particular grammatical structure at some stage in their development, it might be useful to use a focus task, the pre-task phase of the lesson can provide an opportunity for direct teaching, but not of grammar, perhaps of vocabulary, or, perhaps, simply to motivate students to do the task, and meaning is primary, but attention to form is still important. In task-based language teaching it can be achieved through the way a task is designed in the case of a focus task or in the case of how it's implemented.

Task-based teaching caters to incidental language acquisition – i.e. learners "pick up" new language while they are working to achieve the outcome of the task. In this respect it differs from task-supported teaching which caters to intentional language acquisition. One of the reasons why incidental acquisition is so important is because it's simply not possible to learn every little bit of English intentionally, there has to be opportunity for incidental acquisition opportunity for learners to pick up new language from doing a task. Incidental acquisition actually involves two things, it involves the focus on meaning and this leads to acquisition in two senses. You can acquire new language from doing a task or you can acquire greater control over that language that you have already partially learned.

Incidental language acquisition requires that learners pay attention to form while they are performing a task. Teachers can facilitate attention to form in a number of different ways: by highlighting features in an input-based task, by providing opportunities for planning, before students start a task or by correcting them, when they make certain errors during the performance of the task. Or interactionally when learners experience problems in understanding or expressing themselves clearly or fail to use the language correctly.

Incidental acquisition actually involves two things, it involves the focus on meaning and this leads to acquisition in two senses. You can acquire new language from doing a task or you can acquire greater control over that language that you have already partially learned. It's important to emphasize that, because learning a language is not just a question of learning new language, it's a question of increasing control over language partially acquired.

A key feature of task-based language teaching is focus on form. This occurs in the when the task is actually implemented and there are a number of ways in which teachers can draw learners attention to form while they are doing a task, for example by highlighting features in an input-based task, by providing opportunities for planning, before students start a task or by correcting them, when they make certain errors during the performance of the task. Task-based language teaching must involve a focus on form, but this focus on form must come out of students attempts to actually perform the task and one of the main ways in which this is done is through corrective feedback using recasts. This kind of focus on form is an essential feature of task-based language teaching.

The advantages of task-based teaching are the importance of learning incidentally through communicating results in implicit knowledge. It facilitates learning through the simultaneous development of interactional competence. Students are more likely to develop intrinsic motivation in a task-based approach and, finally, a task-based approach enables teachers to see if students are developing the ability to communicate. In more traditional language teaching you don't really know where the students are developing the ability to communicate, but watching them perform tasks you can actually see whether they are developing the ability to communicate.

Nevertheless, several issues concerning task-based learning must be mentioned. It is necessary to be aware of some downsides of using this approach. As it may encourage students to use their own language and vocabulary, it is important for the teacher to help them expand the vocabulary in the target language. In other case students won't be able to expand their vocabulary but only increase skills in using the language they already possess.

To solve these problems stronger students can work with weaker students, when stronger students are told to focus on using more advanced vocabulary. As it does not improve the skills of stronger students, they will need the help of the teacher.

Another crucial point is that after the Task Cycle is complete, the learning process is not. The evaluation part is critical for the students to become aware of the learning they have just gone through. Basically, there are two parts in the learning process of task-based learning which are of equal importance. The first is to do the work and go through the tasks, the second is to get the student to think about what it is he or she has just gone through . If the teacher does not follow up in the Post-Task, half of the task-based learning process is wasted.

POSTHUMANISM: ALTERNATIVE REALITIES AND AI IN SCIENCE FICTION BY G. EGAN AND R. MORGAN: POSSIBLE IMPACTS OF DIGITAL TECHNOLOGIES ON SOCIETY AND HUMAN NATURE

ПОСТГУМАНИЗМ: АЛЬТЕРНАТИВНЫЕ РЕАЛЬНОСТИ И ИИ В НАУЧНОЙ ФАНТАСТИКЕ Г. ЭГАНА И Р. МОРГАНА: ПОТЕНЦИАЛЬНОЕ ВЛИЯНИЕ ЦИФРОВЫХ ТЕХНОЛОГИЙ НА ОБЩЕСТВО И ПРИРОДУ ЧЕЛОВЕКА

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The paper focuses on the science fiction novels *Permutation City* and *Quarantine* by Greg Egan and analyses his ideas on how life-altering technologies and life-simulating sciences are transforming human life, our consciousness, and our understanding of concepts, such as human/non-human, ecology, and the world around us. The paper studies the way Egan explores the themes of posthumanism, simulated realities, and digital immortality, through the prism of various ethical, social, philosophical, ecological and other problems that these concepts inevitably generate. The rich scientific background of these hard sf novels is analysed. The author also analyses *Altered Carbon* by Morgan, and compares it to the works of Greg Egan.

В статье рассматриваются научно-фантастические романы Грега Игана «Город перестановок» и «Карантин» и анализируются его идеи о том, как трансформирующие жизнь технологии и науки, симулирующие жизнь, изменяют человеческую жизнь, сознание, окружающий мир, экологию, заставляют пересмотреть понятия человек/нечеловек. В статье анализируется развитие Грегом Иганом тем постгуманизма, смоделированных реальностей, цифрового бессмертия сквозь призму различных этических, социальных, философских, экологических и других проблем, неизбежно возникающих при анализе данных тем. Анализируется серьезная научная база, лежащая в основе этих сложных научно-фантастических романов. Автор также анализирует «Видоизмененный углерод» Ричарда Моргана, сравнивая его с работами Грега Игана.

Keywords: Permutation City, Quarantine, Altered Carbon, computer sciences, digital technologies, BINC technologies, simulated reality, quantum mechanics, singularity, brain scan, brain implants, neuroimaging, AI, climate change, ecology, biology, digital immortality, 4th Industrial Revolution, WEF.

Ключевые слова: Город перестановок, Карантин, Измененный углерод, компьютерные науки, цифровые технологии, БИНК технологии, симулированная реальность, квантовая механика, сингулярность, сканирование мозга, импланты мозга, нейровизуализация, Искусственный Интеллект, изменение климата, экология, биология, цифровое бессмертие, 4ая индустриальная революция, МЭФ.

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The current COVID-19 pandemic has had an enormous impact on all spheres of life, which will never be the same again. It seems that some of the trends and tendencies that have either emerged or intensified during the pandemic will remain with us for some time. One of these tendencies is, without doubt, the acceleration of automatization and digitalization and its penetration and mergence into all spheres of our life, the human body and consciousness included. The idea of digital acceleration was emphasized both by the World Economic Forum during its annual meeting in 2020, calling explicitly for digital transformation powering the great reset and affirming that the world would go digital and that the digital dividend would be gigantic, also by WEF founder and Chairman K. Schwab in COVID-19*: The Great Reset*. Together with Malleret, the WEF founder sketches the socio-economic impact of the pandemic and claims that it is a good opportunity for the transformation of financial capitalism into stakeholders' capitalism, thus creating more chances for nature protection, inclusiveness, equality and the wellbeing of everyone. Automatization and digitalization play an important role in this process and in the post-pandemic economic recovery. Schwab has already dedicated a great deal of attention to automatization and digitalization in *The Fourth Industrial Revolution* that "builds on the digital revolution." [1]. According to Schwab, the 4th Industrial revolution is "the new technology revolution, which entails nothing else than a transformation of humankind." [1]. This transformation will take place due to the unprecedented combination of "having billions of people connected by mobile devices, giving rise to unprecedented processing power, storage, capabilities and knowledge access […] artificial intelligence (AI), robotics, the internet of things (IoT), autonomous vehicles, 3D printing, nanotechnology, biotechnology, materials science, energy storage and quantum computing, to name but a few. [1]. The authors claim that this technological revolution will result in "not only changing the "what» and the "how» of doing things but also the "who» we are. " [1]. The latter concept clearly refers to the changes in human nature and immediately connects us to the concepts of human/non-human and posthumanism.

The idea of the forthcoming revolutionary transformation of the human species has been already formulated by various scholars. For example, Kurzweil (2005) refers to the Singularity, "the point in time when advances in technology, particularly in artificial intelligence (AI), would lead to machines that are 'smarter' than human beings through artificial general intelligence (AGI)." [2] Other scholars prefer such terms as "anthropological transition" for the complex evolutionary process which splits the current human species into two different biological species in the future; for example, see the works of A. Fursov. Other scientists observe, "The ecology of technologies, including the converging biological (bio), information (info), nanoscale (nano), and cognitive (cogno) technologies, may all together be labeled as the BINC technologies. These emerging technologies are already impacting and transforming our social structures and what it means to be human." [2]. Moreover, Rasmussen et al emphasize that "our current technology driven transformation is sometimes referred to as 'The 4th Industrial Revolution' (Schwab 2017). However, this name suggests that we will remain within an Industrial Age societal framework, which is likely not the case." [2]. As scientists conclude, due to these changes, "Worlds envisioned in science fiction, in which humans modify themselves through nano-cyber-enhancement technologies […] are becoming a reality." [2].

Indeed, already in the 1940-1950s, alongside the development of computer sciences, sf writers started speculating about the future mergence of humans and technology that could result in the revolutionary transformation of the human

species. Long before the discussions about Singularity, the 4th Industrial Revolution and the transformative role of computerization and digitalization on human nature, sf writers tried to envision all the pros and cons of this revolutionary amalgamation and transformation and analyse it carefully in their imaginary worlds. Engaging with the debates on the computer sciences, AI, and their mergence with the human body, science fiction, began to tie in key discoveries within scientific and technological studies. Since the genre of science fiction has emerged not only as a commitment to the influence of technology and science on social and geopolitical questions but also as a way to give an insight into scientific methodologies and approaches, it can be used as an effective analytical instrument to test the viability of scientific ideas (in the field of digital technologies, AI, etc.) and analyse their influence on the evolution of society and human nature.

Thus, the aim of this paper is to investigate the speculations of science fiction writers about possible positive and negative influences of digital technologies on human nature, as well as their role in the creation of a more just and harmonious society. The paper focuses on the analysis of the contemporary Australian writer Greg Egan's science fiction and aims at demonstrating the role of sf literature in reflecting the impact of new scientific discoveries and new technologies on human nature and society. Also, the novel *Altered Carbon* by Richard Morgan will be analysed and compared to the works of Greg Egan. The choice of the sf works of these writers is not incidental: both writers describe in their imaginary worlds the revolutionary transformation of the human species by digital technologies. Both writers propose different solutions leading to digital immortality; hence, the concept of digital immortality is common to all the *novums* present in these science fiction novels. In *Permutation City,* the *novum* is the possibility of the complete brain scan, its subsequent digitalization and creation of a Copy, placed into a simulated reality for indefinite time, theoretically, for ever. The *novum* in *Altered Carbon* is the possibility to record and save a person's life experiences on the brain implanted microchip, which can be re-implanted after a physical death/destruction of a human body into a new body for an infinite number of times, theoretically, for ever. Thus, both writers explore an old utopian dream to live for ever and investigate how the technical tools (digital/ computer technologies that theoretically can ensure digital immortality) influence the human body and society, creating a dystopian, rather than utopian society.

Greg Egan (BS in Maths) is an Australian hard science fiction writer who explores the themes of posthumanism, simulated reality, Artificial Intelligence, the nature of consciousness, the interaction of human/non-human and many others. Egan's works demonstrate the author's scientific background in natural sciences, ranging from mathematics, quantum theory, computer science to genetics, ecology, biology, etc. Egan's imaginary worlds employ various novums that often lie on the intersections of these sciences. In his sf works, Egan speculates about the impact of new scientific discoveries and new technologies as an effective way to develop critical thinking on the way Artificial Intelligence affects our society and our humanity. The author also reflects on how life-altering technologies and life-simulating sciences are transforming human life, consciousness, ecology, and the world around us. Though Greg Egan is a prolific sf writer, there is a considerable lack of academic research dedicated to his work.

In *Permutation City*, Greg Egan raises the issues of digital immortality as a way to overcome the limitations of a physical human body, as well as exploring the category of human /non-human as applied to the concept of digital consciousness versus human consciousness and identity.

In the novel, at the basis of the concept of digital immortality lies the idea of complete human brain scanning and digitalization of the data that enables the creation of a Copy which is placed into a simulated world. Actually, as the novel explains, the idea of a digital copy/ brain scan emerged as a result of a complete neural scan on the basis of the complex technologies that evolved from the didactic software employed to train surgeons in 3D Virtual Reality simulations. See, for example, also SNAP technology, "the Surgical Navigation Advanced Platform (SNAP). The SNAP is connected to standard operating room navigation systems and provides advanced imaging capabilities including multiple 3D points of view that allow surgeons to view their case from a microscope perspective and in another view from behind the tumor. One additional feature of the SNAP is a dynamic segmentation which allows for making specific structures semi-transparent to observe vessel structure inside the tumor and tumor boundaries. The SNAP also has other visualization options not available in other navigation or imaging platforms. In a nutshell, SNAP transforms Computer Xray Imaging into 3D images." [3]

It should be pointed out that while Schwab is rather positive about automation and digitalization for the creation of a more just, inclusive and ecologically friendly society, science fiction writers are less optimistic. Moreover, in their novels, the future mergence of digital technologies with the human body seems more dystopic than utopian. Some of these sf authors have professional training in computer sciences and digital technologies (like Greg Egan, for example), so, it is worthwhile studying their works. In *Permutation City* we observe how the long-cherished human dream of immortality and life in paradise can come true thanks to digital technologies. Due to the progress of computer sciences, it is possible to copy, digitalize a human brain and choose any desirable/dream place to live in (VR). Though it seems like living in paradise or in utopia (since it is possible to choose any ideal surroundings), after a closer look the reality is not so utopian at all.

Various protagonists of the novel express different opinions about brain scanning and digitalization leading to the creation of a Copy which is placed into a simulated world. In the novel, some consider it to be the only possibility to avoid death and complete annihilation, while others hold that the digitalization of their brain scan alters completely their consciousness and identity; for this reason they refute brain scanning and simulated reality, (for example, Francesca). Such protagonists clearly understand the difference between the real world, human consciousness and identity as opposed to simulated reality. Even if all the technical problems relative to brain scanning and digitalization are not taken into consideration and assume that these processes are executed flawlessly, there is absolutely no assurance that the digital copy

obtained can function flawlessly like a human brain and, even more importantly, whether it will function, behave, and feel, etc. exactly in the same way as the person whose brain was scanned would do. Another issue is whether a simulated brain can possess its own consciousness and will this consciousness bear similarity (if any) to the consciousness of the person whose brain was copied. Egan, however, leaves all these questions open and avoids mentioning most of these scanning problems and issues. He puts emphasis on the existence of these simulated brain copies but emphasizes that some of them prefer to abort their copies than to live as simulated brain copies in the simulated reality, where only near objects are well simulated, while all distant objects are blurred and hardly distinguishable. These flaws are due to the fact that not all people who use the brain scanning service and brain simulation have enough funds to pay for sufficient computing resources. In fact, only the wealthiest use specially established trusts to manage their brain simulation and management in VR. All the others have to sacrifice the quality and speed of computation accordingly to their limited finances. So, actually, this situation raises many issues of social injustice, even exploitation, not to mention ethical issues, which are extrapolated from the physical reality to the virtual/simulated reality and then back to the physical reality.

Thus, in *Permutation City*, Egan raises not only philosophical issues related to the simulated realities and digital copies of humans but a wide range of issues related to social justice, equality, ecology, etc. Drawing attention to these problems, the author demonstrates that even after this utopian dream of eternal life has been realized, it did not bring with it the creation of a happy harmonious utopian society but rather transferred all the present day negative social trends to the imaginary world of the future. Thus, the novel appears to be a warning that even the most advanced digital technologies alone cannot resolve all the problems in society, but rather they even can add new ones and aggravate old ones. In *Permutation City*, the computation of copies and simulated realities made social instability and ecological problems even worse. Since Copy creation and reality simulation are very expensive, not everyone can afford it, hence, computer simulation causes and increases inequality and may provoke social disorders. In the novel, Egan puts forward the idea that digitalization and continuous computation of the copies of rich people can sooner or later provoke indignation of many people who might understand that maintenance of a few copies of the rich influences negatively the economy and well-being of the many. Hence, according to the author, even if physically digitalized copies can expect immortality, it might be threatened by electricity crises, riots, protests, or social cataclysms, etc., hence, it is necessary to take into consideration also these possible force majeure situations.

In *Permutation City*, computer simulation has a negative impact on ecology because it requires a great deal of electricity, vast computing resources that are needed for other, more important purposes (in the novel, for fatal tornado forecasts). The negative influence of the heavy use of computers on the environment was not so obvious in the 1990s when the novel was written but has become very evident now; suffice it to think about crypto currency mining and the huge energy consumption of the crypto mining farms. The action of the novel *Permutation City* takes place in the future and as we know, climate change that the planet is experiencing now, is going to provoke uncontrollable fatal storms and tornadoes in the future, as is predicted by many scientists. See, for example, the works of the American astrophysicist and climatologist James Hansen, as, for example, in *The Storms of our Grandchildren*. Also, many science fiction writers were describing fatal storms in the future caused by the ecological contamination of our planet. This mechanism was previously explained by Boyarkina, I [4] in the analysis of James Ballard's novel *The Wind from Nowhere*, in which Earth was suddenly attacked by a strong wind that almost destroyed the planet and its population. In *Permutation City*, recurrent fatal tornados kill thousands of people, thus, governments create a project that connects thousands of computers to predict the tornadoes. One cannot help but point out that some 20 years later, in 2021, the Nobel Prize for Physics was awarded «for groundbreaking contributions to our understanding of complex systems» with one half jointly to Syukuro Manabe and Klaus Hasselmann «for the physical modelling of Earth's climate, quantifying variability and reliably predicting global warming».

Some of the possibilities explored in the novel are: creation of multiple simulated realities and multiple copies of the same human being, as well as the creation of digital worlds that allow for the natural evolution of life. In fact, in the novel, one of the protagonists, Maria, attempts to simulate a whole planet where some artificial life is possible. In *Permutation City*, the idea of creating various digital realities and copies inhabiting them which are only slightly different from each other is, in a way, similar to the idea of multiple worlds/realities that Egan tried to describe in *Quarantine*, where the imaginary consequences of the *Copenhagen Interpretation of Quantum Mechanics and Everett's Many Words Interpretation* are intertwined. For more differences between CI and MWI of Quantum mechanics in sf see, for example, [5].

While alternative digital worlds in *Permutation City* contain only digital copies of human beings that opted for digital immortality, the dystopic world of *Altered Carbon* by Richard Morgan demonstrates one more way of the employment of digital technologies to attain the possibility of immortality. In *Altered Carbon*, thanks to revolutionary digital technologies, everything that a person experiences in his/her life is constantly copied to a brain microchip, which can be extracted after the physical death of a body and implanted into a new body. Theoretically, this technique ensures digital immortality, which may refer, strictly speaking, to the immortality of consciousness intended as saved life experiences, memories, thoughts, perceptions, etc. usually perceived as soul in most religions. However, even though digital technologies help to realize a utopian dream of immortality by ensuring digital immortality, the imaginary world of the novel is far from being utopian. Morgan draws our attention to numerous dystopian trends these technologies bring with them. In fact, the author tries to sensitize the readers to the idea that this kind of storage and transplantation of the vital information (actually, the core of personality), though seems to be an ideal solution to live forever, in reality creates many serious problems due to the far-reaching flaws of human nature, like greediness (for power and money), aggression, etc.

As stated, the *novum* in the novel is the possibility to store individual life experiences on the microchip and this embraces several concepts: artificial organ transplantation (chip), creation of a cyborg, hypothetical possibility of

eternal life through innumerable brain chip re-implantation, and many others. The author raises many issues related to these concepts: ethical, philosophical, medical, psychological, legal, etc. On the one hand, the long cherished dream of humankind of eternal life has become realistic; after the death of the body all personal memories (read: the core of personality) can be extracted and loaded onto the chip and brought again to life in another body, which process can be repeated to infinity. On the other hand, this almost utopian idea creates a dark dystopian reality: there are not enough suitable bodies for everyone and that leads to criminal, illegal phenomena, such as murder, body snatching, etc. Also, it leads to inequality, as not everyone can obtain a new body when needed. Like any other transplantation, this operation of re-sleeving causes side effects, it influences negatively the consciousness, causes memory interferences and other mental problems. There are already enough mental problems and diseases, which can invalidate a normal human body but in case of such chip implantation, the recipient body comes into conflict with the implanted chip, producing various mental disorders described in the novel.

The paper focused on the possible impacts of digital technologies on society and human nature in *Permutation City, Quarantine* and *Altered Carbon*. It studied some dystopian trends in the posthuman societies of the future caused by the realization of a utopian dream of immortality through digital immortality. Both Egan and Morgan warn that even the most advanced and revolutionary digital technologies are not enough to stop all the negative social trends and to create an ideal harmonious utopian society. More effective radical changes are necessary, human nature included, otherwise all the current negative trends will be transferred to simulated realities and future posthuman worlds.

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ФОРМИРОВАНИЕ ФОНЕТИЧЕСКИХ НАВЫКОВ НА ЗАНЯТИЯХ ПО ИНОСТРАННОМУ ЯЗЫКУ У СТУДЕНТОВ НЕЯЗЫКОВЫХ ВУЗОВ

FORMATION OF PHONETIC SKILLS AT THE LESSONS OF FOREIGN LANGUAGE FOR STUDENTS OF NON-LINGUISTIC SPECIALTIES IN HIGHER EDUCATION INSTITUTIONS

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В статье рассматривается важность обучения фонетике в рамках короткого курса изучения иностранного языка, когда программой не предусмотрены специальный вводно-фонетический курс для нового иностранного языка, приводятся примеры упражнений для испанского и французского языков для формирования правильных произносительных навыков.

The article discusses the importance of teaching phonetics as part of a short course of learning a foreign language, when the program does not provide a special introductory phonetic course for a new foreign language, examples of exercises for Spanish and French for the formation of correct pronunciation skills are given.