As we see, in USA companies have right to monitor their employees activities while they are using company-owned resources and it is legally acceptable and but at the same time there are some limitations on the monitoring employees communication. So somehow, orally or written in the contract, a company has to provide information about monitoring to the employees. But in some cases company conducts employee monitoring without informing its employees in advance which raises more ethical issues. Also even with notice of monitoring the company must be careful not invasion privacy of the individual. The concept of the privacy is a very broad and also an understanding of it is different with different people. With the development of the technologies, a right of the privacy of individuals, not only employees, has become the subject of debate. Also, the use of technologies for surveillance at the workplace has become the matter of dispute not only with regard ethics but also has become the subject of the law. A good example of employer/employee relationship and about monitoring is a well-known case of *Barbulescu v. Romania*. Besides that in this case monitoring was not done secretly and the employee of the company was aware of it, anyway this case address the different issues and rights of employers and also right of privacy of employee even when monitoring of employee workplace is held with notifying it. Also, this case illustrates the side of the court in case of employee monitoring and it is not the only one case with regard the relationship between employer and employee related to the employee monitoring.

CASE OF BARBULESCU V. ROMANIA

The case of *Barbulescu v. Romania* raises serious questions with regard to the protection of the right of employees privacy at workplace even if they are notified prior to potential monitoring. The final decision was made by the Grand Chamber of European Court of Human Rights (ECtHR) which must be taken into consideration for the future cases. Also, this case answers some questions regarding with the legal sides of employee monitoring and even ethical questions.

Mr. Bărbulescu was working in the Romanian company. On the 1 August 2007 Mr. Bărbulescu was terminated from the company on the ground to breaking company's policy about using company-owned IT equipment. According to the company policy, Mr. Bărbulescu had no right to use any IT equipment (including Internet and phone) for a personal purpose. On 3 July, employees of the company were informed about the monitoring and about not permitted activities at work. So, he was aware of existing policy of the company. After that Mr. Bărbulescu was asked to create Yahoo Messenger account only for work purposes. On 13 July, Mr. Bărbulescu was informed that the company was monitoring his Yahoo Messenger account and was found that he was using it for communicating with his brother and fiancé which was not permitted according to the company's policy. After Mr. Bărbulescu denied to use company resources for personal use and as he stated he was using it only for professional tasks. after this, the company provided to him 45 pages of transcript of his communication during several days not only form his professional Yahoo Messenger but also a private one. Part of this communication was included an intimate content.

First, Mr. Bărbulescu appealed the company's decision on the domestic, Romanian, court. He argued that his privacy was not protected in the workplace and was an invasion. Also, he argued that the company made a wrong decision as his behavior did not bring any negative effect to the company. Mr. Bărbulescu complaint was rejected by the Bucharest County Court, the County Court, and also by the European Convention on Human Rights. According to the courts, the company's monitoring was reasonable, limited in scope and employer did not abolish any rules, even the company had notified employees about monitoring measures in advance. As they had set

the rules and they have informed Mr. Bărbulescu about company's policy, even before that in the company there was an incident of dismissing the employee on the ground of using the Internet for the personal reasons. So taken into consideration all above-mentioned arguments there was not an invasion of Article 8, the latter is related to the right to respect for private and family life. Also according to the Romanian labor law and European Directive 95/46/EC, the company had right to monitor their employees and check their employees' behavior at the workplace. But Mr. Bărbulescu challenged even the decision of the ECtHR and the case was handed to the Grand Chamber of the European Convention on Human Rights. This fact proves that the workplace's issue is the matter of dispute. The latter made a decision to Mr. Bărbulescu good. Conversely to all courts, including the lower Chamber of the ECtHR, the Grand Chamber found that the employers must respect their employees private life and the privacy of the correspondence and in case of monitoring they have to give adequate notice to the employees about the nature of the monitoring. Even according to the Grand Chamber, the Romanian court did not protect the employee's right to privacy under Article 8.

This case is interested also because it shows that different judges have different opinions and even they understand privacy of personal data in a different way. This case shows us that there are no clear rules how the employers must monitoring the employees and also illustrates that employees must worry that their data cannot be protected in a workplace. This case shows that by law the employer has right to terminate an employee for using company-owned resources for personal reasons at work. Besides of the rights of the employer, the decision of the Grand Chamber of the ECtHR shows that the employee has the right of private life even if he/she is notified in advance about the monitoring his/her activities at work and also the companies have to provide the information about the nature of the monitoring. Hence, as we see companies have to be beware about employee monitoring, only notify employees in advance is not enough and they have to protect the privacy of life according to Article 8 (ECHR 268, 2017).

SURVEY – EMPLOYEE MONITORING

As we see from the literature and practice review and from the presented case (Barbulescu v. Romania) in the USA and Europe it is allowed employee monitoring with some limitation and in most cases, employees are aware of it and the rights of the privacy are as important as to protect a business from potential risks. But it is interesting what is the current situation and understanding of the employee monitoring and workers right to privacy in Georgia. Where people's right to the privacy is not so protected as it is in USA or Europe, also where the relationship between employer and employee is different. And where in many companies the internet and email usage policies are still in early stages or they do not exist at all. While employees' monitoring with or without informing is held. So, to understand employees awareness of company policies and if they use the Internet for personal usage, also if it is acceptable for workers monitoring their activities at the workplace, a small online survey was conducted in Georgia. The online survey was sent approximately to 50 people and only 37 of them has answered the questions. The questionnaire was sent to the people who are mostly working in financial sector, as monitoring of the employee should be more there than in another sector to mitigate potential risks.

As we see already the use of the Internet is a distraction for workers and also it can have a negative impact on the business and one of the main reason for monitoring employees for the companies is to control their worker's productivity. Indeed, according to this small survey who has the access to the Internet at work, none of them say that they use internet only for work-related tasks. 75,7 % say that they use the Internet for personal reasons and only 24,3 % of respondents use

it for both purposes, personal and work-related. Of course, it was predictable that most of the workers use the Internet for visiting social network pages, as the dependence on the social media has increased significantly everywhere. 59,5% of respondents use internet for social media pages, only 15 % is watching movies or listening music at work, 10,8% among of them are reading the news and 5.4 % is playing games. 5.4% of workers are using internet for other activities. Most of surveyed (44%) say that they use the Internet for personal purpose only on leisure time. Almost the same amount of workers (43%) use the Internet at least once per hour and the Internet is used only in case of necessity only by 13 % of workers.

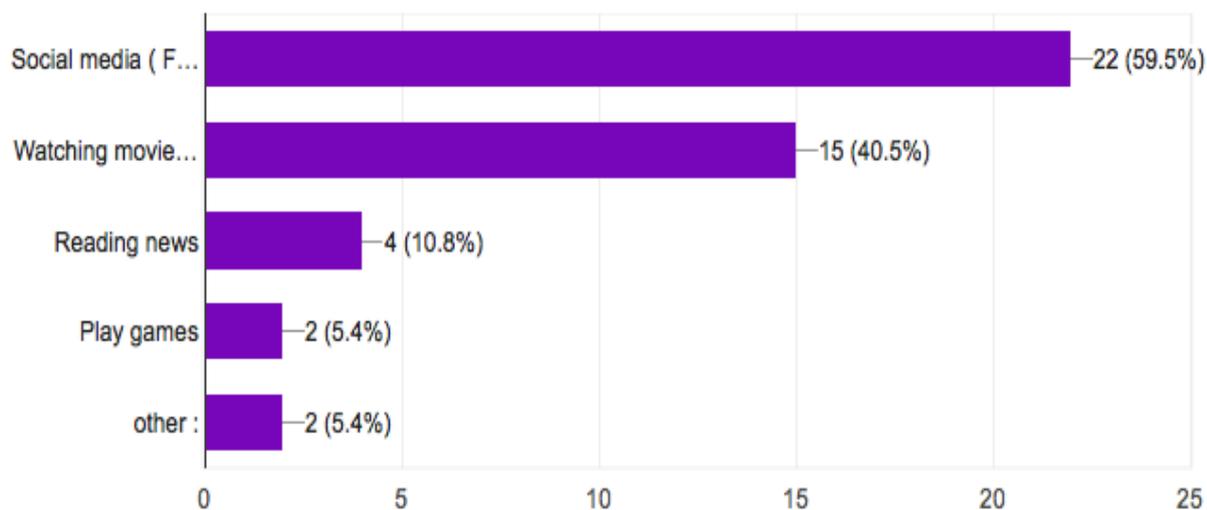


Figure 1. For what are using workers Internet for personal usage

According to the survey, most of the workers (54,1%) say that they have written policies about the Internet or email at work. But at the same time enough numbers of workers (35,1%) have no information if any kind of policy exists in their company and only 10,8% say that they do not have any policy at work. As we see if employee monitoring exists at work, the employer is responsible to inform about it their employees. As we see from the survey, most of the workers (73%) know that their activity is monitored at work by the employer and 24,3 % of those surveyed do not have any information about potential monitoring. The latter does not mean that their company is not monitoring their activities, as it can be done also secretly, without informing employees. It is interesting to know in which form get employees information about monitoring their activities at workplace in Georgia. The most appropriate way to notify employee is to write this information in their contract. As it is revealed from this survey only for 42,9 % is written this information in their working contract. 35,7 % of workers got information about potential monitoring orally from the HR before starting to do tasks at a job and 21,4 % say that they are aware of potential monitoring from their colleagues. As we see there is no any common standard with companies, how to inform employees about monitoring. It must be noted that only 54,1% of respondents are aware that their company can have access to their personal information, 45,9 % of them have no information about it. The last question was related if it was acceptable for workers that their activities at work are monitored. As was it predictable the most of the workers (70,3%) are against

of the monitoring, but for 29.7% of respondents, it is acceptable. And it proves that people do not feel comfortable when they are watched and maybe they are working under the stress.

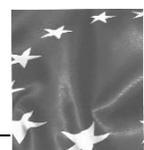
CONCLUSION

The development of the technologies has made workplace monitoring and surveillance the part of organizational daily life, which is already widespread and is a growing phenomenon. As we see, because of the dependence on the Internet, for modern business it has become useful and even necessary employee surveillance at some level, even if this phenomenon raises different ethical and legal questions. To say another word, not all justification from the company's perspective can be discussed as unethical. Because as we see, from the presented case and also from the survey, despite employees are aware that their activities are monitored by employers, still they spending time on the Internet for personal purposes, chatting with family members/friends, scrolling social media pages, even maybe some of them trying to find another job and etc. Hence, companies have reasons to control productivity and efficiency of their workers which today can be measured easy with the new technologies. We see that with the help of technologies companies can avoid potential risks, avoid leaking company's confidential information and secrets and just create a good working environment for all employees. Sometimes damage from the Internet can be both, legally and financially cause for the companies. Of course, another matter of disruptive is how companies are conducting monitoring and how they inform their employees about potential monitoring and about the form of monitoring, how clear is for employees all the rules and if they are aware of them. So, it is important for everybody, while using different tools of monitoring companies has to take into consideration also the rights of their employees. Not only from the ethical viewpoints, but also from legal, companies have to integrity employees tracking and privacy somehow, to say in other words companies must balance ethical issues and employee monitoring. Not only for employees but for everybody to protect their private information is important and everybody concerns about their privacy. As we see not only from an ethical viewpoint but also form legal, it is completely unacceptable monitoring employees without notice, they have to respect their employee's privacy anyway. Because the good relationship between employer and employees is one of the main guarantees of a successful business. With established the Internet and email usage standards at work and with occasional monitoring of workplace it is possible to achieve a balance between employee privacy against the company's justification for monitoring. Also if the company want to act ethically, they have to trust their employees at some level, give them also freedom and also respect their privacy. But at the same time, the employees have to respect the property of their employers and also not spend time at work for personal purposes.

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Bodes Donated To Science: Are Scientific Benefits Overweighing the Ethical and Legal Issues?

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Abstract: *This paper aims to understand if scientific benefits of body donation overweigh the ethical and legal shortcomings. Firstly, the paper gives an oversight on the historical background of these practices. Then, it moves on to the approach that body and its parts as the property of the person. After explaining the rules, laws and regulation about body donation in the United States and in the European Union Countries, the ethical issues and some positive aspects of donation are discussed.*

Keywords: *Body farms, Body donation, Ethics, Law and technology.*

INTRODUCTION

In the light or rather by leaning on our 9th assignment about „Property rights in one's own body parts”, this work dives deeper and research similar topic using different angle. To be precise, a body donation for scientific purposes.

Medicine developers, different bio-skills laboratories, cryonics organisations, body-farms and other similar practices who use donated bodies usually get the right to „use body for scientific purposes “. Therefore, in context of this work science is viewed as a larger context and work will focus on several facilities who use corpses in order to develop certain technologies or compose clearer picture about the human body, which is possible only by analysing processes in the (dead) body.

Many scientific experiments can't be conducted without the real body. Experiments on live people do need some ethical approval.

Those who conduct such work must for example fallow World Medical Association's Declaration of Helsinki.¹ Problem with that is that even this and using different ethics committees cant 100% guarantee that work is morally firm. Still, somehow topic of experiments on live people are met with calm mind. I guess it is justified by the fact that people who take part in such test is doing this voluntarily and most important with the possibility to end the process and by knowing what exactly (of course if research is conducted by abiding all laws) will happen to him/her or his/her body.

When test is made on animals or corpses, society is still alarmed and can't accept it similarly, because it is believed that even if person agreed to give his body to the science, he can't be sure what will happen to it in a long run. Yes, there are rules which must be fallowed, but as research show, usually it is very hard to track down what exactly happens to the body. Some are cut into small pieces, those are used in different time, many are preserved for years other are destroyed after a week. Some facilities (in Maastricht) have a well-developed system which even allows to make final farewell ceremony for the relatives after the experiments on the body are finished. Other facilities (USA) have numeration system and although it may be clear how many body parts there should be, there are no original person- everything is mixed. Even worse is the fact that there have

¹ The BMJ: leading general medical journal. (2017) Ethics approval of research. Accessible: <http://www.bmj.com/about-bmj/resources-authors/forms-policies-and-checklists/ethics-approval-research>, 7 January 2018.

been reports that there are companies who deal with the sale of the donated bodies. But longer about that later.

For many body donation is seen like a sin or not ethically right, because it is believed that body must be buried in order to achieve the afterlife.

Some bodies are sent to the medical facilities for the scientific purposes without the consent. Such situation prevailed in Turkey until mental health reform in the 80s. Before the reform all bodies which were not collected by the relatives, were sent to the medical institutions for the medical students to practice.

Medical ethics is usually safer than the personal, because it supposed to be public and most importantly have a standard rule.

In order to comply with the rules, such organisations can't do the aggressive marketing, but they do try to provide as much information as possible in order to interest people. "In this, they respect autonomy, a person's right to choose their own fate, which is in alignment with industry standards for anatomical donations."²

By using regulations, laws and principles of medical ethics (dignity, honesty, no harm etc.), such organisations seem to not violate the rules and be ethically acceptable, but as mentioned before further analyse of the topic will reveal all aspects and then full picture can be composed.

HUMAN REMAINS AND HISTORICAL VIEWS

Death is always an uneasy topic; dead body is seen as something frightening. Experimenting with the dead is even more outrageous theme. Having some kind of "garden" for corpses in case of body farms, or keeping the body in the museum in glass jar just don't match normal understanding about how to treat the dead.

In history, death itself could be seen as something glorious, person could die as a hero, but not being buried (or burned) or not letting relatives to take care of their dead by commanding to let the body rot in open was treated like a punishment or mockery.

One of such examples can be seen in Sophocles` play- "Antigone": Antigone becomes desperate when she learns that two of her brothers are killed, but by the command of the king only one is honoured with the full funeral and second is left to disgrace. Risking her life and being ready to die, because disobeying the orders of the king will unarguably get you killed, she decides to "honour the dead" by burying him herself.³

English common law (which also had it role in US laws), also saw that every person had the right to decent burial. Denial of the burial was seen (by the church especially) as a crime.⁴

Laws on this topic usually concern different sides: what must be done with human remains, what absolutely is not acceptable to do with human remains and finally what if something must be done- what can be allowed in case of that must?⁵

² Jones, T. (2016) The Ethics of Anatomical Donations. Accessible:

<http://www.alcor.org/Library/html/EthicsOfAnatomicalDonations.html>, 7 January 2018. DeJohn, C., Zwischenberger, JB.(2006) Ethical Implications of Extracorporeal Interval Support for Organ Retrieval. – ASAIO Journal, Issue 52, Volume 2, 119-122.

³ <https://genius.com/Sophocles-antigone-full-text-annotated>

⁴ Coster, CG. (2014) The Law of Cadavers and of Burial and Burial Places (Book Review). – Volume 11, Issue 1, 163- 165.

⁵ Marsh, T. (2015) THE LAW OF HUMAN REMAINS. – Lawyers and Judges Publishing Company, Paper No. 2646184. Accessible: <https://ssrn.com/abstract=2646184>, 7. January 2018.

In US legal system body (of a dead person) is not a thing as governed by property law, but also not a person in the meaning that laws directed to live people and their rights, duties, freedoms etc. can't apply to a body of dead person. So it is stated that in that sense laws directed to human remains or body parts exist somewhere in between.⁶

History shows us that king and the relatives had some say in this topic. Nowadays there is also the principle that family members do have decision powers over their dead: "In 2004, the United States Supreme Court reaffirmed the established principle that family members have an interest in the disposition of remains"⁷ But wishes of a dying person must be also considered.

US cases established that after the death, person just can't have the same rights as living. That is logical, because constitutional rights are too personal, so to say, they "die" together with the person.⁸

So, as explained in the beginning human remains are not property, therefore deciding what to do with your own body is not as easy as dealing with your apartment, car etc., which can be part of ones will. However, individual has the biggest interest in his body and therefore he/she can decide how body is treated: where to bury, how burial could look like, being a donor etc.

That brings us closer to the original topic of body farms, but before that the property in the human body/body parts should be also overlooked.

BODY/BODY PARTS AS A PROPERTY

Biggest interest doesn't mean the total freedom. US federal statute will cut the possibility to sell your body parts. Again, many argue that kidneys, lungs- all body parts- should be the property of a person "owning" them. Why should a dying mother be denied possibility to give (! not sell) her heart to her dying child?

Again it is believed that relaxing rules in field of the transplantation will destroy the whole system of transplantation rules.

Another argument is that changing views on deciding freely about your own body parts will fight societies views on human rights⁹ and will give new meanings of understanding liberty and property.¹⁰ It is seen as not ethical to treat body and parts same way as groceries in the shops.

This circle of body, body parts and property seems as a messy chunk. It is clear that dead body and alive body are different, but body parts can be seen as both. Approaches which regulated dead bodies were (still are) also very different.

US law, or in order to be even more specific Californian law allowed people to donate their body to hospital or university and there were no limitations or precise requirements on which bodies could be donated. French law allowed only handful of institutions to perform such manipulations in the framework of scientific interest.¹¹

⁶ Ibid, p 2.

⁷ Supra nota 5.

⁸ Lehrer, J.(1974) Cemetery Land Use and the Urban Planner.- Urban Law Annual ; Journal of Urban and Contemporary Law, Volume 7, 181-197.

⁹ See also: Kerikmäe, T.; Hamulak, O.; Chochia, A. (2016). A Historical Study of Contemporary Human Rights: Deviation or Extinction? *Acta Baltica Historiae et Philosophiae Scientiarum*, 4 (2), 98–115.; Kerikmäe, T.; Nyman-Metcalf, K. (2012). Less is more or more is more? Revisiting universality of human rights. *International and Comparative Law Review*, 12 (1), 35–51.

¹⁰ George, A. (2001) Property in human body and its parts. Accessible: <http://cadmus.eui.eu/bitstream/handle/1814/172/law01-08.pdf>, 7 January 2018.

¹¹ Russell, S. (1981). *The body as property*. 1st ed. NY: Viking, 66-67.

At the end of the 19th century dead body was seen as something abandoned, therefore without the owner. It was regulated by the criminal law that mistreating the body is a crime, so body was not seen as a property.¹²

Later this view was shifted, because there was duty derived from common law to bury dead body. That was seen as “pseudo-property”. Those who were entrusted with the important task to comply with the persons last wish, or had to deal with disposition of property and/or possessions also got the obligation to deal with the corpse.¹³ One could argue that such rule was the informal property right.

Informality was explained and justified by the idea that by naming the body as the property, relatives would have the “control” over the body of dead relative. But by limitations they just had a right to possess the body until the burial, they can't decide on other things, such as selling, giving away his body/body parts or donating the corpse to the science.

Today, it is clear that there is no property in dead body, but it is still not clear which principles control ownership of the dead body.¹⁴ Parallel to moral rights within the copyright scope of intellectual property – which as an inherent expression of the human self can also not be transferred to third persons –¹⁵ the body forms also after the death of a person a unique entity which till that time had defined the physical existence of a human being. Truthfully law probably do not care about this aspect, because living matters more. But positive side to that is the fact that dead still body has right to be protected from harm, exploitation etc.

Bodies donated to science are mainly used for medical training and research.

“But some are turned down because they are not suitable for educational use, for example if there has been a post-mortem and the body has already been dissected, or because the person has had a particularly destructive form of cancer, or if they have had an organ transplant. Potential donors must also make their wishes clear in their lifetime.”¹⁶

That is believed to be a good sign.

BODY DONATION AND US

US is really the land of the opportunities. Since they don't suffer from the shortage of the land (for the graveyards, mausoleums etc.) as EU does, there are hundreds of possibilities how person's body can be disposed. Still many are interested in donating their body in order it to be used towards the scientific progress.

Medical schools and research institutions in the U.S. depend on the generous donations of Americans for the cadavers used for research. Unlike organ donation, body donation involves donating your entire body for medical research and training. Body donation is regulated by state, so whole process entirely dependent upon where person lives.¹⁷

In us body donation is the possibility to donate body directly to the medical school or third party organisation. Those organisations will later find the research institution to which body can be

¹² Supra Nota 9, p 21.

¹³ Supra Nota 9, p 22.

¹⁴ Ibid.

¹⁵ For details on the exercise of moral rights see Hoffmann et al., *The Exercise of Moral Rights by Non-Authors*, p. 108-125.

¹⁶ Jamieson, S. (2016) British people donating bodies to science to avoid funeral costs. Accessible: <http://www.telegraph.co.uk/news/uknews/12090335/British-people-donating-bodies-to-science-to-avoid-funeral-costs.html>, 7 January 2018.

¹⁷ TalkDeath (2017) Donating Your Body in the United States. Accessible: <http://www.talkdeath.com/donating-your-body-in-the-united-states/>, 7 January 2018.

donated, negative side for that is the fact that institution may not be the one donor really wanted and as some report finding the institution, usually means selling, which does not seem like an ethical thing to do. It's really not! Whole thing is turned into the business then.

Donating your body to science is actually a complex and tightly regulated process.¹⁸

"It's a very stringent system for donating your body for medical teaching. After all, deceased human tissue is potentially very dangerous in terms of biological hazards such as bacteria or other pathogens, and its use is strictly regulated by the Human Tissue Act. If your remains are going to be dissected and studied by numerous young medical students or trainees, their safety is paramount. Ergo, you can't donate your body if you succumbed to some communicable illness, or anything that doesn't have a known cause but which may be communicable, which means most terminal brain disorders exclude you from donating your body (both because of possible risk and because donation requires the informed and rational consent of the individual, and a neurological disorder confuses this issue)."¹⁹

BODY DONATION AND EU

In most EU countries using the body or using the right terminology – cadaver for the medical education or research is a crime. There must be a really strong basis for justifying such act legally and ethically.²⁰

One of such justification is believed to be the persons own wish to be used for scientific purposes. As stated by the E.Mayer, in Austria such use of a corpse can be justified in cases where everyone responsible for the persons funeral fail to bury the person, thus municipalities get the right to give body over to the special department.²¹

There are rules concerning the transplantation of the body parts, including the one that you just can't leave your body part to the relative. If you want to be the donor, special organisations will deal with the "distribution" of the parts.

What concerns the disposal of the whole body, person can decide if he want to be buried, be a donor or donate whole body to some kind of institute. To be clear, institute which has some scientific goals to achieve with the "help" of the donated body.

In case of the EU main point lies in the right of the deceased to make such decision, general idea (law) is that it comes from the "general personality rights".(Austria, Germany)²²

Personality protection doesn't end with the death, if person wished to be donated for medical experiments, then his wishes must be "granted", but since dead can't carry out his wishes, all manipulations, actions etc. with the cadaver must be performed by someone else. That someone is the one who got the rights from the person, when he was alive or those rights are received by the law.²³

Ethically valuable experiments, needed for the life of others are seen as ethically valuable and needed. If person gave his body for such purpose, then for example looking into the manufacturing

¹⁸ The Guardian (2012) Donating your body to science: a beginner's guide. Accessible:

<https://www.theguardian.com/science/brain-flapping/2012/oct/31/neuroscience>, 7 January 2018.

¹⁹ Ibid.

²⁰ The legal and ethical framework governing Body Donation in Europe– 1st update on current practice.(2012)

Special artivle accessible:

https://www.researchgate.net/publication/233761068_The_legal_and_ethical_framework_governing_Body_Donation_in_Europe_-_1st_update_on_current_practice, 7 January 2018.

²¹ Ibid.

²² Supra Nota 18.

²³ Ibid.

of the medication for the health of others is allowed, but let's say making soap from cadaver is ethically wrong and action is punishable.²⁴ Problem is that "There is no general regulation for handling the cadaver to this day and each body donation centre has its own regulations" Some EU centres have no regulations, just some internal rules and/or formal procedures.²⁵

Now comes the part where everything may go wrong and from where some concerns are arising. Is there even a smallest chance that someone can use the body donated to them with bad intentions? Is there a possibility that donation centre has bad intentions from the beginning? Further analyse of the topic will hopefully show that those concerns are not true.

Surprisingly, considering the society's view on this topic, donation of one's body seems to be a rising tendency. For example, in Dutch body donor registrations in 2012 was 16 000, which means that demand of the institutions is met.²⁶

Troubling part for the relatives and society is not knowing what will really happen to the body. Some are cut in pieces, those pieces can be used in different time, or preserved for years, other parts are cremated after the short time.²⁷ That's why even if the popularity of the donation is rising, society can't fully agree with such procedure.

Best example of idea that donating your body for the science is not acceptable, seems to be shown by the Turkish example. There is sharp lack of cadavers in medical institutions, religion does not seem to be the main reason for this, but people prefer the classical burial instead of the idea of being useful for the science.²⁸

SELLING THE BODY? ("WORLD'S LEADING WHOLE-BODY DONATION PROGRAM,")²⁹

Ethical beliefs and idea that donation of body is for common good supposed to stop such behaviour or to be precise masked and covered it.

But in every herd there really seems some black sheep. US company (to be precise one of the 2 biggest private companies which supposed to connect donors and medical schools etc.) decided to "maximize profits from the sale of human bodies donated to science. Maximization was achieved by using effective business model. The company's model for ensuring quality: McDonald's Corp."³⁰

And similarly to McDonalds, it really was a fruitful model, because this private company got really rich by selling the bodies. (Whole body was priced starting from the 5000 dollars.) Talk about being ethical.

Documents, reports etc. showed that by selling donated bodies they earned millions.³¹

Besides selling the bodies company organises medical training seminars for doctors, which is not entirely bad because doctors can improve their skills, but whole idea of body donation is shifted towards negative side.

Body donation is distinct from organ donation, the lifesaving process that enables surgeons to transplant hearts and kidneys from the recently deceased. It's also separate from the harvesting

²⁴ Ibid.

²⁵ Ibid.

²⁶ Supra Nota 18.

²⁷ Ibid.

²⁸ Supra Nota 18.

²⁹ Science Care (2015) Accessible: <http://www.sciencecare.com/about-science-care/>, 7 January 2018.

³⁰ Shiffman, J., Grow, B. (2017) How an American company made a fortune selling bodies donated to science. Accessible: <https://www.reuters.com/investigates/special-report/usa-bodies-science/>, 7 January 2018.

³¹ Ibid.

of tendons or bones from cadavers to repair joints in the injured or ailing. Those practices are strictly regulated by the U.S. government. Selling organs and other body parts for transplant is against the law.³²

It is not illegal to do such things (by law), but people who had idea to donate the body for the science don't have idea that their body or parts will be sold similarly to a loin in the mall.

People who agree to donate their body don't get paid, but they still choose private companies because of the aggressive marketing and getting such benefits as picking up the body and transporting it to the company for free.

This means that many schools don't get donations and can't train their students.

Although the company's donor consent forms state that "Science Care is a for-profit company," they do not explicitly disclose that bodies or parts will be sold.

That brings us to families of donors who also were surprised by that fact. As it turns out many families did not have any idea that body will be sold. They agreed with the idea of the donation and were ready to part with the loved ones with the idea that many people will benefit from that.³³

ETHICS AND BODY FARMS

Human decomposition research facilities which are located outdoors are currently located only in US and Australia. UK also attempted to open one, but failed. They still use animals for similar testing. And that decision is also understandable, it is hard to justify letting human body rot under the sky, in the water, hang on trees, left under the bushes etc.

Such practice is needed for medico-legal purposes by researching so called biological profile, it is needed especially for identification of unknown bodies, another reason is to help forensics to understand the reasons behind the persons' death. By observing the decomposition of human body, professionals are able to gather the data needed in order to get the clear understanding about the processes involved in decomposition.³⁴

It is believed that in order to get the necessary data, each state (or country) should have own body farm, because even one-degree difference in temperature of the air, soil type and similar factors could impede a barrier in finding out the real reason behind persons' death.

Body farms are needed, "physical/biological anthropology" is involved in identifications of unknown remains in case of the mass burials excavations, therefore their data can be potentially crucial in case of mass disasters or human rights projects.³⁵

But problem lies in the fact that researchers working in body farms don't have a lot of "standards and best practices" to lean on during their work. Therefore, ethical treatment of human remains in such facilities can be under a question. In US, such research can't fit under the federal guidelines which include working with (live) human subjects and although there are guidelines for animal (mostly pigs) body farms, it is clear that animal research, most definitely can't be used as guideline on how to treat the human remains in body farms.

As mentioned before, even most universities don't have guidelines on how to work/treat the cadavers (they do have some rules on disposition of remains and how long should the body be kept), but in case of body farms even those rules can't fit into the framework of their work. Bodies in body farms must be studied for a long time, several years even, disposition of remains is also a lot

³² Supra Nota 28.

³³ Supra Nota 28.

³⁴ Natalie R, Langlely, Maria Teresa A. ()Forensic Anthropology: A Comprehensive Introduction. 2nd edition, NY: CRC Press, 18-19.

³⁵ Ibid.

different. So truth is that some studied bodies, after the full circle of decay, will remain in those “gardens”.³⁶

Right now it doesn't sound as a big problem, because there are few of such facilities, but what if such research facility decides to close its doors, is it 100% sure that bones remaining outside or in the ground will be collected correctly? Concern is that remains may be left behind.

In 2013 there was an offer to create special entity, which would promote scientific validity, improve federal coordination and reduce fragmentation³⁷ (so connect body farms with for example forensic science, making it into part of something bigger instead of keeping it as something special and separate).

USING DONATED BODY FOR TEACHING/SCIENCE

Dead body needs similarly to live body ethical consideration towards it. Most donated bodies are used for dissections- study of anatomy or/and structure of the components of the body. Such study can't be conducted without opening the body or cutting it to sections.³⁸

Some argue that such procedure with nowadays technology is not needed. Teaching future doctors is possible by using special computer programs and robots. So those who argue that experiments on dead body is unethical do have supporting pillar to argue that scientific (in this case medical) benefit can be achieved using other methods.

This argument is important because from moral point of view cutting cadavers into pieces and conducting study, experiments etc. on dead is ethically wrong altogether.

Everything is so connected that it is important understand that the way the dead body is treated influences how people alive are perceived.³⁹ Doctors, scientist who treat cadaver as an empty shell or piece of meat will sooner or later lose respect for the living.

Disrespecting the cadaver means discourtesy for the dead himself/herself. So when using the donated body for scientific purposes, ethical side should always remain strong. Respect for the body should remain, yes from legal point of view there is no property in dead body but moral-ethical considerations towards the dead and their families needs proper attitude towards donated cadaver.

Legal justification of experimenting with donated body can be derived only from the circumstances that those actions are mostly (mostly because some still are not, like body farms) strictly controlled.

Body donation and everything surrounding it can only be accepted because of benefiting science as a whole.⁴⁰ So for the common good. Compared to the early dissections (no consents, do what you want), nowadays unjustified mutilation of the cadaver can't be not only performed but also dreamed of. If manipulation of the body exceeds moral/ethical boundaries and set rules, action will be punished by law.⁴¹

³⁶ Bytheway, J.A. (2015) The Ethics and Best Practices of Human Decomposition Facilities in the United States.- Forensic Science Policy & Management: An International Journal, Issue 3-4, Vol. 6, 59-68.

³⁷ Supra Nota 32.

³⁸ Morar, S., Dumbravă, D.P., Cristian, A. (2008) ETHICAL AND LEGAL ASPECTS OF THE USE OF THE DEAD HUMAN BODY FOR TEACHING AND SCIENTIFIC PURPOSES.- Romanian Journal of Bioethics, Vol. 6, Issue 4, 75-83.

³⁹ Ibid.

⁴⁰ Supra Nota 36.

⁴¹ Supra Nota 36.

Grey area of body donation is the possibility to donate the body by the family or legal representative. Study shows that most of the donation are made by the person himself/herself, but in case of the second possibility it is important to look into the motivation behind such decision.

High funeral costs are surprisingly the biggest motivator behind such decisions and that is ethically wrong. But in the states where “demand exceeds the supply”, such donations are accepted.⁴²

That's why actions of the private companies who “collect” the bodies and sell them to institutions are even more frowned upon. The materially conditioned donation is against the laws and ethics.

POSITIVE SIDES

In every situation there can be negative and positive sides, in this case positive sides can also be seen- some institutions comply with the request of the donors. Such request may be the tree planted in their honour, small sign in the institution or the request that after the study etc., or after some time, their body will be still given back to the family.

Some institutions cover all cost connected to funeral (within concrete budget), cremation and burial is common one. So for the family of the donor this option of donating, will save money.

In addition, most medical schools now hold memorial services to pay tribute to the cadavers that are used each academic year. These services thank the donors and their families, but are also intended to give closure to the medical students who have worked with the cadavers over the year. Respecting the cadavers and acknowledging the generosity of the donors is something that is highlighted throughout the medical students' studies.⁴³

Another bigger change (even with the 80s Turkey example) is that most of the cadavers are donated voluntarily and consent is given by the person himself on his lifetime, bodies of homeless, mental patients etc. without the families are usually buried by the local governments without donating them to the science.

It is also certain that allowing experiments, tests, tracking decomposing of the bodies is really needed step in order to keep science and medicine evolving. Thus, laws should also keep progressing even more, or rather quicker in that direction.

Letting body rot under the open sky could seem unethical (is seen unethical by many), but it should be also seen as fuel for science progression.

CONCLUSION

Task of this work was to find out if scientific benefits outweighing the ethical and legal issues in case of the bodies donated to science?

Many believe that in era of modern technology it is not ethical to use real body for medicine developers, different bio-skills laboratories, cryonics organisations, body-farms and other similar institutions. Other disagree, because it is stated that at this moment it is early to rely on the

⁴² Ibid.

⁴³ Tanner, L. (2013) Cadavers honored in med students' labs. Accessible: <https://www.usatoday.com/story/news/nation/2013/01/29/cadavers-memorial-service/1873905/>, 7 January 2018.

computers/robots simulating the person body. Cadaver dissection is “the best method for anatomy teaching, especially in the case of specialists in surgery fields”.⁴⁴

There are laws and regulations and ethical beliefs on how the body should be treated, most working with the cadaver respect the body and although the body as property is not connected to the dead person, or rather there is no such thing as property in case of cadaver, they still connect the body with person as a whole and try to be respectful similarly to live person.

Horror stories from the past (medieval and even WWII) or from the movies, where medical students “play” with the cadaver are not the case.

There still is problem of missing (not complete) regulations, especially in the field of body farming, and there is no specific law/regulation for all universities on how to treat the body, but as mentioned above mistreating the body does not seem to be present, at least there are no known cases.

That seems to be a good sign, but when compared with a funeral house which do have strict regulation on handling the dead, study shows that there are many cases of violating the rules by the funeral houses.

That in turn could potentially mean that not having the regulations is also not having the needed control over the process and cases of mistreatment the body is just not known for the public.

Biggest problem in this field are private companies who use aggressive marketing, getting close to the older or lonely people in hospitals etc. and not informing the donors that their body will be sold for the institution who pays the best price.

Such action is far from ethical, but unfortunately lack of the laws (even compared to donation of the organs), show how far behind laws on donation the whole body after the death are.

Still, scientific benefits really are overweighing the ethical and legal issues, because it is not possible to collect the data, teach surgeons without the real body, and in the end everyone is benefitting from such research.⁴⁵

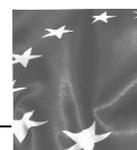
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⁴⁴ Supra Nota 36.

⁴⁵ See also: Kerikmäe, T.; Mürsepp, P.; Särav, S.; Chochia, A. (2017). Ethical Lawyer or Moral Computer – Historical and Contemporary Discourse on Incredulity between the Human and a Machine. Вісник Національної академії правових наук України, 2 (89), 27–42.

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The Possible Implementation of the Concept of E-democracy: Positive and Negative Aspects

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Abstract: *With the development of the technology, the concepts of e-Governance and e-Democracy have emerged. This research paper firstly examines the concept of e-Governance and the issues concerning it, then moves on to introduce the development known as e-Democracy. While discussing the essence of e-Democracy, the paper focuses on topics such as the aspect of democracy online and the concerns -namely social, ethical and legal- about e-Democracy. Lastly the paper explains the process of e-Democracy while introducing the e-Voting and e-Consultation with their advantages and disadvantages.*

Keywords: *e-Democracy, e-Governance, e-Voting, e-Consultation, Ethics of Law and Technology*

INTRODUCTION

Technological world develops continuously and introduces new advancements. One purpose of it is to make life easier and more convenient. Since quite everything is happening online and can be done through the Internet, there is no question why everyday services should not be provided online. Therefore, the concept of e-Governance has emerged to provide services for citizens online, improve the availability and accessibility of these services and enhance the interaction between people and the government while allowing the exchange of information. e-Governance constitutes a beneficial mechanism since it aims to make services more convenient, efficient and improve the transparency of the government. However, the term itself is not yet commonly defined and hence many countries are struggling to understand what e-Governance is all about and how to implement. Even though it has many advantages and has good intentions, it confronts some issues and difficulties.

The Internet is widely used for everyday purposes, however, it is being more and more used for communication in the political arena. Of course, next steps are always taken and e-Democracy seems to be one of them. e-Democracy forms a crucial part of e-Governance and aims to increase citizens' participation in the political process and therefore makes them more powerful by allowing people to be active in democracy and giving possibilities to say and express themselves more. Moreover, governments are using ICTs to enable different services under e-Democracy such as e-Voting and e-Consultation. However, e-Democracy is far from perfect and has its issues. Therefore, e-Democracy may not be ready for every country and the implementation of it may take a lot of time.

This research paper firstly examines the concept of e-Governance and then moves on to introduce the development known as e-Democracy. While introducing, the paper analyses issues concerning e-Democracy to come to a conclusion whether e-Democracy is yet a viable and possible solution and whether it brings enough advantages to transfer a traditional democracy to a big and wide cyberspace.

1. INTRODUCTION TO E-GOVERNANCE

Before going into the topic about e-Democracy it is necessary to introduce the phenomenon of e-Governance which is the base for e-Democracy. Furthermore, in order to start analysing the

concept and benefits of e-Governance, it is important to make difference between the terms e-Government and e-Governance. Government is considered to be the institution that forms the heart of the state while its interaction with citizens is what constitutes governance.¹ Meaning that the government is simply the institution that offers certain services to the public, as the governance is the interaction in society.² Therefore, e-Governance refers to the communication between citizens and the government and facilitates citizens' participation in policy making.

In today's world, e-Governance is a worldwide phenomenon and represents a feature of a modern governance where the relationship between the government and citizens is put first and regarded as a crucial thing.³ e-Government uses Information and Communication Technologies to enhance the accessibility, quality and cost-effectiveness of public services and facilitate the interaction between citizens and the government through offering greater participation possibilities in government processes.⁴

Information and communication technologies are already widely used by governmental bodies, however, e-Governance offers and includes much more by making public services more available and efficient for people and by enabling citizens and businesses to interact with the government more easily.⁵ Estonia can be seen as an excellent example of modern technological solutions⁶ and a country that has successfully implemented e-Governance. In Estonia e-Governance offers a lot for citizens, provides services and makes life more convenient. Estonia is the named the most advanced digital society in the world since it has a functioning e-Governance, e-Voting, digital signatures, most of the public services are provided online and available all the time which has changed Estonia into e-Estonia.⁷

Moreover, e-Governance allows digital signing. Unfortunately, it seems to be not a widely used possibility, currently, Estonia is the leader in providing and allowing digital signatures. Therefore, there is an issue that if a document is signed digitally in Estonia, will other Member States recognise that signature. Although, the EU is moving towards a digital market and aims to make digital signatures recognisable throughout the EU. Digital signatures are equal to a traditional signature and the law does not differentiate between them. Meaning that if a person has signed something digitally, it is the same as if he would have signed it in person and on paper. However, from the legal point of view digital signatures need to have special provisions that lay down how these technologies can be created and used, moreover, clear definitions need to be set down.⁸

Due to depending on technology, e-Governance cannot go around security issues, however, security needs to be protected in order to offer a secure e-Governance. Security issues involve authenticity of the information which can be secured by digital signatures, confidentiality of any transaction or information which is important for a successful e-Governance in order to protect information from unauthorised parties, assuring integrity of the information which important and

¹Amjad, M. (2004). The Impact of Internet on E-Democracy and E-Governance – *International Studies Journal*, Vol. 1, No. 2.

²Kerikmäe, T. (2001). Estonian constitutional problems in accession to the EU. In: Alfred E. Kellermann; Jaap W. de Zwaan; Jenö Czuczai (Ed.). *EU enlargement. The Constitutional Impact at EU and National Level* (291–300).. The Hague, The Netherlands: Springer.

³Morison, J. (2004). E-Democracy: Online Civic Space and the Renewal of Democracy – *Canadian Journal of Law and Jurisprudence*, Vol. 17, No. 1, 130.

⁴*Ibid*, 129.

⁵European Commission. *eGovernment & Digital Public Services*. Accessible: <https://ec.europa.eu/digital-single-market/en/policies/egovernment>, 5 January 2018.

⁶Kerikmäe, T; Särav, S. (2016). Legal Impediments in the EU to New Technologies in the Example of E-Residency. *Baltic Journal of Law & Politics*, 8 (2), 71–90.

⁷*e-Estonia*. Accessible: <https://e-estonia.com/>, 6 January 2018.

⁸Nyman-Metcalf, K. (2014). e-Governance in Law and by Law – *Regulating eTechnologies in the European Union Normative Realities and Trends*. (Ed.) T. Kerikmäe. Switzerland: Springer International Publishing, 36.

necessary to maintain data and prevent any kind of fraud, and lastly continuous availability which is necessary for effective functioning of the e-Governance since the Internet is opened 24 hours a day and therefore people should access the services and information at any time.⁹ Technologies themselves are neutral, they are neither good nor bad, the way they are used leads to bad or good outcomes, hence the human action is what assigns the value to the technology and actions have ethical aspects.¹⁰ Meaning that technology itself is neutral but all these security issues are caused by people and therefore it can be said that e-Governance is not the best solution due to having security problems and possibly not being secure.

It is obvious that when talking about e-Governance, then firstly technical side comes to mind and people do not really consider the legal and social sides of it, however, successful e-Governance depends on various aspects and therefore firstly it is necessary to determine what possibilities existing legal and administrative frameworks offer to move towards e-Governance solutions and whether changes are needed to support innovation.¹¹ Hence, the legal side is important and therefore needs to be considered carefully.

2. THE ESSENCE OF E-DEMOCRACY

2.1 e-Democracy as democracy online

As mentioned, then e-Democracy is a part of e-Governance. E-government, in general, delivers government services electronically, however, when talking about e-Democracy then it should involve some level of engagement through the Internet where citizens are included in the democratic decisions and policies.¹² Therefore, e-Democracy aims to increase public participation while e-Governance offers services and makes access to these services easier.

To start with e-Democracy, it is firstly important to note what is considered to be a democracy since e-Democracy should still remain democracy only transferred online. According to one view, then democracy entails a collective decision-making where everyone should have an equal right to participate in these decisions.¹³ This means then that citizens are equal and have control in the decision-making. Active participation of citizens in political processes is also important for democracy.¹⁴ e-Democracy should still remain more about democracy than the word „e” and the electronic means should simply be used to facilitate democracy and the engagement of citizens.¹⁵ Moreover, it is not enough to simply transfer traditional practices to the Internet and call it e-Democracy, the whole process needs more attention, care and understanding what these concepts actually mean and how to regulate them.¹⁶

The Internet has had a huge impact on the modernised democracy by introducing a type of democracy that includes active participation of citizens in political processes and policy-making

⁹ Kapoor, Sumit K., et al. (2010). Security **Issues & Policy in E-Governance** – *International Transactions in Applied Sciences*, Vol. 2, No. 4, 822-823.

¹⁰ Johnson, Jeffrey A. (2007). The Illiberal Culture of E-Democracy – *Journal of E-Government*, Vol. 3, No. 4, 87.

¹¹ Nyman-Metcalf, *supra nota* 6, 34.

¹² Anderson, L., et al. (2005). E-Government to E-Democracy – *Journal of E-Government*, Vol. 2, No. 1, 16.

¹³ Betham, D., Boyle, K. (2009). *Introducing Democracy*. United Nations Educational, Scientific and Cultural Organization. Accessible: <http://unesdoc.unesco.org/images/0018/001813/181392e.pdf>, 6 January 2018.

¹⁴ Amjad, *supra nota* 1, 7.

¹⁵ Anderson, *supra nota* 10, 16.

¹⁶ Hill, E. (2004). Some Thoughts on E-Democracy as an Evolving Concept – *Journal of E-Government*, Vol. 1, No. 1, 24.

through the use of Internet.¹⁷ The concept of e-Democracy in broad terms means the use of ICTs in democratic, political and governance processes and has emerged since governments and public administrations are trying to find new ways to engage people in democratic processes.¹⁸

Of course, e-Democracy has other crucial aspects such as newer versions of ICT to keep up with the development of e-Democracy and offer more and securer services and opportunities, additionally suitable legislation and financing, but one of the most important aspects is the interest of the government and the people.¹⁹ If the government is interested in e-Democracy, it will promote it, support it and make it as accessible and easy for people as possible. The government will themselves actively participate in it. If the public is interested in e-Democracy, it will develop further, become more common and widely used and ultimately will be successful. Moreover, the more people participate in the policy and decision making, the better policies the government adopts that actually meet the needs of the public and are necessary for the public since e-Democracy aims to enhance public participation on these issues that concern people themselves.²⁰

For a successful e-Democracy technical infrastructure, access to the Internet, and the Internet freedom are required, meaning that laws should allow free use of the Internet and there should not be any kind of bodies that block or restrict access to the Internet.²¹ Since e-Governance is quite much based on the Internet, then it must be regarded that online services are not available without access to the needed infrastructure and therefore the Internet should be fast and secure and also available at all times.²²

The technological world keeps on developing and whether we like it or not, at some point there can be a situation that traditional services will be replaced by e-services, however, it depends on whether people will actually start using the e-services and whether they have the knowledge and ability to use them.²³ Even though e-Democracy offers many ways to be included in the political world and make to more convenient, few people are actually choosing this kind of way to be engaged in the democratic process.²⁴ Therefore, the main question regarding e-Democracy concerns whether democracy is actually improved by applying technological advancements to democratic practices.²⁵

2.2 Issues created by e-Democracy

2.2.1 Social and ethical concerns

Even though e-Democracy has good intentions, it brings along some issues that need to be considered. One quite big disadvantage of the e-Democracy concerns the society itself and the inequalities in society which can undermine social equality. The Internet has divided between people since not everybody has the same conditions regarding online services. There are inequalities in Internet access based on income, age, education, living areas. It is a fact that people who earn more, have a bigger possibility of having a computer and access to the Internet. Moreover, young

¹⁷ Amjad, *supra nota* 1, 1.

¹⁸ Parvez, Z., et al. (2006). Towards building an integrated perspective on e-democracy – *Information, Communication & Society*, Vol. 9, No. 5, 612.

¹⁹ Dutt, Pawan K., Kerikmäe, T. (2014). Concepts and Problems Associated with eDemocracy – *Regulating eTechnologies in the European Union Normative Realities and Trends*. (Ed.) T. Kerikmäe. Switzerland: Springer International Publishing, 285.

²⁰ *Ibid*, 292.

²¹ Kneuer, M. (2016). E-democracy: A new challenge for measuring democracy – *International Political Science Review*, Vol. 37, No. 5, 671.

²² Nyman-Metcalf, *supra nota* 6, 49.

²³ *Ibid*, 48.

²⁴ Parvez, *supra nota* 16, 613.

²⁵ Johnson, *supra nota* 8, 88.

people know more about the Internet and can use it better and people who live in areas where the Internet access is always available are also in a better situation. Therefore, these people who do not have the access, knowledge or income will probably struggle to fully participate in everything that the Internet offers, including online services and e-Democracy.²⁶ Since information, campaigns, political news are online, some people will simply be left to make random, semi-informed choices about political issues and officials due to the lack of Internet and therefore they will not have the same opportunities to participate in e-Democracy which may cause a situation where inequality becomes a key feature in e-democratic society.²⁷ Therefore, from an ethical point of view, the conditions are not the same for everyone and some people are in a better situation.²⁸

Moreover, the digital division exists between developed and developing countries which can be referred to as the international digital divide and countries actually are divided digitally.²⁹ This can be the reason why developed countries are more up for e-Democracy and have possibilities of making it actually work. There is a connection between the level of technological development and advancement of e-Democracy, meaning that more developed countries can offer better technological solutions and therefore can provide more online services to citizens and promote e-Democracy. When it comes to supporting the improvement of e-Governance on the European level, countries in the EU could share ICT solutions and hence help the development of e-Governance systems across the EU.³⁰ It would decrease the gap between states and their availability of online services.

Additionally, since e-Democracy is technology based and is quite complicated, it needs supportive tools for people so that they could understand the content and navigate through the content.³¹ No everyone is Internet genius and can easily navigate through the massive amount of data and operate in the online services. Therefore it is important to develop easily accessible services that are understandable and also provide support for people not knowing how to use them.

2.2.2 Legal concerns

In addition to social and ethical issues, e-Democracy presents various legal concerns. One shortage is the lack of international conventions or other instruments that would clearly define concepts and terminology related to e-Governance in order to avoid confusion and misunderstanding between different states.³² The balance between law and technology has always been an issue since it is nearly impossible to regulate a technology that is unknown and on the other hand, it is difficult to change the settled law, therefore any changes in law and technological development should inseparable and always cooperate.³³ Things in the society should be regulated in order for them to function properly and everyone to understand how to use them. However, changes in law require time and a lot of effort, consideration for them to be proper, coherent and well designed. Since e-Governance it quite a new development, legislators are confronting a

²⁶ Hill, *supra nota* 14, 27.

²⁷ Johnson, *supra nota* 8, 101.

²⁸ Kerikmäe, T.; Müürsepp, P.; Särav, S.; Chochia, A. (2017). Ethical Lawyer or Moral Computer – Historical and Contemporary Discourse on Incredulity between the Human and a Machine. Вісник Національної академії правових наук України, 2 (89), 27–42.

²⁹ Amjad, *supra nota* 1.

³⁰ Säär, A., Rull, A. (2015). Technology Transfer in the EU: Exporting Strategically Important ICT Solutions to Other EU Member States – *Baltic Journal of European Studies*, Vol. 5, No. 2, 6-7.

³¹ Dutt, *supra nota* 17, 285.

³² Nyman-Metcalf, *supra nota* 6, 36.

³³ *Ibid*, 37.

question on how to include e-Governance into law.³⁴ Although laws should regulate this area thoroughly, the laws should not over-regulate technological advancements since it will hinder the further development since technology moves forward really fast.³⁵

Furthermore, since e-Democracy is Internet and technology-based, it operates in the cyberspace which has its problems. Firstly, there is an issue of transparency vs security. The development of e-Democracy can face a problem due to the lack of trust in online security since there are malicious information and communication in the cyberspace which may lead to a number of worries, starting with hacking, malicious software that modifies or destroys data, surveillance of communications.³⁶ Since e-Democracy aims to enhance the interaction between citizens and the government, it tries to improve transparency and by this makes information available and therefore the security issues become relevant.

Even though e-Governance aims to improve the accessibility of information and services, to increase the participation of people in the decision-making and make the government more transparent and effective, it presents a threat to privacy and personal data. European Union instruments protect privacy and personal data quite strongly, however, the emergence of technology creates these issues online as well which requires the protection of data online. Current Europe is really protective over fundamental rights and due to e-Democracy these rights can be violated since digital tracking and surveillance occur online and for example, privacy can be violated online because of government surveillance which, however, can deter people from participating in political life.³⁷ Through surveillance, governments can monitor what people are doing online, what services they are using, what information accessing and providing, how voting which in turn can lead to personal information being leaked out.³⁸ Technology improves the access to information which in turn is a threat to privacy and therefore the purpose of e-Governance should be balanced against the protection of privacy and data protection.³⁹ Moreover, the implementation of e-Democracy should comply with the protection of fundamental rights, would maintain citizens' trust in government and make processes transparent.⁴⁰ Data protection laws should be regarded as important since electronic data is seen less secure than traditional data which may deter people from using online services due to the concerns about data and system security.⁴¹

3. THE PROCESSES OF E-DEMOCRACY

3.1 e-Voting as an aspect of e-Democracy

Since e-Democracy emphasises the role of citizen participation in political process, e-Voting forms a crucial part of it. Voting is considered to be one of the main tools that enable citizens to exercise their right to participate in political process,⁴² and direct democracy has played a crucial

³⁴ Nyman-Metcalf, K. (2017). E-Governance: A New Reality for Legislative Drafting – *International Journal of Legislative Drafting and Law Reform*, Vol. 6, 39.

³⁵ *Ibid*, 40.

³⁶ Xiudian D. (2007). Prospects and Concerns of e-Democracy at the European Parliament – *Journal of Legislative Studies*, Vol. 13, No. 3, 381.

³⁷ Dutt, *supra nota* 17, 288.

³⁸ *Ibid*, 289.

³⁹ Nyman-Metcalf, *supra nota* 6, 43.

⁴⁰ Dutt, *supra nota* 17, 290.

⁴¹ Nyman-Metcalf, *supra nota* 31, 41.

⁴² Roots, L., et al. (2016). E-Citizenship Opportunities in the Changing Technological Environment – *The Future of Law and eTechnologies*. (Eds.) T. Kerikmäe, A.Rull. Switzerland: Springer International Publishing, 51.

role in the process of regaining independence of the Baltic States.⁴³ It is a really interesting achievement in e-Democracy technologies since it provides an opportunity to vote remotely by using the Internet with results that are in every way binding which is said to be the ultimate way to use ICTs for democratic participation.⁴⁴ For example, in Estonia e-Voting is really common and actually widely used. Moreover, e-Voting is seen equal to traditional voting and has exactly the same effect and power as a traditional vote. Even though e-Voting is not widely used and implemented, it can be successful in other countries also, as Estonia can be seen a good example since they have met all technical requirements and made people comfortable using e-Voting people have accepted it.⁴⁵

As e-Voting is part of e-Democracy, it also has its advantages. e-Voting is convenient and saves time since people can do it from anywhere and they do not need to attend the physical location. It also makes voting accessible for people who have difficulties attending the traditional voting, for example, disabled people or people from rural areas.⁴⁶ By this, it tries to achieve equality between possible voters. However, there still exists a divide between people since not everyone has the access to computers and the Internet and has the ability to use the provided service.

However, as all technologies, e-Voting also has its disadvantages due to system vulnerability and security. e-Voting may create situations where it is possible to add or delete votes or select the same candidate more than once due to hackings and system malfunctioning.⁴⁷ e-Voting also raises concerns about data privacy since voting online maintains data that otherwise on paper would not be recorded.⁴⁸ Since people need to identify themselves before voting, they provide personal information which creates the need to protect this data. Moreover, concerns about monitoring online votes and personal data may cause a situation where people decide to vote differently, for example, less radically or according to the opinion of the majority and therefore alter their actual opinion.⁴⁹

From a purely ethical point of view, the negative side of e-Voting is the issue of independent and free voting. When people vote in the traditional way, they enter the booth alone and can make a fully independent decision without any interferences and anyone pressing their opinion on them. Hence, voting somewhere else takes away the private environment and people may make different decisions due to being monitored and indirectly forced to vote this way. Therefore, e-Voting may cause ethical questions on whether the vote casted is actually the genuine vote of the voter.

3.2 e-Consultation to allow citizens' active participation

e-Consultation can be seen as another aspect of e-Democracy. e-Consultation is a process that allows the collection of opinions of target groups on certain issues and therefore adopted decisions may be either directly or indirectly influenced by people themselves.⁵⁰ In Estonia, for example, the e-Consultation system provides a possibility for everyone to follow how the draft legislation is

⁴³ On the role of referendums in this region see Thomas Hoffmann, *Unmittelbare Demokratie im Baltikum*, p. 309–327.

⁴⁴ Nyman-Metcalf, *supra* nota 6, 37.

⁴⁵ Dutt, *supra* nota 17, 317.

⁴⁶ *Ibid*, 305.

⁴⁷ Oostveen, A.M. *et al.* (2003) *Evoting technology is not neutral!* Accessible:

https://www.researchgate.net/publication/221386554_E-voting_technology_is_not_neutral, 6 January 2018.

⁴⁸ Schwartz, Bryan P. (2013). Establishing a Legal Framework for E-Voting in Canada – *Manitoba Law Journal*, Vol. 36, No. 2, 318.

⁴⁹ Oostveen, *supra* nota 43.

⁵⁰ Dutt, *supra* nota 17, 289.

proceeding, search documents, participate in public consultations and express their opinion, give comments on documents that are in the consultation and discussion stage.⁵¹

Even though Estonia has a functioning e-Consultation system, it is trying to improve processes, accessibility and add something extra. Therefore, Estonia has made changes to the e-Consultation system. It recently made changes so that the information concerning the preparation of draft legislation, its proceedings and options regarding involvement is available at an early stage so that everyone who wishes could participate in the decision making from the start.⁵²

This process is seemingly really beneficial and one argument for the implementation of e-Consultation is that this process allows people to express their ideas in a much more relaxed and free environment where people are not afraid to express their ideas especially on sensitive issues such as drugs, violence or child abuse.⁵³ However, e-Consultation will not replace the personal touch which gives the solution a human touch and more human understanding and therefore countries that have a strong tradition of a personal relationship between citizens and politicians will have a hard time accepting the idea of transferring this to the digital world.⁵⁴

CONCLUSION

The development of ICTs enables new ways of communication and therefore provides citizens a possibility to access more information, use services more conveniently and take part of political decisions. e-Governance does just that and also aims to make the government more transparent and accountable to the people. However, like all technological developments, it has issues regarding the cyberspace itself including security and threats to privacy and data.

If everything is done through the internet and the country aims to be paper-free, it needs to take into account cyberspace threats such as hacking, attacks and leakage of information. Security issues concern vulnerabilities in systems that allow the unauthorised access to information and therefore present a threat to data security. Moreover, transparency enables surveillance by governments themselves which causes a problem regarding the privacy of citizens. Since there are issues that e-Democracy faces, the consideration and implementation of legal aspects are important. Proper e-Democracy requires safeguards and regulations that deal with security issues, protect privacy and data. Hence, the legal side of e-Democracy is crucial.

From the ethical point of view, e-Democracy brings the issue of digital divide since everybody does not have the same possibilities and conditions to use the Internet and be involved in the political process. It deepens the inequalities in the society by causing a situation where the disadvantaged people cannot fully participate in e-Democracy and cannot enjoy the benefits that online services offer. Moreover, the digital divide exists between countries since not all have the same technological advancements, solutions and possibilities. Therefore, the countries cannot offer the same solutions and benefits for their citizens.

e-Democracy has a change of increasing citizens' active participation and involvement in political process and decision making. It may also enhance the flow of different voices and opinions. However, it is not guaranteed that transferring democracy online and adopting technological solutions will increase the participation of people in the democratic process. Moreover, for a

⁵¹ Republic of Estonia Government Office. (2016). *Significant additions made to the e-Consultation System*. Accessible: <https://riigikantselei.ee/en/news/significant-additions-made-e-consultation-system>, 7 January 2018.

⁵² *Ibid.*

⁵³ Griffin, D., et al. (2007). *e-Democracy: An "e" Too Far? – Developments in e-Government : A Critical Analysis*. Amsterdam: IOS Press, 92.

⁵⁴ *Ibid.*

successful e-Democracy interaction and acceptance are crucial. Without public accepting e-Democracy and actually being willing to use and be involved in it, e-Democracy loses its purpose. Although firstly, in order for e-Democracy to be successful, e-Governance should have success and be accepted and used by people – a process which should be started at school/university, where more professional instruction on cyber-security and – as also national elections may be undertaken online worldwide – international law⁵⁵ would be a good first step.

In conclusion, e-Democracy has many aspects that need to be dealt with and regulated properly. Looking at the current situation of e-Democracy, it can be said that it is not a widely used solution and actually quite a few people have been engaged in this. Conclusively it may be stated that e-Democracy has a long way to go before it will be fully viable and applying technological solutions to traditional democracy will actually improve democracy and bring enough advantages.

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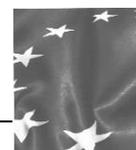
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Human Rights and Development of Technology

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Abstracts: *The purpose of the paper is to determine legal problems and issues within the aspect of human rights, in light of the rapid technological development. The research starts with an overview of current situation, explaining the how the development of the technology creates new legal questions that were not there before. This article intends to analyse the relationship and to identify several problems between human rights and the development of the new technologies, taking into account legal and ethical issues.*

Keywords: *Law and Technology, Human Rights, Ethics of Law and Technology, Data Protection, Privacy.*

INTRODUCTION

The search for the limits of human rights and freedoms may be difficult and present a source of conflict, whilst the development of science and technology is causing new problems. The mere fact of recognizing human rights and freedoms does not matter much if there are no procedures that allow everyone to effectively defend themselves against violations of these rights.¹

Recent technological developments have played a major role in the growth of many countries, in terms of economic and social systems. The advances in telecommunications and computer technology are now allowing people to connect easily and freely across continents, either for pleasure and socialization, or for business reasons. Today, anyone is able to get information almost about anything, instantaneously, by using, for example, Internet search engines. This takes leisure, business and education to a new level, allowing to conduct distant learning, freelance businesses and live communication with anyone around the world, making technological advances a vital factor for further development of economies worldwide.²

This, however, raises new issues in the area of human rights, in relation to data protection, privacy, security and other aspects. According to Weeramantry, the disciplines of law and human rights are unable to keep up with the rapid changes and developments in technology.³ This paper, therefore, is dedicated to the analysis of a current legal problem in the area of the intersection of human rights and development of technology.⁴

The aim of this paper is to determine legal problems and issues within the aspect of human rights, in light of the technological development.

The main objectives of the paper are:

To discuss the relationship between the development of technology and the human rights and the main issues and questions that arise from this relationship;

To analyse the issues of data protection and privacy;

To explore the methods of data protection.

The paper consists of an introduction, two chapters and conclusion.

¹ Kerikmäe, T.; Hamulak, O.; Chochia, A. (2016). A Historical Study of Contemporary Human Rights: Deviation or Extinction? *Acta Baltica Historiae et Philosophiae Scientiarum*, 4 (2), 98–115

² Myers, J. (1998). Human rights and development: Using advanced technology to promote human rights in sub-Saharan Africa. *Case W. Res. J. Int'l L.*, 30, 343.

³ Weeramantry, C. G. (1993). The Impact of Technology on Human Rights. Retrieved from: <http://archive.unu.edu/unupress/lecture4.html>

⁴ Kerikmäe, T.; Hoffmann, T.; Chochia, A. (2018). Legal Technology for Law Firms: Determining Roadmaps for Innovation. *Croatian International Relations Review*, 24 (81)

THE RELATIONSHIP OF HUMAN RIGHTS AND TECHNOLOGY DEVELOPMENT

The adoption by the United Nations in 1949 of the “Universal Declaration of Human Rights” was an important social, political and cultural event of global significance. The “Universal Declaration of Human Rights”, on the one hand, summarized the development of society (primarily Western European and North American), along the path of human emancipation, and on the other hand, minimal tasks are formulated whose fulfillment makes a person's life worthy.⁵ The subsequent adoption by various organizations (in particular by the European Community) of some other documents of this kind substantially supplemented the list of individual and group, civil, social, cultural human rights. The totality of these rights is the minimum conditions that allow to protect an individual from external encroachments, guaranteeing his autonomy, security, the possibility of free expression of will and behavior, education and minimum income. This is therefore that a person in any case has the right for and that the state is obliged to provide a person with. This is what ensures a minimum of human dignity.

According to the General Assembly's Declaration on the Right to Development. “The right to development is an inalienable human right by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural, and political development, in which all human rights and fundamental freedoms can be fully realized.”⁶

Weeramantry notes, that the main principals of promoting the right to economic, social, cultural, or political development with the use of the technology are as follows:

- 1) “Participation in decision-making regarding the introduction of a new technology”;
- 2) “Contribution to the creation of the technology in question”;
- 3) “Enjoyment of the development resulting from technology”.⁷

The development of new information technologies can be viewed as the representation of the right to freely distribute the information and the right to freely receive it, and the very emergence of these technologies can be viewed as a progress of free scientific search.

However, there are many issues arising from this. According to Afrikhanova, modern information technology is mediating the relationship between the recipient of information and its source, which greatly increases the possibilities for manipulating the consciousness of the users of such information. For example, when a person deals with the information that relates to his relationship with a close environment, he can always double-check it.⁸ The book text can also be taken critically: the book can be put aside and the reader can return to the text later or rethink it in the light of his own experience. Television acts differently: the words spoken from the screen disappear before the viewer has time to rationally evaluate the value of information, and the accompanying image has a suggestive effect, dulling the ability to critically reflect. Meanwhile, television, which has received a mass distribution, largely fabricates the image of reality for its consumers: by imposing a certain interpretation of events and even showing those events that in reality did not happen. Of course, a person can switch the channel or turn off the TV altogether. But modern life is such that most people will still be addicted to the TV. And those who are responsible for the transmitted information are free to give the information they consider necessary.

⁵ United Nations Universal Declaration of Human Rights. Retrieved from: <http://www.un.org/en/universal-declaration-human-rights/>

⁶ GA Res 41/128 of 4 December 1986. Declaration on the Right to Development. Retrieved from: <http://www.un.org/documents/ga/res/41/a41r128.htm>

⁷ Weeramantry, C. G. (1993). The Impact of Technology on Human Rights. Retrieved from: <http://archive.unu.edu/unupress/lecture4.html>

⁸ Arifkhanova, S. (2010). Manipulation of social consciousness through mass media. *Social Psychology*, 22 October. Retrieved from: <http://www.socialpsychology.org/download/111626/Article7PDF.pdf>

Internet users can communicate with each other, creating a special “virtual identity” that can be very different from the real self. In cyberspace, the boundary between the real and the unreal and imaginary is blurred. The reality of cyberspace in a number of relationships often turns out to be close to the reality of dreams. There is no clear idea of the border between the possible and the impossible, which is the essence of rational action planning.⁹

On the Internet there are no filters for information input due to the principle of complete freedom; all moral and censorship bans are lifted. On the Internet, there is a lot of information that has undoubted cultural value. However, there is a lot of useless and even harmful information. Some believe that this is the model of the future culture. But the fact is that activity in any sphere presupposes a system of filters or censorship; there are principles of prohibition, there are norms of activity, there is a division into good and bad, permissible and unlawful.¹⁰ If there is no such division, then the corresponding system collapses, and the activity becomes impossible. If the Internet in today's form is a model of a future culture, then culture has no future. So, the person has no future either, which is contradictory to basic human rights.

Mass media is regarded as a powerful phenomenon, according to Graber and Dunaway¹¹, but any power can not be absolute, it must be controlled – otherwise it becomes dangerous. One of the greatest philosophers of the 20th century, Karl Popper, author of the theory of “open society,” wrote at the end of his life that, if freedom of the press is not restricted, it will destroy the culture¹².

Thus, the person included in the modern system of mass communications turns out to be very pliable to all kinds of propaganda influences. This is used in modern PR and political technologies. The main goal of PR professionals is not to develop the rational abilities of a person, but rather to dull his critical reflection. Therefore, the old ideal of liberalism and democracy, where an individual freely and without any external pressure makes decisions on the basis of his own reflections, today seems less feasible than it was a hundred years ago. Modern information technologies provide new opportunities for manipulating consciousness, for suppressing human freedom.

Another important issue to consider is that the high rate of renewal of knowledge, which is one of the characteristics of the information society, entails rapid changeability of social structures and social institutions that embody this knowledge, types and modes of communication.¹³ Thus, many social processes are becoming something that only exists a relatively short time. The integration of the past and the future into a single chain of events, forming an individual biography and underlying the personality, turns out to be a difficult matter in some cases, according to Stieger.¹⁴ Thus, an increasingly complex social and technological mediation between the action and its result in modern society makes rational planning of actions difficult not only on the group, but even on an individual level, due to the destruction of many habitual norms, with the changed nature of social processes, the difficulty of integrating past and future, different communication flows and different systems of social interactions at the individual level.

⁹ Kerikmäe, T.; Mürsepp, P.; Särav, S.; Chochia, A. (2017). Ethical Lawyer or Moral Computer – Historical and Contemporary Discourse on Incredulity between the Human and a Machine. Вісник Національної академії правових наук України, 2 (89), 27–42

¹⁰ Leberknight, C. S., Chiang, M., Poor, H. V., & Wong, F. (2010, December). A taxonomy of Internet censorship and anti-censorship. In *Fifth International Conference on Fun with Algorithms*.

¹¹ Graber, D. A., & Dunaway, J. (2017). *Mass media and American politics*. Cq Press.

¹² Gorton, W. A. (2012). *Karl Popper and the social sciences*. SUNY Press.

¹³ Feather, J. (2013). *The information society: a study of continuity and change*. Facet publishing.

¹⁴ Stieger, S., Burger, C., Bohn, M., & Voracek, M. (2013). Who commits virtual identity suicide? Differences in privacy concerns, internet addiction, and personality between Facebook users and quitters. *Cyberpsychology, Behavior, and Social Networking*, 16(9), 629-634.

According to Ess, more and more individuals are emerging, characterized by a poly-identity or blurred identity, whose consciousness is fragmented and who can not answer the question of who they are, which is associated with the growth of neurotic and mental diseases.¹⁵

The threat to freedom arises in connection with the approach to the social state, which in literature is called “electronic society”.¹⁶ According to Bakardjieva, this term refers to a society in which new information technologies have a significant impact on the functioning of the economy, social life and even the personal life of a person and which arises in the world in connection with the process of globalization. In such a society, the boundary between “mine” and “not mine” is blurred. It follows from this that in such a society individual freedom will likely become more and more limited in the interests of certain social groups.¹⁷

Other issues, arising from the relationship of human rights and technology development are, for example, genetic modification of humans. In connection with the development of modern bio- and nanotechnologies, projects for the design of human body are being developed and discussed.¹⁸ Such projects include cultivation of “made to order” children with certain qualities, such as intelligence, strength, etc. This could lead to the discrimination of less gifted people and the idea of a civil society, universal participation in political life and equality of all before the law becomes challenged.

There are movements, called “transhumanism” and “immortalism”, supporters of these movements, which include specialists in the field of biology, genetics, sociology, nano-technologies and philosophy, proceed from the fact that with the help of modern science, in particular, genetic engineering, nano-technologies, computer and information technologies, gene and nervous system of a person and replacing a number of organs with artificial ones, you can first immensely extend human life, and then generally make a person an immortal being.¹⁹ In this case, the problem of death, so important for the whole historically existing culture, will lose all meaning.

However, the interference in the most complex gene and nervous structures of a person can be extremely dangerous and the results can be unpredictable. The results of such intervention can be very similar to the ecological catastrophe that arose from the technological transformation of nature. Instead of a more physically and mentally healthy creature, humanity can create a monster. But even if the humanity manages to resolve all the complex genetic and neural structures and accurately predict the effects on them, then there is no certainty that the created enhanced human will not destroy the existent culture and society with its notions of human opportunities, admissible and unacceptable, rights and duties – things that make us human. People used to dream of a more humane society, however, the society of enhanced people will be anti-human.

And if it would be possible to go even further and make the enhanced people immortal (which is another idea of the “transhumanists”), then this would have a number of fatal consequences. First, the need for the birth of new people would have been eliminated, since a certain number of immortal

¹⁵ Ess, C. (2012). At the intersections between internet studies and philosophy: “Who Am I Online?”. *Philosophy & Technology* 25(3) · September.

¹⁶ Bakardjieva, M. (2005). *Internet society: The Internet in everyday life*. Sage.

¹⁷ Bakardjieva, M. (2005). *Internet society: The Internet in everyday life*. Sage.

¹⁸ Francisca, C. (2014). Humans By Design: How Design Reconsiders the Human Body as a Material, a Medium, and a Site for Critical Interventions. Retrieved from:

<http://designresearch.sva.edu/research/designers-in-white-lab-coats-when-design-meets-scientific-research/>

¹⁹ Hughes, J. (2006). Human enhancement and the emergent technopolitics of the 21st century. *Managing nano-bio-info-cogno innovations*, 285-307. Hansell, G. R. (2011). *H+/-: Transhumanism and its Critics*. Xlibris Corporation. Ferrando, F. (2013). Posthumanism, transhumanism, antihumanism, metahumanism, and new materialisms. *Existenz*, 8(2), 26-32. More, M. (2013). The philosophy of transhumanism. *The transhumanist reader: Classical and contemporary essays on the science, technology, and philosophy of the human future*, 3-17.

enhanced people would be sufficient to solve the problems that would confront such a society. The endless life of the same creatures would minimize the possibility of social and cultural renewal (if indeed such non-human society would have a culture). Such important meaningful values of human life as caring for children and the elderly (for there would be neither those nor others), the understanding of another person and his problems (for these problems would probably also not exist), a love for another person that includes care and understanding of the beloved, awareness of the fragility of human life would disappear, such virtues as courage and heroism would lose their meaning, for they presuppose self-sacrifice and the opportunity to lose one's life. Thus, the disappearance of death means the disappearance of the meaning of human life. The transition to an enhanced human being is not the elimination of death, but rather the collective suicide of mankind, for this enhanced human is the murderer of the old version of a human. In this situation it makes no sense to talk about human rights, since they become inexistent.

There are some questions that arise in relation to this issue: Is the free choice of the subject sufficient to use him for such experiments? In general, does a person have the right to an absolutely free disposal of his body? Does the freedom of scientific research allow such manipulation of a person?

THE ISSUES OF DATA AND PRIVACY

One of the aspects of human rights that are affected by development of technology is the data protection and privacy. Conducting financial transactions using the Internet, ordering goods and services, using credit cards, access to private information resources, transferring telephone calls require an appropriate level of security.

According to Manral, confidential information that is transmitted over the Internet passes through a certain number of routers and servers before it reaches its destination. Usually, routers do not track the flows of information passing through them, but there is the possibility that information can be intercepted. Moreover, the information can be changed and transferred to the addressee in a modified form. Unfortunately, the very architecture of the Internet always leaves the possibility for an unscrupulous user to carry out such actions.²⁰

There is always a problem of choosing between the necessary level of protection and the efficiency of working on the network. In some cases, users or consumers of security measures can regard them as measures to limit access and efficiency.²¹ However, tools such as cryptography, for example, can significantly enhance the degree of protection without restricting users' access to data.

An important factor in the area of data and privacy is "The internet of things" (IoT) – a concept of connecting real-life devices to internet, allowing users to communicate with them over distance.²² These "smart" devices include household appliances, vehicles, watches, etc. Weber defines IoT as a "global Internet-based technical architecture facilitating the exchange of goods and services in global supply chain networks"²³.

²⁰ Manral, V., Bhatia, M., Jaeggli, J., & White, R. (2010). *Issues with existing cryptographic protection methods for routing protocols* (No. RFC 6039).

²¹ Wu, K. W., Huang, S. Y., Yen, D. C., & Popova, I. (2012). The effect of online privacy policy on consumer privacy concern and trust. *Computers in human behavior*, 28(3), 889-897.

²² Kobie, N. (2015). What is the internet of things? Retrieved from: <https://www.theguardian.com/technology/2015/may/06/what-is-the-internet-of-things-google>

²³ Weber, R. H. (2010). Internet of Things—New security and privacy challenges. *Computer law & security review*, 26(1), 23-30.

According to Evans, CISCO forecasts that the number of devices connected to the internet will reach 50 billion by 2020.²⁴ Therefore, connecting any appliance, device, vehicle or a gadget to internet will become common. This makes the usage of these devices more efficient, but also impacts on the privacy of the user, because IoT constantly collects information on the usage of connected items. Keeping the data private is becoming more and more difficult.

The benefits of IoT should not be underestimated. They include, for example, reducing energy by using smart home sensors, operating home appliances from smartphone, maintaining road safety and traffic information, executing advanced medical diagnostics, etc. However, since these technologies collect and share large volumes of data, there should be advanced and fit for purpose data protection systems. To ensure secrecy and privacy of the information, transferred via the Internet, encryption is used, or cryptography, which allows to transform data into an encrypted form, from which it is possible to extract the source information only if there is a key.²⁵

Development and use of such data protection systems will also be beneficial to the manufacturers, thanks to increased trust from the consumer.

Another recent development that must be discussed in the light of data and privacy is “cloud computing”. According to IBM, cloud computing can be referred to as “the cloud” and is “the delivery of on-demand computing resources – everything from applications to data centers – over the internet on a pay-for-use basis”. There are many benefits to using the cloud, mainly, space saving and ability to access the data in the cloud from any gadget, as opposed to storing it on a physical device. Thus, many businesses and private users are migrating some of their data and application to the cloud. However, due to the concerns of data security, the sensitive data and critical applications and systems are still often kept on the physical devices, which inhibits the growth of the cloud computing market.²⁶ The main challenges of making cloud computing secure, named by Chen and Zhao, lie in the area of protection of personal and business information of the user, whilst sharing the data at the same time and it is of great importance to use such systems that will determine which information can be disclosed and to whom it can be disclosed, in order to keep the functionality of the cloud, whilst protecting sensitive data of the user.²⁷

Problems arising from the security of information transfer when working in computer networks can be defined as follows:

Interception of information – the integrity of information is preserved, but its confidentiality is violated;²⁸

Modification of information – the original message is changed or completely replaced by another and sent to the addressee;²⁹

Substitution of authorship of information;³⁰

Interception of the message with its withdrawal.³¹

²⁴ Evans, D. (2011). The internet of things: How the next evolution of the internet is changing everything. *CISCO white paper*, 1(2011), 1-11.

²⁵ Huang, R. W., Gui, X. L., Yu, S., & Zhuang, W. (2011). Privacy-preserving computable encryption scheme of cloud computing. *Jisuanji Xuebao(Chinese Journal of Computers)*, 34(12), 2391-2402.

²⁶ Dobrin, S.; Chochia, A. (2016). The Concepts of Trademark Exhaustion and Parallel Imports: A Comparative Analysis between the EU and the USA. *Baltic Journal of European Studies*, 6 (2), 28–57.

²⁷ Chen, D., & Zhao, H. (2012, March). Data security and privacy protection issues in cloud computing. In *Computer Science and Electronics Engineering (ICCSEE), 2012 International Conference on* (Vol. 1, pp. 647-651). IEEE.

²⁸ Lloyd, I. (2017). *Information technology law*. Oxford University Press.

²⁹ Theohary, C. A. (2011). *Terrorist use of the internet: Information operations in cyberspace*. DIANE Publishing.

³⁰ Lloyd, I. (2017). *Information technology law*. Oxford University Press.

³¹ Delac, G., Silic, M., & Krolo, J. (2011, May). Emerging security threats for mobile platforms. In *MIPRO, 2011 Proceedings of the 34th International Convention* (pp. 1468-1473). IEEE.

These problems can have serious consequences. For example, someone can send a letter on behalf of another person or the Web server can pretend to be an e-store, accept orders, credit card numbers, but not send any goods.

Therefore, it can be concluded that, in accordance with the listed problems in the discussion of security issues, the term “security” in the data protection area should combine the following different characteristics of a security-providing system:

1. Authentication: the process of recognizing the user of the system and granting him certain rights and powers. Every time when it comes to the degree or quality of authentication, this should be understood as the degree of security of the system from attacks by third parties on these powers.

2. Integrity: a state of data in which they retain their informational content and unambiguous interpretation under conditions of different impacts. In particular, in the case of data transmission, integrity can be seen as the identity of the sent and received.

3. Secrecy: preventing unauthorized access to information. In the case of data transmission, this term should be understood as preventing interception of information.

CONCLUSION

This paper was aimed at determining legal problems and issues within the aspect of human rights, in light of the technological development. The relationship between these areas was analysed and several problems were identified. These problems include:

- Manipulation of the personal consciousness, through mass-media;
- Identity issues of the internet users and other psychological problems;
- Unfiltered information online can be misleading and even dangerous;
- Uncontrolled power of mass media can be dangerous to society;
- High rate of renewal of knowledge, rapid changeability of social structures;
- A threat to freedom in the internet society;
- Dangers of genetic modification of humans, leading to human rights crisis.

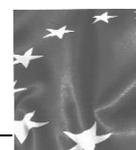
Issues with data protection and security were also discussed and methods of protection of personal data were explored.

It can be concluded that there are many advantages of technology development that lead to growth of economies, made conducting business and personal communication easier, fostered globalization; however, it is important to consider the dangers of this concept in connection to the issue of human rights.

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Outsourcing in the Context of State-Private Partnership

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Abstract: *the article is dedicated to analysis of outsourcing in the context of state-private partnership, as a means of stimulating the development of the national economy, as well as attracting foreign investments. Different kinds of outsourcing are analysed depending on what is passed to execution by outside organizations. The main stages and peculiarities of state-private partnership development in the countries of Europe, USA, Russia and Ukraine are indicated. In addition, the author analyses the Law of Ukraine "On State-Private Partnership", outlines the main shortcomings of legislation and investigates the state of the implementation of state-private partnership in Ukraine. An attempt has been made to determine the main directions of the state policy and a set of legal means to promote the use of outsourcing and development of outsourcing relations with foreign partners.*

Keywords: *Economic-legal policy, Investments, Outsourcing, State-private partnership, Transnational corporations.*

INTRODUCTION

The current stage of development of the Ukrainian economy is characterized by slowness, lack of technology, access to the international market, as well as the problem of attracting innovative investment. Ukrainian enterprises face many problems, which are related to deficiency of state support, high level of taxation, in particular investment imports, inadequate connections with foreign partners, and the like. In addition, despite a wide variety of ways to attract foreign investment and stimulate the development of the economy, the Government does not seem to pay enough attention to this, as a result of which there is no perfect legislation, a low level of economic development, a lack of strategic partnership with foreign companies in the spheres of metallurgy, machine building, power engineering.

The purpose of this article is to study outsourcing in the context of the possibilities of using legal forms of state-private partnership, which in turn can become an instrument for implementing the investment and innovation policy of the state. In addition, the article is aimed at analysing modern legislation, which regulates public-private partnerships, identifying means and methods for supporting private economic entities, and developing an effective state policy to regulate outsourcing relations within the framework of state-private partnership.

Such methods as the method of system-functional analysis in the analysis of outsourcing varieties, their influence on economic processes and the possible outcome for the economy were used when writing this article. Secondly, the formal-logical method was applied in the analysis of regulatory legal acts governing the legal regime of foreign investment, as well as forms of state-private partnership. In addition, the methods of analysis and synthesis were used, formally- legal, as well as dialectical.

STATEMENT OF THE BASIC MATERIALS

Today, the level of economic development in Ukraine remains extremely unsatisfactory. After the collapse of the Soviet Union, Ukraine remained in a difficult situation, as Ukraine faced such problems as inflation, the rapid decline in the standard of living of the population, the drop in production, the loss of economic contacts with enterprises of the former USSR that significantly

slowed the development of the economy.¹ In addition, there was a need to navigate from the command economy to a market economy, to form market-based legislation, and to seek new means to stimulate the development of the national economy. Ukraine has not been able to bring the economy to a high level during 27 years, which is explained by the insufficiency of investments, the imperfect system of state management of the economy, the growth of state debts, the shadowing of the economy, and insufficient attraction of foreign investments. To date, Ukraine's GDP level is only about \$ 100 billion, which is insufficient to ensure a decent standard of living for the population. In this connection, there arises the problem of developing and searching for new forms and methods that will ensure intensive development of the Ukrainian economy.

One of such ways can be attraction of foreign investments. The urgency of solving this problem is underscored by the Decision of the Verkhovna Rada of Ukraine "On the Concept of Science – Technology and Innovative Development of Ukraine" dated July 13, 1999, which states that Ukraine lacks an effective mechanism for investing in large-scale technological changes. State scientific and technical programs often do not ensure the achievement of concrete final results. Ministries and other central executive bodies do not have sufficient funds for innovative transformation of relevant industries, and non-state commercial structures are still not interested in implementing long-term projects that provide basic technological changes. A promising direction in solving problems in this area is the transition of domestic production to an innovation-based development.² Taking into account the current situation, it is necessary to define more clearly the conceptual basis of the state scientific, technological and innovation policy. Despite the considerable time that has elapsed since the adoption of this decision, it is still very relevant for characterizing the current economic state of the country.

It should be noted that for Ukraine as a state, which cannot be considered as country with a developed economy, thus should be one of the key in the state economic strategy. The most important and promising partners from the point of view for the development of further relations that will provide an opportunity to enter the international market, as well as attract innovative technologies, are transnational corporations (hereinafter – TNCs). Outsourcing is one of the most effective ways to attract foreign investment. It can be said that the state does not pay enough attention to this economic phenomenon, and therefore, as a consequence, there is no legislation that would regulate outsourcing relations in detail, as well as state policy on their stimulation and support. Despite the wide variety of approaches to understanding outsourcing, we believe that it should be defined as a form of economic cooperation, which consists in transferring the main or serving functions by the customer company to another entity (outsourcer), usually on a contractual basis and used by the customer company with the aim of optimizing costs, as well as improving the quality of the final result. It's important to emphasize that outsourcing is not just an ordinary cooperation of companies among themselves, but an element of the company's strategy characterized by durability, integration of the business processes of the customer company and outsourcer, the transfer not only duties, but also responsibility for providing services, and also the purpose – optimization of costs and increase of competitiveness.³

¹ Kerikmäe, T.; Chochia, A. (Eds.) (2016). *Political and Legal Perspectives of the EU Eastern Partnership Policy*. Springer International Publishing.

² Polese, A.; Stepurko, T.; Oksamitina, O.; Kerikmäe, T.; Chochia, A.; Levenets, O. (2018). *Informality and Ukrainian higher educational institutions: Happy together? Future Policy in Education*

³ Nyman-Metcalf, K.; Dutt, P. K.; Chochia, A. (2014). *The Freedom to Conduct Business and the Right to Property: The EU Technology Transfer Block Exemption Regulation and the relationship between Intellectual Property and Competition Law*. In: Kerikmäe, T. (Ed.). *Protection of Human Rights in the EU: Controversies and Challenges of the Charter of Fundamental Rights (37–70)*. Springer Verlag.

First of all, it will be useful to note that the term “outsourcing” is often used in the context of cooperative relations between public authorities and private companies, which consists in the transfer of functions to a private outsourcer for execution, allows the authorities to concentrate their efforts on more important aspects of their activities, and to obtain a more effective and qualitative result.

Common areas in which outsourcing is used in public authorities may be information technology, infrastructure support, skills development and staff training, provision of individual services to the population and customer relationship management⁴. According to experts, the implementation of outsourcing contracts as a form of state-private partnership allows the customer enterprise to reduce operating costs by almost 35% and increase the return on capital by an average of 6%⁵.

For satisfaction of public interest we can give examples in support of the importance and effectiveness of using outsourcing. In order to overcome corruption in the customs business, the functions of external customs administration were transferred. The reformation of the system, as well as the activities of executive bodies, took place with the help of British companies that provided consulting services to government. Such companies were Crown Agents, Adam Smith International.⁶ However, the development and dissemination of the transfer of functions to outsourcing in the executive bodies of Ukraine is slowed by the lack of legislative regulation. Another promising application of outsourcing is the creation of call-centres. In the opinion of scientists, call-centres should be created instead of information-reference services, which will lead to increase of efficiency and quantity of provided services. It is also suggested that the formation of centralized accounting in state networked establishments is advisable, which in the future should share responsibilities for forming accounts in the institution and maintaining accounting records with the territorial body of the state treasury service.⁷

On the other hand, outsourcing can be considered as an “economic technology” for incorporating national enterprises into TNC chains by obtaining functions for performing certain operations by Ukrainian outsourcers. It should be noted that, given a number of features in outsourcing relationships, it is possible to distinguish contractual, investment and investment-innovative. It is from the type of outsourcing in the future will depend on the correct development of public policy with the aim of both protecting public interests and helping a private company develop and execution the functions transferred to TNCs.

Contractual outsourcing is reduced to the transfer only a single function or business process to the performance of another company and does not involve the transfer of special knowledge or developments. This kind of outsourcing usually takes place in the transfer of functions related to marketing, holding an advertising company, but it can also concern certain production operations on temporarily free operation lines of the outsourcer and the like. The next type is investment outsourcing, which in turn can have 2 options. The first is connected with the creation of a TNC of its own enterprise in Ukraine, and therefore, as a result, direct investments take place. Or the TNC can transfer to the Ukrainian enterprise the function execution with mandatory transfer of equipment, documentation, provides the necessary technological level of production, as a necessary condition for the performance of the function in accordance with the standards of the customer-

⁴ Kakabadse A., Kakabadse N., “Outsourcing in the public services: A comparative analysis of practice, capability and impact”, in *Public Administration and Development*, Vol. 21, 2001, pp. 401-413.

⁵ Nagorna O., “Derzhavno-privatne partnerstvo v sistemi finansovogo zabezpechennja pidpriemstv komunal'nogo gospodarstva”, in *Rinok cinnih paperiv Ukraïni*, № 3-4, 2013, pp. 99-104.

⁶ Kveliashvili I., “Zarubizhna praktika zastosuvannja autsorsingu v organah derzhavnoi vladi: perspektivi dlja Ukraïni”, in *Derzhavne upravlinnja ta misceve samovrjaduvannja*, vip. 4, 2015, pp. 171-178.

⁷ *Ibid.*

company. Investment-innovative outsourcing combines the creation of by foreign company the own enterprise in Ukraine with the transfer of scientific developments of innovative products to perform outsourced functions, and ideally – the creation of innovative divisions of enterprises-outsourcer.

As we see, it is more interesting to consider outsourcing in a global sense, on the so-called “mega-level” to attract foreign investments with an innovative aspect, and also to develop relations with TNCs. In this case, this situation will occur. Between TNCs and the Ukrainian Company arise outsourcing relationships that have an innovative and investment component. The state in its turn is interested in supporting these relations, and therefore should apply incentive measures for the Ukrainian enterprise. But due to the imperfection of the Ukrainian legislation, it turns out to be extremely difficult to choose the activities that will be most effective and right to ensure a balance between public and private interests. From this we can conclude that in this case we can talk about the existence of an investment project, the successful implementation of which can face difficulties associated with the lack of state support, large business risks, and so on. For foreign investors on the territory of Ukraine, a national regime for investment and other economic activities is established in accordance with Art. 7 of the Law of Ukraine “On the Foreign Investment Regime”, with the exceptions provided for by Ukrainian legislation and international treaties of Ukraine. For individual entrepreneurs engaged in investment projects involving foreign investment, which are implemented in accordance with the state programs for the development of priority sectors of the economy, social sphere and territories; a preferential regime of investment and other economic activities may be established. But we cannot fail to note the provisions of the Constitution of Ukraine, in particular Part 4 of Art. 13, where established that the state ensures the protection of the rights of all subjects of ownership and management, the social orientation of the economy. All subjects of ownership are equal before the law. This suggests that the state has no right to grant benefits or otherwise facilitate the economic activities of a particular enterprise. At the same time, an investor in a country like Ukraine may require special conditions. In this case, public-private partnership (hereinafter referred to as “PPP”) can be an effective way to solve this problem, as a form of individualizing the conditions of management for a particular project, taking into account its special public, socio-economic significance. In other words, we consider outsourcing as a global category, and state-private partnership (hereinafter referred to as SPP) as a condition that allows obtaining an outsourcing order from TNCs and assisting the relevant enterprise in performing its outsourcing tasks. State the case another way, we are talking about the allocation of a foreign partner and his relations with domestic outsourcers from the general legal regime of economy management in order not to contradict the constitutional principle of legal equality of business entities, but at the same time to provide particularly attractive conditions for the realization of economic relations.

In addition to that, the conceptual and legislative unification of the conceptual apparatus and outsourcing and the PPP would be important in this sense.

It should be noted that in the international literature there are 3 main approaches when SPPs are understood as inter-organizational activities between different institutions in which SPPs are used as a tool of public administration or management; as a development strategy; as a discursive term or, so-called, “language game”.⁸ In addition, there is an opinion that SPPs should be understood as long-term institutional mechanisms for cooperation between the public and private sectors to achieve various goals.

SPPs can also be interpreted in a broad and narrow sense. In the first case, SPP is any official constructive interaction of government and business in the economy, politics, culture, this definition, in fact, can be reduced to a comprehensive tool to attract investment in capital-intensive

⁸ Teiseman, G., Klijjn, E.H, “Partnership Agreements: Governmental Rhetoric or Governance Scheme?”, in *Public Administration Review*, vol. 62, № 2, 2002, pp. 197-205.

infrastructure projects.⁹ Some scholars believe that in this case, SPP should be understood as a mutually beneficial medium and long-term cooperation between the state and business, which is realized in various forms (starting from contracts for execution of works, corporatization and ending with consultations of the state and business associations) and which aims to solve political and socially significant tasks at the national, regional and local levels.¹⁰

Turning to the definition of SPP in the narrow sense, it should be said that it is defined as the interaction of business and government in the process of implementing socially significant projects of national importance.¹¹

It is important that the SPP includes 2 components: economic and legal. The economic aspect can be reduced to fulfilling the role of the institute of indirect privatization (semi-privatization) with the redistribution of powers between the state and business in the region that cannot be privatized, but for the development of which the state does not have the means (housing and communal services, social sphere, transport, community redevelopment, objects of cultural heritage and others). At the same time, the conditions for the effectiveness of SPPs are: the extent to which the business is involved in the implemented project and the state maintains a high level of economic activity and property rights.¹²

On the other hand, SPP can be justified as a form of optimization of the state's performance of its duties to the society, in other words, effective provision of public services to the population.¹³

Such a scientist, as Varnavskiy V., defines the SPP as a legally established form of interaction between the state and the private sector in relation to state and municipal property objects, as well as services performed and provided by state and municipal authorities, institutions and enterprises for the purpose of realization of jointly significant projects in a wide range of economic activities.¹⁴

In the writings of Willisov M., one can find the definition of SPP, which is reduced to a legal mechanism for harmonizing interests and ensuring the equality of state business in the framework of the implementation of economic projects aimed at achieving the goals of public administration. The point to be emphasized is the equitable nature of the relations that arise between the state and the private sector.¹⁵

Halimovskiy analyses SPP from the point of view of mutually beneficial cooperation of public and private entities for the purposes of simultaneous profit making and achievement of socially useful goals in the field of economy, based on the combination of monetary and other partner contributions and the distribution of risks, allows for the partial release of a private object from entrepreneurial risks.¹⁶ Gerrard M. understands SPP as a joint project of government and business. But it should be noted that such projects, in his opinion, can only be classified as those

⁹ Narozhnij S. M., "Teoretichni zasady organizacii derzhavno-privatnogo partnerstva", in Aktual'ni problemi derzhavnogo upravlinnja, №2, 2014, pp. 67-74.

¹⁰ Pavljuk K. V., "Sutnist' i rol' derzhavno-privatnogo partnerstva v social'no-ekonomichnomu rozvitku derzhavi", in Naukovi praci Kirovograds'kogo nacional'nogo tehničnogo universitetu. Ekonomichni nauki, vip. 17, 2010, pp. 10-19.

¹¹ Vinnic'kij B., "Dosvid ta perspektivi vprovadzhenja derzhavno-privatnih partnerstv v Ukraïni ta za kordonom", 2008, p. 146.

¹² United States Department Of Transportation (2004) Report To Congress On Public-Private Partnerships. <http://www.fhwa.dot.gov/reports/pppdec2004/>, Accessed: January 12th 2018.

¹³ Supra note 6

¹⁴ Varnavskij V.G., "Gosudarstvenno-chastnoe partnerstvo: teorija i praktika: uchebnoe posobie" Gos. un-t – Vysshaja shkola jekonomiki, 2010, p. 287.

¹⁵ Villisov M.V., "Gosudarstvenno-chastnoe parnerstvo: politiko-pravovoj aspekt" in Vlast', № 7, 2006, pp. 14–19.

¹⁶ Halimovskij Ju.A., "Gosudarstvenno-chastnoe partnërstvo v sub#ektah RF: bluzhdanie v temnote", in «Nalogi» (gazeta), № 14, 2011, pp. 18-25.

that are used as commercial management and investment mechanisms.¹⁷ The Commission of the European Union in the Green Paper states that SPPs are forms of cooperation between public authorities and businesses in order to financing, building, re-establishing, management and supporting infrastructure or provide services.¹⁸ Thus, we see that there is no consensus in the literature on the definition of SPPs.

Also, SPP cannot be called a new tool for interaction between the state and business, as well as its use as a means of developing strategically important sectors of the state economy. Therefore, it is possible to provide the main stages, as well as some features of SPP development in the countries of Europe, the USA, Russia and Ukraine.¹⁹

The first manifestations of SPP can be called the cooperation of the state with private structures in ancient Rome and Greece. It was then that the delegation of authority, as well as the functions to perform socially important tasks took place. For example, the so-called “tax collectors” had had the right to collect taxes, which then were given to farming at the annual auction. Also, land problems were solved; in particular, the procurators in Rome transferred plots of land for private use to private individuals for further development and search for minerals. In addition, the management of ports, as well as banks, was transferred to the private sector.²⁰

Rapid development of SPP in Europe occurs in the Middle Ages. The peculiarity is that at the heart of such a partnership was a concession, which then understood the transfer of state property to private individuals. The first manifestation of such a partnership was the search for minerals in the 12th century in Spain.²¹

In the middle of the 16th century, in particular in 1552, in France during the reign of Henry II, a canal on the concession basis in the Crow Valley was constructed.²² This was a significant impetus for the development of plant growing, in particular, began to plant olive trees, grapes.²³ Subsequently, the cleaning of the streets in Paris was handed over to private individuals. Such cooperation of the state with the private sector took place on a paid basis.

During the reign of Louis XIV the Southern Canal was built. This made it possible to trade in grain, since the channel connected Toulouse and Sète, which was located in the Mediterranean Sea.²⁴

In the UK in 1992, the then-chancellor announced that the Ministry of Finance had begun to develop ways to increase the scale of private financing of capital projects as a whole. It was assumed that this would consist in the creation of joint ventures or the conclusion of lease agreements with the right of redemption with the private sector. Such cooperation has received the name as the Private Finance Initiative (PFI). PFI can be defined as long-term contracts (usually 20-35 years), where the private sector constructs project assets (for example, a building) and provides the

¹⁷ Solodarenko M., “Sutnisno-teoretichni pidhodi do rozuminnja kategorii derzhavno-privatne partnerstvo”, in *Naukovij visnik [Odes'kogo nacional'nogo ekonomichnogo universitetu]*, № 3, 2015, pp. 156-172.

¹⁸ European Commission (2004) Green Paper On Public-Private Partnerships And Community Law On Public Contracts And Concessions. <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52004DC0327>, Accessed: December 19th 2017.

¹⁹ Dobrin, S.; Chochia, A. (2016). The Concepts of Trademark Exhaustion and Parallel Imports: A Comparative Analysis between the EU and the USA. *Baltic Journal of European Studies*, 6 (2), 28–57.

²⁰ Suhij V. A. K., “Voprosu o ponjatii i sushnosti gosudarstvenno-chastnogo partnerstva”, in *Nauchno-tehn. vedomosti SPbGPU. Ser.: Jekonom nauki*, № 2 (168), 2013, pp. 96-99.

²¹ Dlugopol'skij O. V., “Derzhavno-privatni partnerstva: zarubizhnij dosvid i uroki dlja Ukraïni”, in *Akt. probl. Ekonomiki*, № 3, 2012, pp. 43-49.

²² Lebeda T., “Derzhavno-privatne partnerstvo jak faktor ekonomichnogo zrostannja ta problemi rozvitku v Ukraïni”, in *Ekonomist: nauk. ta gromad.*, № 3, 2011, pp. 52-58.

²³ Kulikov A. I., “Peredumovi viniknennja partnerstva mizh derzhavoju i pidpriemnic'kimi strukturami”, in *Derzhava ta regioni. Ser. : Derzh. upr. : nauk.*, № 1, 2012, pp. 29-33.

²⁴ Please see official webpage at <http://www.canal-du-midi.org/en/canal/history>, Accessed: November 10th 2017.

necessary financing. As a rule, this happens on the basis of project financing (payments from the state sector, based on contractual relations, which is the main guarantee for sponsors).

Later, in order to ensure a more rapid development of SPPs, a Private Financial Group (PFG) was created, which mainly comprised the private sector. Its tasks were to encourage participation in the PFI in both the public and private sectors, stimulate new ideas, identify new areas of public sector activities that could be financed by the private sector, and seek solutions to problems that could impede progress. As a result of the work of the Private Financial Group, 27 recommendations were developed for the government to accelerate the development of interaction between the public and private sectors.

In the United States of America, the first mention of the partnership between the state and the private sector is the conclusion of agreements between governors and private individuals on granting the right to build roads, wagons, use of land, and rivers. This happened in the XVII century.

Speaking about the development of SPP in Ukraine, it should be noted that a significant event was the signing of a concession agreement in the XIX century for the construction of a centralized water supply system, provision of urban lighting, and the start of public transport. The water concession lasted until 1914, when the authorities bought the water supply from the entrepreneur.²⁵ Over time, the signing of concession agreements between the state and the private sector in Ukraine has become more widespread, which has enabled it to attract large capital for the development of strategically important sectors of the economy, technological innovations, special knowledge on the country's development and infrastructure development.

As we see, in different countries the inception and development of partnership between the state and private persons took place differently. But taking into account this fact, it can be concluded that even many years ago such interaction brought its results and made it possible to solve economic and socially significant problems.

To date, one of the main regulatory legal acts, which governing SPP, SPP has been defined as cooperation between the State of Ukraine, the Autonomous Republic of Crimea, territorial communities represented by relevant state bodies and local governments (state partners) and legal entities other than state and municipal enterprises, or by individuals-entrepreneurs (private partners), which is carried out on the basis of a contract in the manner prescribed by this Law and other legislative acts, and corresponds to the features of public-private partnership, defined by this Law.

However, this Law cannot be called perfect, since it regulates only general issues such as the organizational and legal bases for interaction of state partners with private partners and the basic principles of state-private partnership on a contractual basis. However, this Law does not establish the procedure for the organization and implementation of SPPs in certain areas of the economy, which significantly complicates its application. This Law does not provide for the form of SPP for the implementation of strategic outsourcing investment projects, because in Art. 5 of this Law it is established that within the framework of the implementation of state-private partnership in accordance with this Law and other legislative acts of Ukraine concession agreements and property management can be concluded (solely on the condition of prediction in the contract concluded within the framework of state-private partnership, investment obligations of a private partner, joint activities, other contracts). As we can see, this list cannot be called exhaustive, which is unacceptable for the public sphere, because despite the contractual nature of these relations, we cannot assume that relations within the framework of SPPs are exclusively discretionary nature. The state in this case has a double legal nature. First, it participates in such relations as a private

²⁵ Olijnik V, "Ljudina, jaka "sporudila sobi vikovichnij pam'jatnik", ale bula blagopoluchno zabuta kijanami: [Pro inzhenera Amanda Egorovicha Struve (1835–1898)]", in *Dzerkalo tizhnja*, 3 cherv. (№ 20), 2005.

entity, and therefore there is equality with a private enterprise. But on the other hand, the state acts as a subject of organizational and economic powers, having the opportunity to take decisions on the provision of benefits, guarantees, and state assistance to private economic entities. In addition, the Law does not contain provisions on the implementation of the investment project, and as a consequence, and the outsourcing project, certainly slows down the development of interaction between the public and private sector. In this regard, there is a need to adopt separate laws on the implementation of outsourcing projects in construction, infrastructure and transport, in the manufacturing sector, and the like. Also, the mechanism for implementing these relations, conducting competitive procedures, the possibility of subsequent privatization of the object with its successful operation and the like, also requires improvements.

The imperfection of the Ukrainian legislation is manifested in a small number of cases of application of the PPP for the implementation of socially significant tasks. One of such examples can be the construction of an airport in Kharkiv. The essence of this partnership can be summarized by saying that the takeoff runway was in state ownership, the airport territory in the communal one, which was transferred to a private individual, Yaroslavskiy A., into a concession. However, legally, such a project was formalized by a lease for 49 years, which once again confirms the lack of confidence and inability to implement various forms of SPP in Ukraine.

The same opinion was reflected in the order of the Cabinet of Ministers of Ukraine № 739-p dated August 14, 2013 "On approval of the Concept of development of state-private partnership in Ukraine for 2013-2018 years", Ukraine has experience of private sector involvement in the development of the national economy. According to the World Bank, 40 infrastructure projects with the participation of the private sector were implemented during 1990-2011 years, with the total investment in these projects amounted to 12.1 billion US dollars, of which about 90 were focused on projects in the field of telecommunications. In other countries the total amount of investments attracted in 1990-2011 years for the implementation of infrastructure projects involving the private sector was 588.5 billion US dollars with a per capita income level below the average. Take into consideration the fact that to this category includes mainly the countries of Africa, the least developed countries of South-East Asia and the CIS countries, the level of involvement of the private sector in the implementation of infrastructure projects in Ukraine is unsatisfactory.

In addition, the Resolution states that international experience shows that for rapid economic development, in addition to adopting acts of national legislation in the field of state-private partnership, it is necessary to use a mechanism of state support with the aim of attracting private investments on the basis of this partnership. However, the main problems of providing state support in the sphere of state-private partnerships are still the budget deficit and the complexity of the mechanism for providing state support, the lack of annual financing of long-term state-private partnership projects, the uncertainty of the methodology for providing state support in the implementation of state-private partnership projects, inconsistency of principles and approaches in the sphere of state-private partnerships to international principles, limited opportunities to obtain state guarantees for the implementation of state-private partnership projects at the local level. Take into account the lack of positive results in the implementation of state-private partnership projects at the national and local level, it is necessary to develop a draft Law of Ukraine "On Development Strategy of State-Private Partnership in Ukraine."

This confirms the importance of providing the benefits by state to Ukrainian outsourcer companies in order to efficiently and qualitatively execution assigned task, as well as creating the necessary conditions for the transfer their innovations to TNCs. Therefore, the state should develop legislation on the protection of intellectual property rights to prevent the disclosure of trade secrets, as well as special incentive measures for Ukrainian companies. In this connection, the question of creating a special legal regime for Ukrainian companies that is fundamentally important for the state

may arise. According to Part 1 of Article 19 of the Law of Ukraine “On state-private partnership”, the national legal regime for investment and other economic activities for foreign private partners which implementing state-private partnership in Ukraine is established, except for cases provided for by law and international treaties of Ukraine, consent to be bound by the Verkhovna Rada Ukraine. But it might be advisable to apply the most favoured nation treatment in such situations, which would stimulate the development of outsourcing relations with foreign TNCs, and also actively attract foreign investments to the states. The importance of this regime is also fixed in the Final Act of the Conference on Security and Cooperation in Europe since 1975, which indicates that states recognize the beneficial effects on the development of trade, which may be the result of the most favoured nation treatment. Such a regime can be reduced to providing benefits or advantages in the implementation of cross-border trade. In addition, the application of the contractual principle of international trade by concluding bilateral agreements with the state-locations of TNCs can be effective.

The possibility of privatization of the object that was transferred to a concession, provided that it was successfully used for a certain period of time, as it was already noted, can be effective to stimulate the use of outsourcing relations in the sphere of SPP. Such use will have a prejudicial nature and will become a legal fact for obtaining ownership of the object.

CONCLUSIONS

1. Outsourcing is a form of economic cooperation that consists in the transfer of the main or serving functions by the customer company to another entity (outsourcer), usually on a contractual basis and used by the customer company to optimize costs, and to improve the quality of the final result. It's important to emphasize that outsourcing is not just an ordinary cooperation of companies among themselves, but an element of the company's strategy characterized by durability, integration of the business processes of the customer company and outsourcer, the transfer of not only duties, but also responsibility for providing services, and also the purpose – optimization of costs and increase of competitiveness.

2. The most important and promising partners in terms of developing further relationships that will allow them to enter the international market, as well as attract innovative technologies, are transnational corporations (hereinafter – TNCs). Outsourcing is one of the most effective ways to attract foreign investment.

3. Outsourcing can also be seen as cooperation between public authorities and private companies, which consists in transferring the functions to a private outsourcer for execution, allowing the authorities to concentrate their efforts on more important aspects of their activities, as well as to obtain a more effective and qualitative result, as well as a means of incorporating Ukrainian enterprises into TNC chains by obtaining production functions for execution by Ukrainian outsourcers.

4. Depending on what lies at the heart of outsourcing, outsourcing can be divided into contractual, investment, investment-innovative, which plays a key role in the development of public policy with a view to both protecting public interests and helping a private company to develop and execute functions transferred to TNCs.

5. SPP should be viewed as a form of individualizing the conditions of management for a particular project, taking into account its special public economic social meaning, which is very important for attracting outsourcing investment and innovation projects.

6. The development and improvement of legislation on SPP and regulation of outsourcing relations in certain spheres of the economy (construction, infrastructure development, production, etc.) remains an urgent problem.

7. Effective means to support the development of outsourcing relations can be state benefits, the establishment of a separate legal regime for strategically important foreign partners, the establishment of the possibility of privatization of the object transferred to a concession, provided that it is successfully used for a specified period as a fact of prejudicial value.

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