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Biomedical Moral Enhancement for Human Space Missions

Konrad Szocik

University of Information Technology
and Management in Rzeszow
Sucharskiego 2 Street
35-225 Rzeszow, Poland

e-mail: kszocik@wsiz.rzeszow.pl

Abstract:
Biomedical moral enhancement is an idea which states that human moral intuitions and patterns may be artificially improved by biomedical means. The rationale which lies behind moral bioenhancement is rooted in the idea that humans – in a moral and behavioral sense – are not evolutionally adapted to current ecological challenges. This idea is discussed in the paper in relation to human space missions to Mars and beyond. Because the space environment is a hazardous environment, there are some reasons to consider the idea of moral bioenhancement for the purposes of mission success and the safety of astronauts/space settlers. This paper discusses that idea in the context of a broader discussion on moral enhancement, moral bioenhancement related to earthly issues, and the idea of moral progress.
Keywords: moral enhancement, biomedical moral enhancement, human space missions, moral progress, space philosophy, space ethics.

1. Introduction

Human space exploration is challenging for many reasons. First of all, space exploration is hazardous due to such factors as galactic cosmic rays (GCR), solar energetic particle events (SEP) or altered gravity. Physical and physiological challenges are not a unique kind of challenge which may be faced during space missions. A specific kind of challenge are moral and behavioral challenges. In this paper, the latter are discussed. As on Earth, the space environment will involve different moral situations. Isolation and the confined environment in space may be more challenging than many other places on Earth, due to the distance from Earth. The following idea is discussed in this paper: if the space environment is challenging for human moral behaviors, there are some reasons to consider the idea of moral enhancement. This paper starts from the idea of biomedical moral enhancement discussed in relation to Earth, and then moves to the specific case of its possible application – a human mission to Mars and beyond.

2. Moral Enhancement and Moral Progress – an Outline of the Idea

It is worth keeping in mind the fact that something like moral enhancement already exists in the human population; it has been broadly applied for centuries and, as such, is morally and socially required. Moral enhancement may include all socially practiced ways and methods of human education in relation to moral intuitions and behaviors. For instance, parental education is a basic and possibly the most important and most effective way of moral enhancement. Humans are morally enhanced not only by parents but also by social institutions which work in more or less direct ways. As the theory of cultural evolution shows, transmission of ideas and cultural traits occur in vertical, horizontal and oblique directions [7]. Vertical transmission is a transmission from parents to offspring. Horizontal transmission includes transmission among peers in a population. Oblique transmission is a transmission from unrelated adults to children. Moral enhancement may happen in all three directions. While parental education – a kind of vertical transmission – may be considered one of the most important and effective methods of moral enhancement, the other two are no less important. They include such institutions as the justice system or cultural habits and legal norms. Institutions which enhance human morality in a more indirect way are the free market economy or different kinds of social networks including social media.

The idea of moral enhancement is associated with the idea of moral progress. It remains an open question as to whether moral enhancement is identical with moral progress, or if moral enhancement does not necessarily mean progress. However, as James Schwartz rightly argues, the term enhancement assumes that we attempt to approach some target which is perceived as something better than we currently possess [6]. When the term enhancement is applied to morality, it should consequently mean that morality is not a fixed phenomenon, but it comes in degrees and it may be described in terms of progress and regression. While we can and possibly we should use the alternative terms such as – following Schwartz's suggestion – modification which is a value-neutral term, here we are obligated to apply the term enhancement in the way in which is used in the discussion on moral bioenhancement [1], [5]. Because the term enhancement is not a value-neutral term, rather it implies that we are going to approach a better version or a better level of a particular feature, there are good reasons to identify moral enhancement with moral progress.

The idea of moral progress is discussed by, among others, Allen Buchanan and Russell Powell [1]. The idea of moral progress is often questioned and, as such, is usually considered a politically incorrect idea. What kind of controversy is included in that idea? When one assumes that progress in morality is possible, the next unavoidable and logical assumption must be the idea that individuals and societies as well are divided into those more or less developed in a moral sense. It is hard to find a clear and simple criterion which could be used to distinguish moral progress or moral regression. If one person accepts a woman's right to abortion on demand, while another questions such a right, can we call some of them morally better developed than the others, or vice versa? While some of us may be prone to argue that it is better for the world and for humanity if people are rather friendly and helpful than hostile and aggressive, it is not clear how to define precisely this moral progress, and to determine whether something like moral progress really exists. Another challenge lies in the fact that not always are these mentioned criteria of friendliness, kindness or empathy at work.

Buchanan and Powell offer such a criterion which makes it possible to define morality in terms of progress or regression independently based on collateral, associated factors such as the above-mentioned kindness or empathy. They point out that moral progress may happen when our morality gets more and more inclusive. Their main criterion is just this moral inclusion. Moral inclusion means that more and more people will be included to become the subjects of our moral good patterns and intuitions and, in fact, human rights. The progressive morality is a kind of morality which excludes as few other humans as possible. The ideal progressive morality will include all humanity, and it even should go further, beyond the borders of the human species. Such inter-species inclusive morality is really the case of the current humanitarian approach to the non-human animals when some part of humanity decides to apply moral rules to other animal species.

When we take for granted the criterion of moral progress elaborated by Buchanan and Powell, we now get a conceptual tool which enables a relatively simple and correct assessment of moral progress or moral regression. We can compare two persons in the context of their different attitudes towards a particular pattern and then we can evaluate their attitudes in terms of moral progress. For instance, if one of these persons accepts slavery but another one is against it, the latter one represents the moral progress because he includes in the moral circle people who for the other person are only "slaves." If one argues for equal rights for homosexuals but another person argues that homosexuals should be only tolerated without having full human rights, the first person possesses a progressive morality. He treats equally homosexuals and heterosexuals, and he gives homosexuals the same human rights and the same moral standing. His moral circle is larger and, as such, more inclusive than the moral circle of another person who questions an equal moral standing for homosexuals. We can multiply examples of moral progress by applying the mentioned criterion formulated by Buchanan and Powell. From the historical point of view, we may find – at least in Western culture – a kind of transition from the exclusivist to a more and more inclusivist moral approach. The moral circle has included more and more people. That process, in fact, consists in including new groups/categories of people/citizens who before the process of their moral – and also often legal – inclusion were discriminated against and, as such, were beyond the moral circle. Women did not have many rights until the 20th century. Later, moral progress included people other than white Europeans and Americans. Before that, non-white people could be exploited as slaves because it was assumed that they were beyond the limits of the same morality as white people. While today non-white people other have the same rights and no one questions their moral standing, the inclusivist approach to homosexuals and other sexual minorities still remains a challenge. Because of their sexual preferences, homosexuals are often excluded from the full set of human rights which are a domain of heterosexuals. The idea of human rights and the human rights movement are the best examples of moral progress.

The idea of moral progress understood as a transition from moral exclusivism to moral inclusivism is a common sense idea. Such an idea may be a useful rhetorical tool in discussion with those people who question the equal full moral and legal rights of some groups such as sexual, religious or ethnic minorities. An important assumption in the theory of moral progress is the idea that the human evolutionary past makes humans more or less hard-wired for the exclusivist morality. This is a challenging assumption which may be questioned. That idea states that because of the long past in small hunter-gatherer groups, humans find the idea of a peaceful and friendly approach to all other humans still more or less challenging. It is assumed that because of that long evolutionary pressure, humans may be prone to exclude from their moral circle people who are not similar to them. Even if someone is trying to be friendly towards others, he may find the idea of treating all humanity in the same equal way in a moral sense, more or less challenging. This is why in human history people often divided themselves according to their in-group features, and why they emphasized the importance of their difference from others. That difference often worked as a sufficient rationale to assign to one's own group a special moral status and, analogically, to treat other groups as morally less important, deprived of the same moral rights. While some ethicists, philosophers and evolutionists may claim that because of that evolutionary history we have, as a default moral domain, the exclusivist morality, others argue that the exclusivist morality is no less context-dependent than the inclusivist morality. The point of controversy lies in the following question: how strong and to what extent are the past evolutionary pressures able to affect and to determine our current moral intuitions? Buchanan and Powell represent that latter approach. They argue that we should not overestimate the putative causal role played by the human evolutionary past. They suggest that both kinds of morality, exclusivist and inclusivist, are context-dependent, and that humans are morally flexible, not fixed. This assumption makes them a kind of moral and psychological optimist. Consequently, they argue that the transition from the exclusivist to the inclusivist morality is not so hard – if possible at all – like so-called evoconservatives take for granted. The evoconservative approach overestimates the importance of the human evolutionary past and states that humans are hard-wired for the exclusivist morality, and they are not able – or

they are able only to a small extent – to leave the borders of the exclusivist morality moving towards the more inclusive moral approach.

Buchanan and Powell argue that moral progress occurs by different kinds of "proper demoralizations" and "proper moralizations." Proper demoralization means that those acts which were treated in the past as morally wrong, today are considered morally permissible. Analogically, proper moralization includes those kinds of acts which were morally accepted in the past, but which today are considered morally impermissible. The definition of moral progress as an inclusion of new groups of people works here as a criterion of proper demoralization or proper moralization.

Moral enhancement is one of the branches of human enhancement in general which includes physiological and psychological enhancements. There are some evolutionary reasons for moral enhancement but not necessarily for biomedical moral enhancement. It is worth keeping in mind that while a moral enhancement as such is both morally desirable and morally required, its particular form – the moral enhancement by biomedical means – is not necessarily the best option and not always – if at all – should be considered and applied. The justification for moral enhancement is rooted in the following idea. Human morality as such is considered a kind of exclusivist morality. This is a kind of morality which does not involve in the same equal way all human beings. Consequently, the exclusivist morality divides humans into at least two groups. One of the groups includes humans who are the subjects of our good moral intuitions and who are treated with the full respect. They are people who get from us the full human rights. It is worth mentioning here that we should not mix up two different issues. One of them is the special status of relatives and friends who possess a special moral standing both in exclusivist and inclusivist moral approaches. Someone who possesses the exclusivist morality usually treats his relatives and friends in the same way as someone who shares the inclusivist morality. The point of the difference lies elsewhere. From the biological but also social point of view it seems to be natural and expected that humans should treat their relatives and close friends in a different way than they treat the rest of the human population. It is also acceptable from the biological and social perspectives that the members of our group which includes both micro- and macro-levels such as a professional community but also the population of a city, region or country, may be treated in a special way when compared with others. The point of the difference between the exclusivist and inclusivist moralities lies in the fact that the exclusivist morality limits some basic moral patterns, intuitions and human rights to particular kinds of humans who possess particular features. For instance, depending on the kind of the exclusivist morality, the right to possess all human rights has been assigned in human history only to men, Catholic, Christian, or white, just to mention a few historical examples. In the Western countries which accepted slavery and the racial policy in the past, the kind of moral exclusivism has excluded non-European inhabitants of the colonized countries [3]. There were no moral obstacles towards people classified beyond the moral circle to make them slaves of European or American citizens. Today, the same societies which finally abolished slavery, treat all people equally – in fact, they assign the same moral status to all people. There is no kind of people beyond the moral circle who could become slaves again. As such, those societies became the inclusivist societies in a moral sense.

Another example is the human attitude towards homosexuals. Not everyone is prone to agree that homosexuals should possess the same rights as heterosexuals. The main obstacle lies in their sexual preferences. The representatives of the exclusivist moral attitude towards homosexuals assume that because of the homosexual preferences – different than their own heterosexual ones – homosexuals cannot be the subjects of some moral and, consequently, legal rights which are guaranteed for heterosexuals. Those heterosexuals who do not want to give the same moral rights and, in fact, some basic human rights to homosexuals, are the moral exclusivists. They may become the moral inclusivists only when they extend their moral intuitions and patterns to homosexuals and remove the criterion of sexual preferences as the necessary condition for an equal moral standing. However, even then, their morality does not necessarily become fully inclusivist if they attempt to exclude other groups. But, at least, their exclusivist morality has a good chance of becoming more inclusivist.

The ideal of inclusivist morality which treats in the same way all humans in terms of moral and human rights, is challenging for many people despite the fact that, from some point of view, it should be something easy and obvious. Someone could ask why such secondary traits as sexual orientation, religious denomination, or the color of skin should exclude humans from being the subjects of equal moral and human rights. The evolution of the exclusivist morality, but also the fact that it is so common even today, is usually explained in terms of the human evolutionary past. It is assumed that the so-called Environment of Evolutionary Adaptedness has shaped the basic human moral intuitions which were highly exclusivist. This kind of evolved morality is designed to work in small populations of related individuals. Consequently, virtually everyone who is beyond the circle of relatives may be treated as an enemy or, at least, as someone who is beyond the limits of those evolved moral intuitions. As this story assumes, a human morality which has been evolved in small groups and for small groups, is not evolutionarily designed for humans living in large groups of unrelated individuals. This is a kind of an evolutionary challenge which may be explained in terms of a mismatch between the evolutionary human moral psychology and modern moral ecology [1]. It may be assumed that in the ancestral environment, there was no need for moral enhancement because humans are biologically equipped in moral intuitions such as kin selection, and direct and indirect reciprocity which did their job efficiently in small communities through thousands of thousands of years. The idea of the exclusivist morality states that the human ancestors did not have a selective pressure for the evolution of a kind of morality which will work equally towards all humans. It is possible that such inclusivist morality would be even deleterious in situations if it has been developed only by one group but not by another.

When the number of people started to grow in the Holocene to reach its peak in the modern times, the need for moral enhancement became more and more urgent. The new challenge arose: the amount of people became so large that it was not possible any longer to fight permanently with any neighbor. Collaboration and a kind of a peaceful co-existence is a new social and political, but also ethical necessity. The basic cultural tools of moral enhancement include religion, philosophy (mostly moral philosophy), or law. There are at work also some indirect ways of social and cultural enhancements such as the already mentioned free market economy which were not invented for the purpose of moral enhancement. That function has been coopted to the primary economic function like in many other forms of social networks. Today, the important role in global moral enhancement is played by the international institutions such as the UN or NATO, just to mention a few. This is a kind of moral enhancement which works on the global scale. It is worth mentioning the fact that the current attitude towards the non-human animals, which is getting more and more humanitarian, is also an example of a kind of moral enhancement.

3. Biomedical Moral Enhancement

While the human moral enhancement as such is both desirable and required, it is not clear what kind of tools should be applied to achieve a better, more progressive morality. Some of the tools are already known because they were applied broadly through centuries, such as religious systems or international law. However, two remarks are worth keeping in mind. First, there are good reasons to assume that particular tools of moral enhancement – let us assume that such tools like religion or law as such are effective – need some proper moral ecology to work. The same religion may enhance morality in one environment, but it may be ineffective or even hazardous in another environment. Consequently, it is hard to state that a particular way of moral enhancement is always effective as such. A particular tool of enhancement should be a part of a broader constellation. We find that religion has played a substantial role in European history, but the same religion today is marginalized. It is possible that religion has stopped playing any role today, at least not on the global scale. Consequently, it is hard to estimate precisely the expected effects of application of a particular tool of moral enhancement even if the same tool worked well in the past.

Second, the challenge is increased today when humanity is confronted with new ecological challenges and existential threats. But that challenge does not refer only to looking for the most

effective ways to cope with current risks. This is a question about so-called human nature: what kind of theory of humanity, and the philosophy of human beings should be elaborated today? What is the ideal set of moral features and moral intuitions virtually possessed by the human being? Policy planners and ethicists should answer those and other questions and decide what kind of moral features should be developed or just implemented. First, the main fields of risks and threats should be identified. Then, the set of desirable human moral intuitions should be formulated. The possible candidates include altruism or empathy. However, it is hard to predict whether the population of altruists would be able to prevent an ecological disaster. But even if we assume that the main global challenge is climate change, and the best countermeasure is the moral human enhancement for altruism and empathy, possibly interspecies altruism and interspecies empathy would be the right choice.

The currently applied ways of moral enhancement are non-biomedical and, as such, they are non-invasive, non-heritable and possibly reversible. They are non-invasive in a physiological sense because they do not take the form of pills or injections and, as such, they do not interfere with the human body. But there are good reasons to treat them as invasive in a psychological sense. This is the case of, among others, the religious education of children. Moral enhancement is non-heritable in a genetic sense because acquired moral traits are not inherited to succeeding generations in genetic terms. However, they may be heritable in terms of cultural vertical, horizontal or oblique transmissions [7]. Human enhancement is also possibly reversible. Applied moral norms may be replaced by others even if they seem to be deeply rooted in the moral system of a particular human. While all three criteria may be discussed as context-dependent in relation to moral enhancement, moral enhancement as such is non-invasive, non-heritable and virtually reversible when compared with genetic moral enhancement.

Biomedical moral enhancement is an ethical issue due to the fact that – in contrast to moral enhancement – it is invasive, may be heritable and possibly is irreversible. However, there are at work several possible ways of biomedical moral enhancement which differ substantially. Those differences affect their ethical status. Let us consider two basic ways of biomedical moral enhancement, pharmacological and genetic. Pharmacological enhancement may include pills and injections and, as such, is treated as ethically less challenging than genetic enhancement. However, genetic enhancement comes in degrees in the ethical sense. Somatic gene editing is less controversial than germline gene editing due to the fact that the former does not need to be passed on to succeeding generations. We get a rationale for biomedical moral enhancement, when we find that the ideal peak of moral inclusivism cannot be reached by non-biomedical means. If the social and ecological crisis requires an urgent intervention, we have a strong reason for moral bioenhancement – when we make sure that some substantial changes in human moral intuitions and patterns are required. The question arises as to whether anyone may be convinced that only biomedical moral enhancement is able to shape human morality in a desirable direction.

The advocates of biomedical moral enhancement argue that the mismatch between evolved psychology and the current ecology is too large, and ecological issues are too urgent to be able to wait a long time for possible progress in human morality on the global scale. Another question arises here. Is an ideal moral inclusivism ever possible on the global scale without biomedical enhancement?

Buchanan and Powell argue against the idea of moral bioenhancement proposed by Ingmar Persson and Julian Savulescu. The idea of biomedical moral enhancement states that there are good reasons to improve human morality by biomedical tools [5]. Because human moral ecology evolves much faster than human psychology, artificial enhancement of our morality is being considered. Buchanan and Powell argue that while that idea is an interesting proposal, it is hard to create an appropriate social, ethical and legal order in which any kind of biomedical enhancement could be applied in mass to the human population. As an alternative for the moral enhancement made by biomedical means, the authors argue for the standard methods of enhancement such as an institutional support for human rights, among others [1].

4. Moral Enhancement in Space

There are good reasons to look for effective tools of moral enhancement for space missions, mostly for the future possible human space settlement. Isolation and distance from Earth are mentioned as the most challenging factors in space, close to space radiation and altered gravity [4]. It is worth keeping in mind that isolation as such is not a challenging factor itself as far as an isolated individual has a chance to change his environment. However, isolation in space connected with the distance from Earth is getting more and more challenging than any comparable state of isolation on Earth. The challenge arises when the future space settler will attempt to come back to Earth – let us assume that human life and human civilization will remain on Earth. This is not obvious in the future, mostly in scenarios in which space settlement is considered as a kind of space refuge. However, when life on Earth will be possible in the future, some people for some reasons should have the right to come back to Earth when they decide to leave a space colony. Robert Cowley rightly discusses it as an obligatory precondition for any idea of space colonization [2]. He adds that such a right requires a proper transportation system between Earth and a space colony. This is an important remark which shows how human rights are strongly affected and dependent on some basic infrastructural and material issues. This issue is discussed by Buchanan and Powell when they argue that the idea of human rights got a chance for realization after World War II in rich countries of the West.

However, an appropriately fast and regular transportation system between a space colony and Earth may be challenging, at least in the first period of a space settlement program. This virtual technological gap opens space for a specific moral enhancement space program. Human moral enhancement for space is not considered only to guarantee the mission's success. Such a kind of enhancement is considered also for the interest of space settlers who may be not able to cope with stress and all the psychological pressures during the long-term space missions. When fast travel back to Earth is impossible, human moral enhancement may become not only morally permissible but even morally required. Consequently, when the state of the art in space technology is not effective enough, human enhancement in general and human moral enhancement in particular may be the only reasonable and feasible option.

5. Biomedical Moral Enhancement in Space

As far as no human has ever lived on a planet other than Earth, no one may guarantee that the training programme and candidate selection will prepare effectively and sufficiently future deep-space astronauts in a moral and behavioral sense. Before the successful completion of the first human mission to Mars or another space body, the idea of moral bioenhancement will be an option which should be considered. A decision by mission planners to not apply moral bioenhancement may be – theoretically – a strong argument to hold them accountable for mission failure if the reason for possible failure lies in the morality and behaviors of the astronauts.

There are good reasons to argue for the biomedical moral enhancement of the future deep-space astronauts. The rationale is apparently evident and strong: the specific, difficult conditions of a space settlement/space base including a relatively high risk of the mission failure which provides strong reasons to prepare astronauts as well as possible. Objections to applying moral bioenhancement are weaker than expected benefits – it is assumed here that criteria of safety and efficacy are met. However, philosophical discussion on that topic is complicated due to the fact that it is assumed here that the moral bioenhancement will be applied for first time in human history for the purposes of a space mission. If moral bioenhancement has already been applied in other fields of human life, biomedical moral enhancement for space would no longer be an ethical issue. But the challenge arises that some laboratory tests, and proper legislation and public policy are required to make possible biomedical moral enhancement for space. This is why such philosophical consideration is a kind of vicious circle. An argument for moral bioenhancement for space would

require working out such a kind of social and public policy which already makes discussion, law and laboratory tests on moral bioenhancement possible and acceptable.

It is possible that while we may/possibly should wait some time for the progress in space science and technology to make possible better/faster interplanetary transportation and habitats as safe as possible, the same is not necessarily true for the human psyche. The argument goes as follows. There are some reasons to postpone the decision on a human space program to avoid unnecessary risk. Current risky factors may be neutralized by the technology which will be developed in the near future. But what about moral enhancement and human psychology? It is possible that the unique tool for modification of human moral and behavioral patterns in such a specific environment will be always only moral enhancement by biomedical means. If we assume that informed consent is a necessary requirement, there should be no problem with that when such an enhancement would be applied only to adult volunteers. The ethical challenge arises when we consider the scenario of mass colonization, or when interplanetary travel becomes more or less available for an average person. Should we treat as morally acceptable a situation in which everyone who will travel to a space settlement – both volunteers as well as people obligated to travel – has an obligation to be morally enhanced biomedically? James Schwartz discussed a similar case in regard to disabled people [6]. One could say that there are plenty of activities on Earth in which some kind of moral and behavioral selection is at work. Due to the specificity of the hazardous space environment one could argue that – in regard to volunteer space settlement – future astronauts/settlers should be not selected but adapted by moral bioenhancement. The challenge arises when one considers the case of obligatory space missions such as for those under military service or in a situation where space settlement is considered as a kind of space refuge. Mostly in that latter scenario, not every settler should be obligated to be enhanced but mission organizers should provide proper infrastructure and system solutions to guarantee the appropriate level of security and collaboration.

There are good reasons to say after Schwartz that space travel should be treated in the same way as current airplane travel – everyone has a right to it and no requirements are at work. No one should need to be enhanced to be a passenger on an airplane. As long as space travel and space settlement will be an exclusivist undertaking, one may argue that one of the required preconditions is an obligatory moral bioenhancement. However, when space settlement becomes more available for a larger part of the population, there are good reasons to not apply moral bioenhancement but to offer alternative solutions which will not exclude un-enhanced humans. Human bioenhancement is considered here as an extra activity which cannot be treated as a basic and natural precondition – at least not for such a kind of service which is available to everyone.

6. Conclusions

Moral enhancement is a kind of enhancement which is probably inevitable since humans started to live and collaborate at the level of large groups. However, the crucial role is played by the theory of human behavior. The stronger the role assigned to the Environment of Evolutionary Adaptedness, the stronger the need for moral enhancement which is understood as a transition from the intuitive exclusivist morality to the inclusivist morality. While moral enhancement as such is commonly shared and applied, the question arises as to whether there is any rationale for making that process faster and more effective by biomedical means.

The context of future human space missions and the idea of space settlement opens space for new arguments. As long as human space exploration will be dangerous, difficult and limited only to narrowly selected and trained personnel, biomedical moral enhancement may be considered a reasonable option. However, the rationale for a mission also may play a role. Biomedical moral enhancement may be considered as a kind of intervention which is required when other alternatives are not available. It is worth considering the value of biomedical moral enhancement as such. It is hard to say that such a kind of enhancement for any reasons could be inherently wrong. Such enhancement like any other kind of radical enhancement should be reversible. Reversibility may be

a crucial criterion in relation to moral bioenhancement when the applied or modified function in space provides different capacities and outcomes than on Earth. But the final decision on biomedical moral enhancement should depend on mission targets and enhancement targets.

References

1. Buchanan, A., R. Powell. *The Evolution of Moral Progress. A Biocultural Theory*, Oxford University Press, 2018.
2. Cowley, R. Yes, We Earthlings Should Colonize Mars if Martian Rights Can Be Upheld, *Theology and Science* 17:3, 2019, pp. 332-340,
3. Gilbert, S., A. Alba (eds.). *Holocaust memory and racism in the postwar world*, Detroit, Michigan: Wayne State University Press, 2019.
4. NASA. 5 hazards of human spaceflight videos, 2018, available from: https://www.nasa.gov/hrp/hazards.
5. Persson, I., J. Savulescu. *Unfit for the future: the need for moral enhancement*, Oxford University Press, 2014.
6. Schwartz, J. S. J. The Accessible Universe. On the *Choice* to Require Bodily Modification for Space Exploration, In K. Szocik (ed.), *Human Enhancements for Space Missions. Lunar, Martian, and Future Missions to the Outer Planets*, Cham: Springer 2020 (in press).
7. Szocik, K. What is right and what is wrong in the Darwinian approach to the study of religion, *Social Evolution and History* 18 (2), 2019, pp. 210–228.

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Nietzsche and Transhumanism: A Meta-Analytical Perspective

Riccardo Campa

Institute of Sociology
Jagiellonian University
Grodzka 52 Street
31-044 Cracow, Poland

e-mail: riccardo.campa@uj.edu.pl

Abstract:
In recent years a debate has developed over the ties between Friedrich Nietzsche's ideas and transhumanism. This article clarifies some issues at the meta-level of the discussion. Firstly, the author provides a scientometric analysis of research trends to show the relevance of the topic. Secondly, he distinguishes between two analytical perspectives, which he calls 'noumenal' and 'phenomenal.' Thirdly, by taking the phenomenal perspective, the author shows that transhumanism can be classified into four different categories, namely: quasi-Nietzschean, Nietzschean, a-Nietzschean, and anti-Nietzschean. Finally, he provides historical examples of each single type of transhumanism. This way, the article also contributes to the history of transhumanist thought.
Keywords: Friedrich Nietzsche, overhuman, transhumanism, scientometrics, meta-analysis

1. A Preliminary Scientometric Analysis

The coinage of the word 'transhumanism' is generally credited to biologist Julian Huxley, who used it to signify the idea of self-directed evolution [1, p. 25]. The British scientist introduced the term, and the idea of founding a cultural movement under this name, in the first chapter of the book *New Bottles for New Wine*, published in 1957 [2]. Still, transhumanism as an organized movement emerged only in the last decade of the 20th century, with the foundation of the *Extropy Institute* in 1992 and the *World Transhumanist Association* (now *Humanity Plus*) in 1998 [3, pp. 37-8].

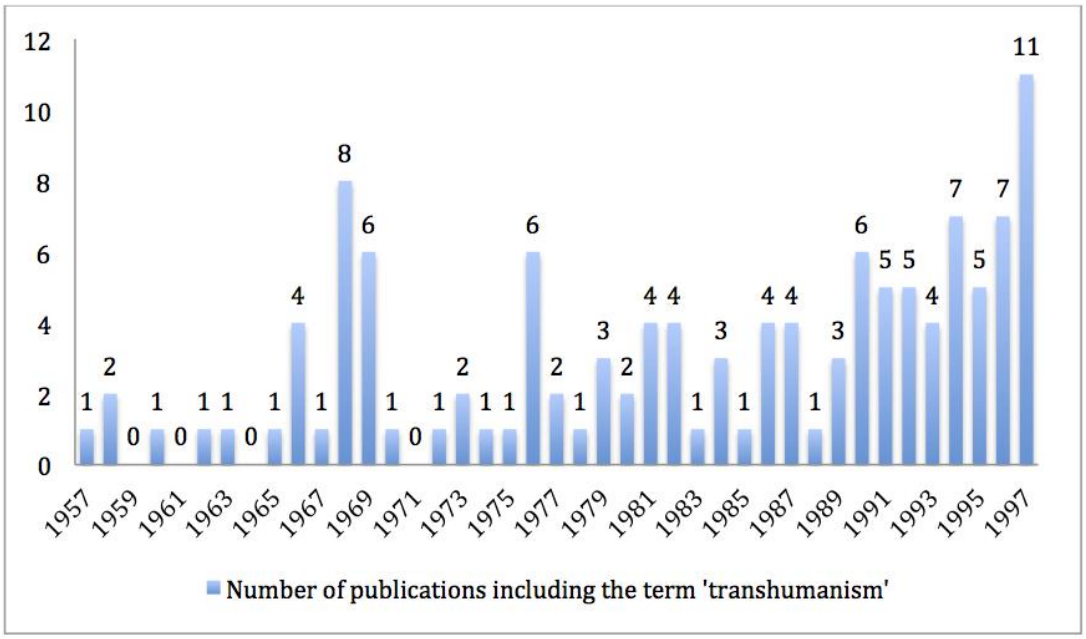
Since the emergence of the transhumanist movement, a discussion has started over the similarities and differences between the transhumanist idea of 'enhanced human' (or 'transhuman') and Friedrich Nietzsche's idea of 'Übermensch.' Can Nietzsche be seen as a forerunner of contemporary transhumanism?

Before discussing the issue, we are going to provide a brief scientometric analysis aimed at quantifying the magnitude of the debate. We will collect quantitative data from Google Scholar and use them to build graphs in Excel. It is well known that Google Scholar is not a fully reliable database. Among the flaws, one finds the following ones: 1) it does not detect all the existing articles and books; 2) the same item may occur more than one time; 3) the search engine sometimes mistakes the foundation date of a journal for the publication date of the article published in it (i.e.

the problem of 'false positives'); 4) some repositories (e.g. philpapers.org) include the category "similar books and articles" in metadata, with the effect of misleading the search engine. For these reasons, handmade search will also be occasionally implemented to control the reliability of the occurrences.

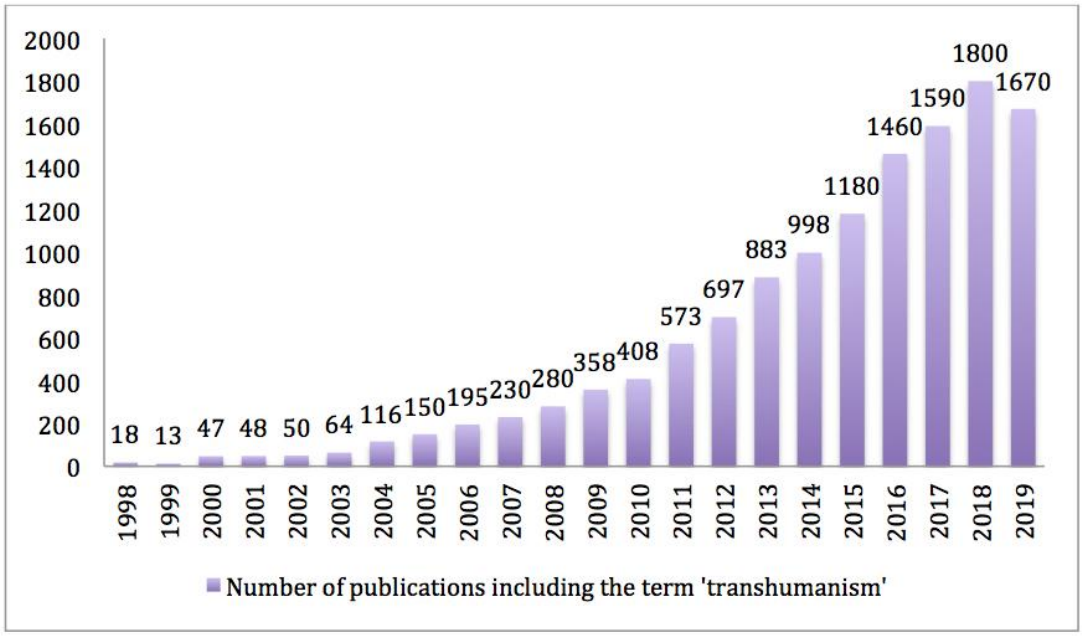
According to the Google Scholar database, overall, 1.120.000 scientific publications include the word 'Nietzsche', while 14.600 publications include the term 'transhumanism.' The interest paid by the scientific community to Nietzsche's writings is well known and does not need much explanation. Less known is the interest concerning transhumanism.

As Graph 1 shows, little use of the term 'transhumanism' was done in the period 1957-1997. We should not forget that in that period books and journals were mainly printed on paper, the mass-digitalization of paper documents started only in recent years, and Google database is still far form being complete. This means that some occurrences could have been left out. It is also true, however, that missing occurrences are partly compensated by 'false positives,' which presence have been confirmed by handmade search. Overall, there is little doubt that the debate becomes slightly more sparkling in the 1990s, after the appearance of the Extropy Institute.



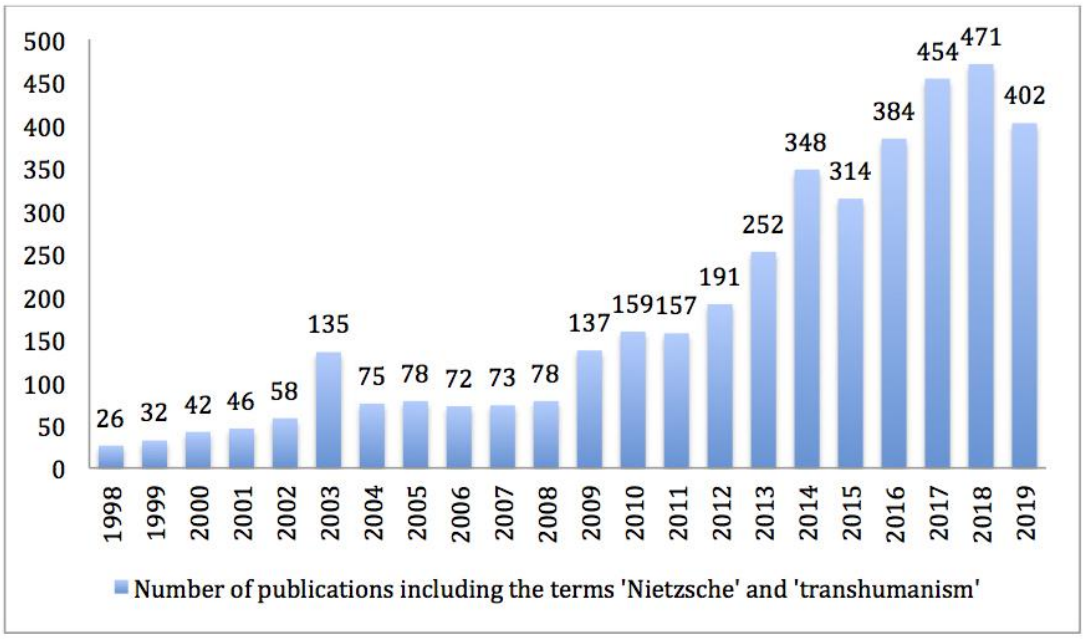
Graph 1: Annual frequency distribution of scientific publications including the term 'transhumanism' (period: 1957-1997)

Very different is the distribution over the period from 1998 to 2019. As Graph 2 shows, the absolute frequency of publications dealing with transhumanism, or at least mentioning the concept, in this period, keeps growing. The slight decrease of occurrences in 2019 is due to the fact that the survey was done at the end of November 2019, and therefore December 2019 was not included. The significant increase in frequency after 1998 can be partly explained with the activism fueled by the *World Transhumanist Association*.



Graph 2: Annual frequency distribution of scientific publications including the term ‘transhumanism’ (period: 1998-2019)

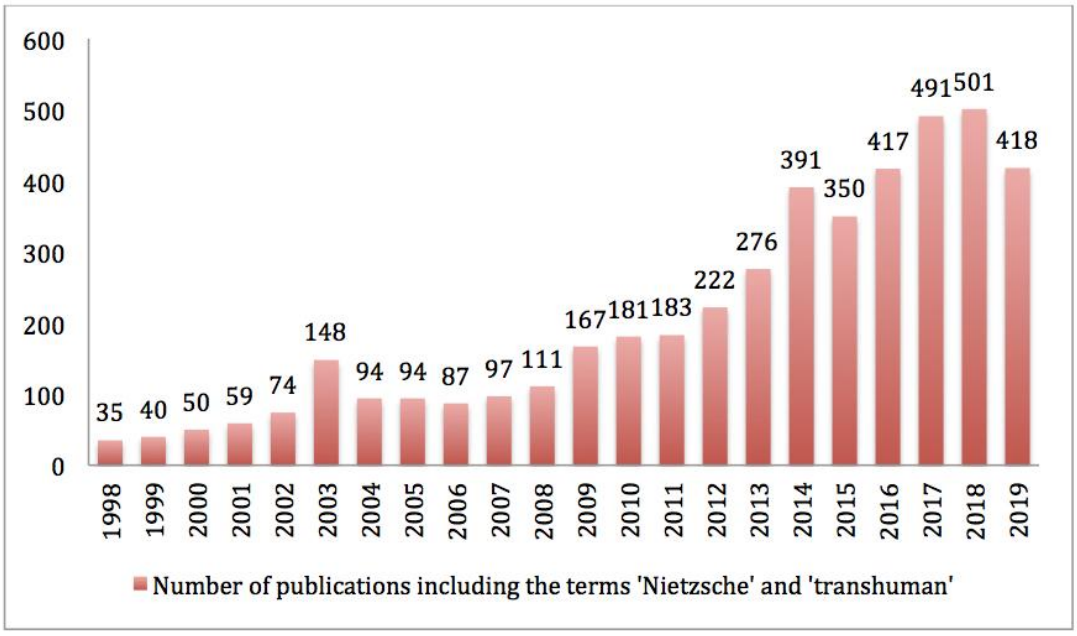
Quite interestingly, the search for the term ‘transhumanism’ in association with ‘Nietzsche’ gives 4520 results. This means that one third of the publications about transhumanism (30,96%, precisely) also mention Nietzsche. The state of proximity (or togetherness) of the two terms in the same documents is a good clue of the relevance of the issue that we are going to discuss. Another good reason to discuss the issue is the distribution of these publications over time. Indeed, it seems that the interest in the ties between Nietzsche and transhumanism is also growing over time, as Graph 3 shows.



Graph 3: Annual frequency distribution of scientific publications including the terms ‘transhumanism’ and ‘Nietzsche’ (period: 1998-2019)

As one can see, in 1998, we have 18 items including the term ‘transhumanism’ and 26 items including both the terms ‘transhumanism’ and ‘Nietzsche’, which makes no logical sense. A

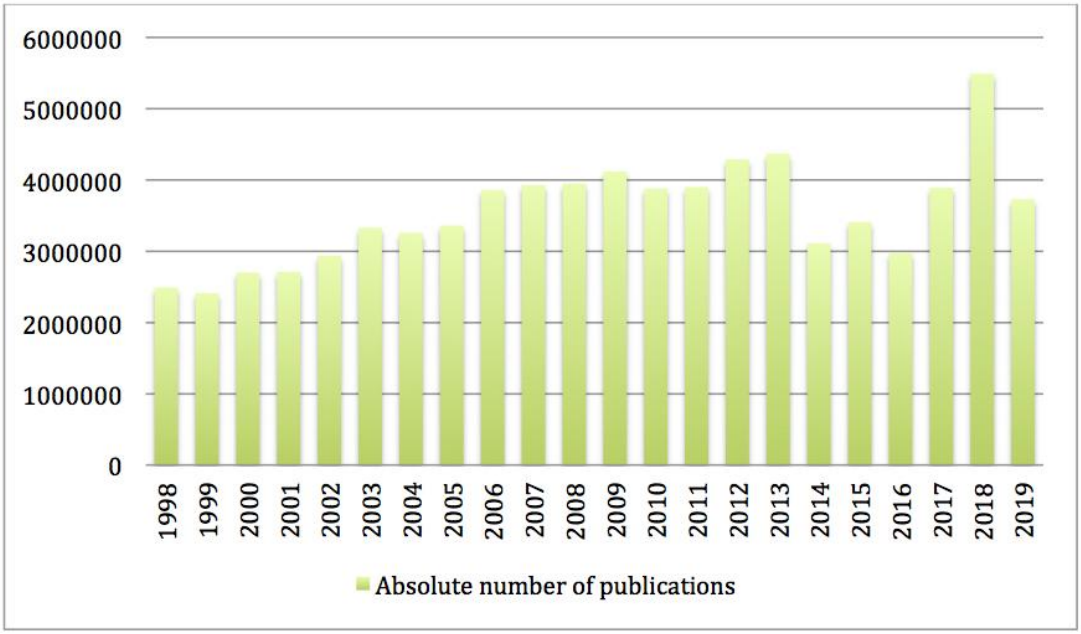
handmade search reveals that some of the detected items include the word ‘transhuman,’ not the word ‘transhumanism.’ The latter term is just present in the title of linked “similar books and articles.” For example, Iain Mackenzie’s article “Life, the universe and everything different” [4], which is a review of Keith Ansell Pearson’s book *Viroid Life: Perspectives on Nietzsche and the Transhuman Condition* [5], does not include the term ‘transhumanism.’ It must be noticed that Pearson’s *Viroid Life* does not contain this term either, although it is certainly on topic, since it discusses Nietzsche’s idea of ‘overhuman,’ the concept of ‘transhuman,’ the theories of Pierre Teilhard de Chardin and Julian Huxley, the role of technology in human evolution, and many other issues related to transhumanism, in the perspective of so-called continental philosophy. It could be useful, therefore, to also envision the annual frequency distribution of scientific publications including the terms ‘Nietzsche’ and ‘transhuman’ (see Graph 4).



Graph 4: Annual frequency distribution of scientific publications including the terms ‘transhuman’ and ‘Nietzsche’ (period: 1998-2019)

As one can see, the numbers are slightly higher, but the pattern of the curve is the same of Graph 3. In spite of the above-mentioned possible and actual mistakes of the search engine, these numbers provide a sufficiently reliable overview of the topic trend.

Our graphs show the absolute frequencies of the publications. Obviously, the relative frequency would tell us more about the proportion of intellectual effort devoted to these topics. Indeed, the growth of publications on one topic could simply be explained with the general growth of scientific publications. However, there is no need to calculate the relative frequency to verify that this is not the case. It is enough to have a look at the distribution frequency of publications globally (Graph 5).



Graph 5: Annual frequency distribution of scientific publications globally (period: 1998-2019)

As one can see, the curve does not follow the same pattern. Moreover, in the period 2014-2017, there is an evident decrease of scientific publications, in comparison with the previous years, while the books and articles mentioning 'transhumanism' keep growing over the period in a seemingly exponential fashion.

Let us focus in particular on Graph 3. It shows that in 2009 there was a change of gear in the discussion on the ties between Nietzsche and transhumanism. As citation analysis also confirms, to an appreciable extent, the change of gear is attributable to the article "Nietzsche, the Overhuman, and Transhumanism" by Stefan Lorenz Sorgner, published in the *Journal of Evolution and Technology* in March 2009 [6]. In that article, Sorgner took a critical position especially towards Nick Bostrom, who had previously drawn a brief history of transhumanism, rejecting the idea that Nietzsche could be counted among the forerunners of the movement. According to Bostrom, indeed, only some "surface-level similarities with the Nietzschean vision" exist [7]. In contrast, Sorgner states that "significant similarities between the posthuman and the overhuman can be found on a fundamental level."

I wrote several articles and books in Italian on this issue, and my conclusions were the same as Sorgner's. In 2007, I published *Etica della scienza pura* (The Ethics of Pure Science), a six hundred pages book on the history of scientific ethos, which also includes a genealogy of transhumanism [8]. In that book, the most substantial chapter is the one devoted to Nietzsche. In the same year, I resumed the discussion even more explicitly in the article "Scienza e superuomo nel pensiero di Friedrich Nietzsche: Per una genealogia del transumanesimo" (Science and Superman in Friedrich Nietzsche's Thought: For a Genealogy of Transhumanism) [9]. Nietzsche's legacy is also emphasized in my subsequent writings on transhumanism and, in particular, in my books *Mutare o perire: La sfida del transumanesimo* (Mutate or Perish. The Challenge of Transhumanism) [10] and *La specie artificiale: Saggio di bioetica evolutiva* (The Artificial Species. An Essay on Evolutionary Bioethics) [11]. This does not mean that I subscribe to all Nietzsche's ideas, nor that by recognizing the German philosopher as a precursor of transhumanism I intend to exclude his detractors from the genealogy of the movement, as in my view 'transhumanism' is just another name for 'the philosophy of human enhancement' – a philosophy that can be coupled with many different religious and political views.

Here, however, I am not going to repeat what I wrote in those works, although I am aware that having them published in Italian has greatly limited the spread. Let us say that I find the

argument put forward by Sorgner sufficiently articulated and convincing, so that I do not now feel the need to enter again into the merit of the discussion.

Here, I intend to clarify some issues at the meta-level of the discussion. To be sure, given the large number of publications on the topic, I will neither provide a full meta-analysis of the issue, nor a complete literary review. My current goal is just to build an analytical frame in which the many publications on Nietzsche and transhumanism could be codified and classified. The meta-analysis that follows is qualitative in character and based on exemplary cases. I will first underline the difference between two analytical perspectives, which here I call 'noumenal' and 'phenomenal.' Then I will analyze the discussion on Nietzsche and transhumanism through the prism of the phenomenal perspective.

2. Two Analytical Perspectives: Noumenal vs. Phenomenal

Nietzsche distinguished two categories of people: those who are 'faithful to Heaven' and those who are 'faithful to the Earth.' The Christians belonged to the first category. Some of Nietzsche's contemporaries, and – long before them – the ancient Pagans, belonged to the second. Nietzsche's preference goes, notoriously, to the people of the second category, so much so that he urges his readers to remain faithful to Earth as the Greeks had been, at least until Socrates and Plato entered the stage of history.

These categories are not only useful in the sphere of social and political philosophy. They can also be applied to the history of ideas. Nietzsche wrote that "facts are just what there aren't, there are only interpretations" [12, p. 139]. We may add that interpretations themselves can be faithful to Heaven or faithful to the Earth.

Many noticed that our interlocutors, more or less consciously, tend to discuss issues as if the objects of the discussion had or had not a fixed and immutable essence. Some refer to ideas as they were a-historical objects, wondering about their truth, goodness, beauty, and assuming that these qualities can be objectively determined. Others keep their eyes mainly on the historical vicissitudes of ideas, that is, their birth, diffusion, social reputation, and disappearance. The first perspective is vertical, the second horizontal. The first perspective seems to start from the assumption that there is a 'thing in itself,' a noumenon, that transcends earthly events and exists independently of human sense and perception. The second perspective assumes that such an essence does not exist, or, if it does, is not knowable, and therefore focusing on ideas as phenomena is the most solid option. Many philosophical discussions have intersected with these different ways of seeing reality, in the field of ontology, epistemology, or the methodology of science. One may only think of the controversies between philosophers of being and philosophers of becoming in Antiquity, realists and nominalists in the Middle Ages, transcendentalists and immanentists, or idealists and materialists, in the modern age, or, finally, rationalists and constructivists in the field of contemporary epistemology. These philosophical discussions are certainly related to our meta-analysis, but any reference to their terminology could now generate misunderstandings. Therefore, as mentioned above, we will refer to the two intellectual attitudes as *the noumenal* and *the phenomenal* perspective.

There is a simple algorithm to find out if our interlocutor sees the world through a noumenal or a phenomenal prism. Whether one speaks of religion, politics, philosophy, or art, in case a controversy arises about the nature of an idea or a movement, those taking the first perspective will invariably appeal to the categories of *authenticity* and *uniqueness*, while those taking the second one will appeal to the categories of *diversity* and *multiplicity*.

For example, in a discussion on the nature of Christianity, those who take the noumenal perspective will try to resolve the controversy by contrasting 'false Christianity' with 'true Christianity.' That is, they will postulate the existence of a unique authentic Christianity that lies outside of history, beyond the opinions that humans can make of it on Earth, and will also postulate that they – unlike their interlocutors – are capable of grasping this a-historical essence.

On the contrary, those who take a phenomenal perspective will accept the fact that they are 'in the Matrix' no less than their interlocutors. As a consequence, they will temporarily put aside

their personal preferences and, faced with a controversy about the nature of Christianity, will recognize the fact that, here on Earth, there are many different Christianities. In other words, they will not try to bypass the observable phenomenon that there are groups of self-styled Christians who think and act differently but will take note of this difference and rather try to distinguish them analytically and possibly measure their scope. They will not qualify a variant of Christianity as 'authentic' and another as 'inauthentic,' but rather classify the different Christianities as Orthodox, Catholic, or Protestant. And they will go on in this classification, as long as there will be controversy, by distinguishing between Lutherans and Calvinists, Unitarians and Trinitarians, traditionalist Catholics and progressive Catholics, and so on. The second step after the distinction could be dynamic measurement. Those who take the phenomenal perspective, once having acknowledged multiplicity and diversity, could try to establish the 'weight' of the different Christianities, and how their weight in society historically varies.

Last but not least, when one takes a phenomenal perspective, attention does not go so much to people (scholars, authors, leaders, activists) as to documents (articles, books, written discourses, manifestos), given that people change over time and are reactive data sources, while documents are stable, they can be reviewed many times and they remain unchanged.

3. Four Ways of Relating Nietzsche to Transhumanism in a Phenomenal Perspective

The point we are going to make should be already clear to the reader. The analysis of the relationship between Nietzsche and transhumanism takes on a completely different form depending on whether one assumes a noumenal or phenomenal perspective. In the first case, it is assumed that somewhere outside history one finds 'the real Nietzsche' and 'the true transhumanism.' So it even makes sense to ask what Nietzsche would think of transhumanism if he were still alive. If one takes a phenomenal perspective, however, this question no longer makes sense, since it cannot have an objective answer. It cannot have an objective answer, not only because Nietzsche is dead and can neither confirm nor reject his association with contemporary transhumanism, but because there are different Nietzsches and transhumanisms in the empirical world. This multiplicity reverberates on two levels, one subjective and one objective. Nietzsche – like any other human being – has changed his mind about different issues in the course of his earthly existence. Moreover, no less than other scholars who left written testimonies, he has been interpreted and understood in different ways by his readers. As a consequence, there are *diverse* and *multiple* Nietzsches in circulation. Just as there are diverse and multiple Jesus Christs or Karl Marxs. Similarly, there are diverse and multiple transhumanisms, just as there are diverse and multiple Christianities or socialisms. On the one hand, transhumanists themselves have different ideas about what this movement is and should be. On the other hand, external observers interpret their doctrine in different ways.

To be clear, we are not saying that the noumenal perspective is wrong and the phenomenal one is correct, or that one cannot engage in both types of analysis. We are just saying that these perspectives are different and have different functions. Here we decided to take the second perspective because it can add something new to the debate.

By assuming the phenomenal perspective, it still makes sense to ask at least three questions about the relationship between Nietzsche and transhumanism. First of all, we can ask if there is on Earth a transhumanist group inspired by Nietzsche; what are its philosophical postulates, and which weight it has within the movement that includes all self-styled transhumanists. Equally sensible is the question inherent in the earthly existence of an a-Nietzschean transhumanism, that is, of a group that self-identifies as transhumanist, or accepts to be labeled transhumanist, but makes no reference to Nietzsche. Finally, a question can be legitimately asked about the existence of an anti-Nietzschean transhumanism, which explicitly distances itself from Nietzsche's ideas (or from what it perceives as Nietzsche's ideas). These are three questions that, at least on a historiographical level, can receive an objective response.

In relation to the first of the three questions, we can also proceed more cautiously, examining the degree of adherence to Nietzsche's thinking. Authors do not limit themselves to

repeating what has been said but build on what has been said. One accepts some ideas elaborated by a previous author, and then goes further. The acceptance ratio can vary. To take account, at least in part, of this difference in degree, we introduce a distinction between 'quasi-Nietzschean transhumanism' and 'Nietzschean transhumanism.'

The first one will include transhumanist documents which mention Nietzsche's ideas in an approbatory or non-hostile way, but whose authors also feel the need to explicitly reject some aspects or some uses that have been made of them. In the second type, we will include documents that tend to underline the importance of Nietzsche's thought for transhumanism, without dwelling too much on what we should instead abandon of his thought. On the whole, we will, therefore, take into account four types of transhumanism: quasi-Nietzschean, Nietzschean, a-Nietzschean, and anti-Nietzschean.

By adopting this horizontal approach, we are fully in the domain of the history of ideas and the sociology of knowledge, which form together a unified meta-analytical perspective. It is indeed worth recalling that Karl Mannheim has repeatedly equated the Wissenssoziologie to a "sociological history of ideas" [13, p. 65].

4. Quasi-Nietzschean Transhumanism

Explicit references to Nietzsche can already be found in the early works that introduce the terms 'transhuman' and 'transhumanism' into the philosophical and scientific debate. For instance, we find references in writings by Julian Huxley, Pierre Teilhard De Chardin, Robert Ettinger, and Fereidoun M. Esfandiary. These are rather approbatory o non-hostile citations. However, they are always accompanied by some *distinguo*.

To make a first example, Teilhard de Chardin talks about the need for humanity to take control over its own evolution, to move towards a new state of existence that he calls superhuman, ultrahuman, and transhuman.

In the preface of what is perhaps Teilhard's best-known book, *The Phenomenon of Man*, Julian Huxley notes that the author "quotes with approval Nietzsche's view that man is unfinished and must be surpassed or completed; and proceeds to deduce the steps needed for his completion" [14, p. 13].

Jules Carles and André Dupleix inform us that the Jesuit scientist, in 1940, when he was in China to do his work as a paleontologist, "finds time to read and read a lot, from Nietzsche to Jean Rostand, from Camus to Huxley and Sartre" [15, p. 56].

This information is crucial for our historical reconstruction. Notwithstanding the insight offered by Huxley, in the book *The Phenomenon of Man*, there are no explicit references to Nietzsche [16]. This is not surprising if we consider that the author read Nietzsche in 1940. Teilhard's most famous book was published posthumously in 1955 and translated into English in 1959 but was completed in the 1930s. As is well known, it was not immediately published because it did not obtain the *imprimatur*, that is the press authorization by the hierarchies of the Catholic Church, which at the time had not yet accepted the theory of evolution.

The references to Nietzsche and the concepts of 'ultrahuman,' 'transhuman,' and 'transhumanization' appear in the essays written after 1940 and partly collected in *The Future of Man* [17, pp. 239, 261, 298].

Although Nietzsche is sometimes described as the philosopher of egoism or the proponent of an individualism taken to the extreme, his horizon of thought is communitarian. The overhuman must, first of all, be desired, nurtured, bred, educated by the community of belonging. Teilhard recognizes that Nietzsche has well understood that the self-directed evolution of the species, which is the result of a higher level of 'reflection,' can only have a social, communitarian dimension. The priest says: "As Nietzsche has rightly observed, although he put the wrong construction on it, the individual, faced by himself alone, cannot know himself exhaustively. It is only when opposed to other men that he can discover his own depth and wholeness. However personal and

incommunicable it may be at its root and origin, Reflection can only be developed in communion with others. It is essentially a *social* phenomenon" [17, p. 126].

It will be noted that the Jesuit, to the expression "has rightly observed," adds the phrase "he put the wrong construction on it." It is known that Nietzsche is a resolutely anti-Christian philosopher, while Teilhard, although atypical, however far from orthodoxy, remains a Catholic priest. It is therefore inevitable that, in addition to the points of agreement, there are points of divergence. Let us analyze in detail this ambivalent relationship.

In the essay "The Great Option," also included in *The Future of Man*, the Jesuit distinguishes between two optimistic attitudes, one typical of Christians and the other of secular progressives of his time: 'Optimism of Withdrawal' vs. 'Optimism of Evolution.' Christians hope and believe in an escape from the world to a superior, transcendent reality. They look upwards, to Heaven, to God. On the contrary, the secularized optimists of our times (Enlighteners, positivists, socialists, Nietzschean, etc.) look forward, to an improvement of the human condition that is supposed to take place in this Universe. Distinguishing himself from his coreligionists, Teilhard states that the latter are "the true optimists" [17, p. 35]. Consistently, he urges Christians to redirect their optimism, by having faith in the evolutionary laws of the Universe. He says: "Let us follow the others, in their effort to steer the human vessel onward through the tempests of the future" [17, p. 36].

One will notice the use of a Nietzschean topos by the Jesuit father (the exhortation to be faithful to Earth), associated to a sincere sympathy for the immanent vision of an evolution that is resolved positively with the advent of the superhuman, or overhuman. The term-and-concepts 'superman,' 'superhuman' and 'super-humanity' repeatedly appears in the work of the French paleontologist [18, pp. 63, 68, 104, 122, 123, 140]. However, unlike Nietzsche, not surprisingly, Teilhard maintains the existence of a higher reality, of a transcendent dimension, of a God. Therefore, he does not limit himself to dichotomously opposing faith to Heaven and faith to Earth, but hopes for a synthesis between the two forms of faith, of religiosity, of cosmic optimism. The result is a movement that is, together, up and forward: *an ascending spiral* [19].

The Jesuit returns to the topic on March 30th, 1941, in a document written in Beijing and remained unpublished until 1959, when it was included in *The Future of Man*. By annotating some reflections on the relationship between science and religion, the French paleontologist writes: "Throughout human history this conflict between the 'servants of Heaven' and the 'servants of earth' has gone on; but only since the birth of the idea of Evolution (in some sort divinizing the Universe) have the devotees of earth bestirred themselves and made of their worship a true form of religion, charged with limitless hope, striving and renunciation" [17, p. 69].

Once again, Teilhard starts from Nietzsche to go beyond Nietzsche. More precisely, he indicates the need for a synthesis between the two optimistic forces that oppose pessimism and nihilism. These spiritual forces, "provided both are positive, must *a priori* be capable of growth by merging together. Faith in God and faith in the World: these two springs of energy, each the source of a magnificent spiritual impulse, must certainly be capable of effectively uniting in such a way as to produce a resulting upward movement" [17, p. 69].

To conclude, these works by Teilhard illustrate quite well a way of being transhumanist drawing from Nietzsche but in order to go beyond his view.

A similar attitude can be found in the book *Man into Superman* by Robert Ettinger, published in 1972 and reprinted with a new preface in 1989 [20]. Ettinger can be considered the founder of the cryonics movement, having envisioned the possibility of freezing human bodies, relying on future developments of technology that could heal the damages of aging or diseases, as early as in 1962. This possibility is presented in the book *The Prospect of Immortality* [21]. Already that book contains themes that will become pillars of the transhumanist movement, even if the term 'transhumanist' does not appear in it. Nor is there any reference to Nietzsche.

Quite different is the situation of the document *Man into Superman*. To begin with, in the 1989 preface, entitled "The Transhuman Condition," Ettinger explicitly defines himself as immortalist and transhumanist. These are his words: "Some do blame us immortalists, us

transhumanists, and reproach us for hubris, because in earlier times there seemed to be good reasons to accept the status quo – namely, there was little we could do about it, hence mental health and a stable society might require resignation" [20, p. 4].

As for Nietzsche, Ettinger openly distances himself from the uses of his thought made by the Nazis. At the same time, however, he insists that these uses are not a good reason to deny the value of Nietzschean philosophy.

First of all, we must recognize that "Friedrich Nietzsche was the man who popularized the term 'superman' (übermensch) [sic]" [20, p. 24]. It is undeniable that he "became a patron Saint of the Nazis" and that he was a creature of many contradictions in his person and his writing. However, Ettinger points out that "[i]t is as easy to demolish his illogic as to admire his literary bravura, but this is not our primary interest, which rather concerns any new or constructive ideas he may have had concerning the purpose of life and the quality of the superman" [20, p. 25].

Ettinger makes it clear that Nietzschean philosophy is of aristocratic orientation. Nietzsche distinguishes between the 'morality of the master' and the 'morality of the herd,' and concludes that the first type of morality is appropriate to the superman. The distance from Judeo-Christian moral values, the rejection of democratic sentiments, the lack of interest in the condition of the weak, the exaltation of the blonde beast (an expression which, according to Ettinger, refers to the Russians, rather than the Germans), induce the author of *Man into Superman* to elaborate an ambivalent judgment. He writes that "[a]ll this sounds downright un-American, but it contains some nuggets of truth – specifically that the individual must serve himself, the 'Ego whole and holy,' following his own instincts, rather than serve society. So far, so good: Judaeo-Christian morality does indeed have some peculiar inversions of values" [20, p. 25].

In some respects, Ettinger considers the thinking of Nietzsche to be simplistic and contradictory. How can one celebrate the value of selfishness and denounce the danger of extreme altruism, and then conclude that man should sacrifice himself to favor the rise of the superman? Once again, however, the American author insists that the transhumanist perspective cannot do without certain elements of Nietzschean thought, starting from the idea of the will to power as the spring of human transformation.

Overall, according to Ettinger, the first theorist of the superman "saw only a small facet of the truth. Nevertheless, the best of Nietzsche is very good, and he made an important contribution toward exposing the illusions of the altruists" [20, p. 26]. In light of these statements, Ettinger's transhumanism can be qualified as quasi-Nietzschean, on a par with that of Teilhard de Chardin, though for different reasons.

The last examples we propose for this category are three works by Fereidoun M. Esfandiary, also known as FM 2030. Just like Teilhard de Chardin, Esfandiary distinguishes intellectuals into optimists and pessimists and, in turn, distinguishes the optimists into two subcategories. The subcategories are not, however, those already elaborated by the Jesuit paleontologist. According to Esfandiary, the difference between the optimists of the 19th century and those of the 20th century is in the degree of progressive faith they have. The former, however visionary, could not imagine the possibility of obtaining earthly immortality through technology and spreading human life on other planets. Esfandiary does not criticize the philosophers of the past for their lack of imagination. He merely observes that the scientific-technological level of their time did not allow them to transcend their speculative limits. In other words, he acknowledges the importance of their optimism but argues that we can now dare more, pushing ourselves beyond the limits that have held back their imagination.

In the book *Optimism One*, written in 1970, Esfandiary mentions by name three thinkers of the past: "Even recent visionaries like Marx, Nietzsche, Freud, and the evolutionists were necessarily resigned to the inevitability of human mortality and confinement to this planet. Progress was believed possible only up to a limit. Certain barriers of Time and Space were considered impossible to transcend. The human situation was viewed as basically and unalterably tragic" [22, p. 222].

Then, the author tightens the lens on Nietzsche only, citing one of his most significant sentences: "Why has there been no philosophy, no religion that has said yes to life?" The 'yes to life' by Nietzsche is, therefore, seen as the cornerstone of transhumanist philosophy. It is a moment of fundamental rupture from all the philosophies and religions of the past.

Also the reference to the human condition as 'tragic' reveals that Esfandiary's reference to Nietzsche is well pondered. Why did loyalty to Heaven, or pessimistic resignation, triumphed over loyalty to the Earth and every optimistic philosophy of the future? Esfandiary answers this question by distinguishing between past and present: "In view of humankind's tragic plight this age-old pessimistic *no* is understandable" [22, p. 222]. Less understandable is the reason why, even today, we persist in basking in pessimism or hoping to escape from the world. According to Esfandiary, "[t]oday we are still saying *no* to life though for the first time our evolutionary triumphs are loudly saying *yes*. Pessimism remains a fashionable intellectual posture still equated with realism even though *Realism* is being turned upside down" [22, p. 222].

To say 'yes to life,' the individual has, first of all, to understand the value of one's own life. In other words, one has to reassess egoism as a positive force, after we have been taught for millennia that only altruism has a positive value. Just like Ettinger, Esfandiary praises Nietzsche for his braveness and states that the "strengthening of the ego is helping to humanize the individual" [22, p. 140].

Starting from Nietzsche's ideas to go beyond them, by drawing scenarios that the German philosopher had not anticipated or imagined, is a pattern of reasoning that comes back also in the later works of Esfandiary.

In 1973, the Iranian scholar publishes *Up-Wingers: A Futurist Manifesto*, a book in which he affirms the need to take a new political path, alternative to traditional ideologies of the Right and Left, in order "to transcend more rapidly to higher levels of evolution" [23].

Esfandiary is convinced that we are "at all times slowed down by the narrowness of Right-wing and Left-wing alternatives," and this happens because "[t]he premises of the entire Left are indistinguishable from those of the entire Right." In other words, "[i]t is no longer only the Right that is conservative. The entire Left is also suddenly conservative."

That the conservative Right is suspicious of any change is a well-known fact. Even if it has accepted capitalism, which is a disruptive force capable of undermining every traditional way of thinking and acting, the Right remains contradictorily linked to the morals and religious beliefs of the past. What appears to be new, at the beginning of the 1970s, that is immediately after the 1968 uprising and in conjunction with the spread of the hippie counterculture, is that the Left has also become conservative. If the Right is opposed to progress in the name of tradition, the liberal and the radical Left paradoxically resist progress in the name of progress.

Esfandiary reports a list of falsely progressive positions of the so-called progressives: "The Space Program? That is a waste of money they protest. The money ought to be spent on more important things. Genetic Engineering? That is dehumanizing. It will lead to push-button people. New concepts of reproduction such as out-of-the-womb? That is hideously impersonal — mechanical. Modern technology? Dehumanizing. It is robbing us of privacy and individuality — upsetting the balance of nature. Every breakthrough is viewed as a threat. Every new idea viciously attacked as anti-human simplistic utopian."

This is the reason why the futurists must abandon, even nominally, any adherence to the Right and the Left. The choice must no longer be confined between being 'Left-Winger' or 'Right-Winger,' or going to the extremes of these ideological positions, or positioning in between them, at the center of the conventional political spectrum. We need to sweep away the traditional political scheme, embracing the 'Up-Winger' political philosophy, which makes of self-directed evolution its main postulate.

In the context of this discourse, when it comes to indicating the thinker of the past that laid the foundations for this vision, Esfandiary quotes Nietzsche. These are his words: "In this late twentieth century we Up-Wingers are launching an upheaval greater than any movement greater than any revolution in our entire past. This is a Cosmic Upheaval which will not simply catapult us

to a higher history as the visionary Nietzsche had anticipated — but to something far more transcendent — a higher evolution."

Again, there is a recognition of Nietzsche's crucial role in Western philosophy, along with a distinction from his thought. Esfandiary climbs on the shoulders of the giant, to see further. Nietzsche would have taken a step in the right direction, but not long enough, as he only dreamt of a 'higher history' and not of a 'higher evolution.'

In 1988, Esfandiary legally changed his name into FM 2030, to break with the tribal practice of given names. The following year, with the new name, he signs what is perhaps his best-known book inside the transhumanist circles: *Are you a Transhuman? Monitoring and Stimulating Your Personal Rate of Growth at a Rapidly Changing World* [24].

Here too, we find Nietzsche quoted. More precisely, FM 2030 reports fragments of his previous books in which he quoted the German philosopher. This is proof that we are not in the presence of impromptu quotations, but of a pattern of thought which he never abandoned – a transhumanist thought scheme that we think is correct to define 'quasi-Nietzschean.'

5. Nietzschean Transhumanism

A first unambiguous endorsement of some key concepts of Nietzschean philosophy by a leading exponent of the transhumanist movement can be found in the article "Transhumanism: Toward a Futurist Philosophy," written by British philosopher Max More (born Max T. O'Connor). Here, the author contrasts the entropic character of religions with his extropian philosophy. More takes a phenomenal perspective, making it clear that extropianism is only a type of transhumanism. In other words, he recognizes the multiple dimension of transhumanism, by writing that "[t]he alternative to religion is not a despairing nihilism, nor a sterile scientism, but a transhumanism. Humanism, while a step in the right direction, contains too many outdated values and ideas. Extropianism – the form of transhumanism being developed here – moves beyond humanism, focusing on our evolutionary future" [25].

Afterward, the author states that the Nietzschean idea of Übermensch is an extropic idea, that is, an idea characterizing a variety of transhumanism. Precisely, he writes that "Religion justifies complacency and stagnation. The religionist has no answer to the extropian challenge put by Nietzsche's Zarathustra: 'I teach you the overman. Man is something that is to be overcome. What have you done to overcome him?'" [25, p. 6].

As many historians of ideas have noticed, Nietzsche is not to be seen as the philosopher of nihilism, as claimed by some of his critics, but as the philosopher who wants to go beyond nihilism, understood as the absence of values and purposes. Nietzsche is sometimes seen as a nihilist because he preaches the overcoming of Christian values. Those who believe that Christian values are the only authentic values can only see the *pars destruens*, and not the *pars construens* of Nietzschean philosophy. We should never forget, however, that Nietzsche believes Christian values to be negative ones. These values must be overcome because they represent the annihilation of more authentic values. According to the German philosopher, the roots of nihilism are actually traceable back to Christianity, seen as a counter-nature worldview. Christian beliefs have replaced Pagan values, which were closer to human nature. Once the beliefs in God and the afterlife disappear, nothing remains. That is why secular explicit nihilism can be seen as the offspring of Christian implicit nihilism. Only the recovery of natural values can lead beyond nihilism.

More expresses this idea as follows: "I agree with Nietzsche (in *The Will to Power*) that nihilism is only a transitional stage resulting from the break-down of an erroneous interpretation of the world. We now have plenty of resources to leave nihilism behind, affirming a positive (but continually evolving) value-perspective" [25, p. 6].

Being the main promoter of extropianism, the British philosopher does not only emphasize multiplicity and diversity. He also states that "[t]he extropian philosophy being developed and expressed in this journal is the most complete form of transhumanism so far" [25, p. 10].

Taking up the subject in 2010, in the wake of the debate opened by Sorgner, More admits, however, his lack of knowledge about the use of the term 'transhumanism' by Julian Huxley some decades earlier [26, p. 2]. In other words, he affirms the superiority of his form of transhumanism, without however knowing all the forms of transhumanism already existing. This does not detract from More's valuable contribution to transhumanism. It is well known that in philosophy, science, and technology, discoveries and inventions are almost always 'multiples.' They are done independently by different researchers in different regions of the world because they are 'in the air,' they are prepared by the *Zeitgeist*, the overall research front [27, pp. 343-370].

From the perspective of the history of ideas, what is really relevant is the socio-historical impact of an idea. The association between Nietzsche and the transhumanism proposed by More has left its mark. To provide just one example, it is taken up in a classic of transhumanist thought: *The Singularity is Near* by Ray Kurzweil [28, pp. 373-374].

If More was the first to propose a strong association between Nietzschean philosophy and transhumanism, others have followed this path. In the book *Biopolitics: A Transhumanist Paradigm* by Stefano Vaj, published in Italian in 2005 and English in 2014, Nietzsche is cited thirty-one times, mostly in an approbatory way [29].

It should, however, be recalled that the already mentioned 2009 article "Nietzsche, the Overhuman, and Transhumanism" by Sorgner has reportedly been the most impactful contribution to Nietzschean transhumanism. The author states that, when he first became familiar with the transhumanist movement, he immediately thought "that there were many fundamental similarities between transhumanism and Nietzsche's philosophy, especially concerning the concept of the posthuman and that of Nietzsche's overhuman" [6, p. 29]. Sorgner underlines that "Nietzsche upheld that the concept of the overhuman is the meaning of the earth" and adds that "the relevance of the posthuman can only be fully appreciated if one acknowledges that its ultimate foundation is that it gives meaning to scientifically minded people." To those that consider any reference to Nietzsche inconvenient or inadvisable, Sorgner replies as follows: "I do not think there is anything wrong or abominable about that" [6, p. 42].

6. A-Nietzschean Transhumanism

To this category belong all the documents that contain ideas and theories respecting the following two conditions: 1) they are labeled as 'transhumanist' by their authors, or by critics and readers with the agreement of the authors; and 2) do not make any explicit reference to the works of Nietzsche.

On a par with Ettinger and FM 2030, Max More has strongly associated transhumanism with the idea of life extension and immortalism. For instance, he writes that "science, technology and reason must be harnessed to our extropic values to abolish the greatest evil: death. The abolition of aging and, finally, all causes of death, is essential to any philosophy of optimism and transcendence relevant to the individual" [25, p. 10].

Many transhumanist scholars contribute, on the philosophical or scientific level, to the struggle against aging and death, without referring to Nietzsche and his philosophy. An example in this sense is represented by Aubrey de Grey and Michael Rae's book *Ending Aging* [30]. It should be noted that the authors do not use the term 'transhumanism' either. However, De Grey participated in several events organized by the *World Transhumanist Association*. In particular, at the Transvision conference held in Helsinki in 2006, De Gray said that he can accept having his work labeled as transhumanist, or otherwise associated with transhumanism, provided that one refers to the philosophy traced by biologist Julian Huxley. Taking a self-evolutionary perspective, Huxley originally conceived transhumanism as follows: "man remaining man, but transcending himself, by realizing new possibilities of and for his human nature" [2, p. 17]. It is worth noting that, at that time, De Gray was busy writing *Ending Aging*.

His clarification is understandable. De Grey develops his research in the field of biomedicine and gerontology. His explicit goal is to extend life indefinitely and, possibly, to defeat death through interventions on the human body. This approach is quite distant from that of other

transhumanists who intend to achieve immortality, or at least radical life extension, through the development of artificial intelligence, the technology of mind-uploading, and the Singularity. De Grey's approach is 'wet' (organic), rather than 'dry' (inorganic).

Through the pages of *Ending Aging* one can easily see that there is no reference to Nietzsche, nor to concepts elaborated by the German thinker, such as 'will to power,' 'eternal return of the identical,' 'overman,' 'death of God,' etc. There are neither hostile nor approbatory mentions. Therefore, we can conclude that this document, undoubtedly important in the history of anti-aging research, represents a good example of a-Nietzschean transhumanism.

Many other written documents belong to this variety of transhumanism. A further example could be the book *Engineering the Human Germline* by Gregory Stock and John Campbell. The authors examine scientific and ethical aspects related to the genetic planning of future generations. In the field of human enhancement technologies, the modification of the germline to produce 'enhanced' children, both from a physiological and cognitive point of view, is one of the fundamental themes of transhumanism. What differentiates contemporary transhumanism from the eugenics of the past is the insistence on the free choice of individuals (in this case, the parents). The coercive role of the government is, generally, excluded. However, governments can still play a role in the process of empowering future generations, for example by facilitating a generalized access to genetic engineering. This can be done through public facilities, or by financing the access to private clinics with public money.

The authors explicitly refer to this perspective, by reporting the point of view of James Hughes, in a section entitled "Other Voices": "To preserve solidarity, we need a new model of collective identity, of 'transhuman' citizenship. Rights and citizenship must be redefined around the abilities to think and communicate, not around human, version 1.0, DNA. As humanity subspeciates through germline therapy, it will be best if we can remain part of the same polity, a common society of mutual obligation and tolerance, for as long as possible" [31, p. 132].

The 'transhumanist' character of Stock and Campbell's discourse is quite evident. However, they do not refer to Nietzsche, nor do they mention authors who refer to Nietzsche in the section "Other Voices". We can, in this case also, conclude that we are in the presence of a-Nietzschean transhumanism.

7. Anti-Nietzschean Transhumanism

Having to propose an example of anti-Nietzschean transhumanism, the first thought goes to the article "A History of Transhumanist Thought" by Nick Bostrom. Perhaps it is an exaggeration to say that Bostrom takes an anti-Nietzschean position. One cannot find in his article harsh criticism of the German philosopher's ideas. The point he makes is that, contrary to appearances, Nietzsche and transhumanism do not have much in common. His work could have been labeled as a-Nietzschean if it had just ignored the German philosopher.

However, there is a direct reference to Nietzsche and we have to take it into account. With his article, Bostrom was probably responding to Max More, who – as shown above – had instead pointed out the relevance of Nietzsche's work to transhumanist philosophy. It should also be noticed that the *World Transhumanist Association* was founded by Nick Bostrom and David Pearce as an alternative to Max More's *Extropy Institute*, and with the intention of proposing a mainstream version of transhumanism. By considering the context, one can find concrete elements to argue that Bostrom's position is ultimately anti-Nietzschean.

Bostrom writes: "It might be thought that a major inspiration for transhumanism was Friedrich Nietzsche, famous for his doctrine of der Übermensch" [7, p. 4]. With this incipit, he recognizes that the association between Nietzsche and transhumanism is far from being weird. Indeed, it seems rather obvious.

At this point, a question spontaneously arises: what does the word 'Nietzsche' evokes in the author's mind? Indeed, the ideas given us by the German philosopher are many and so are the uses that have been made of them. Bostrom quotes a Nietzsche's sentence that had already been quoted

by More, providing more evidence that he is mainly answering to the extropian philosopher: "I teach you the overman. Man is something that shall be overcome. What have you done to overcome him? All beings so far have created something beyond themselves; and do you want to be the ebb of this great flood and even go back to the beasts rather than overcome man?" [7, p. 4].

Afterward, he offers his interpretation of the quote. According to Bostrom, what Nietzsche had in mind "was not technological transformation but a kind of soaring personal growth and cultural refinement in exceptional individuals (who he thought would have to overcome the life-sapping 'slave-morality' of Christianity)" [7, p. 4].

Even though his research is historical in character, Bostrom's approach is not phenomenal, but rather noumenal. There seem to be two immutable essences, of Nietzsche and transhumanism, which the author compares. The comparison shows that the two essences have little in common, or are even incompatible. These are the conclusions reached by the author: "Despite some surface-level similarities with the Nietzschean vision, transhumanism – with its Enlightenment roots, its emphasis on individual liberties, and its humanistic concern for the welfare of all humans (and other sentient beings) – probably has as much or more in common with Nietzsche's contemporary the English liberal thinker and utilitarian John Stuart Mill" [7, p. 4].

We speak of 'noumenal perspective,' because among the various Nietzsches we have inherited from history there is also an illuminist Nietzsche, who is recognized by many philosophical handbooks and monographs, unlike Bostrom's article. Indeed, historians of ideas speak of an 'Enlightenment period' or 'Enlightenment phase' of Nietzsche's intellectual life which begins with the writing of *Human, all too human*, in 1878, and end with the publication of *The Gay Science*, in 1982 [32], [33], [34], [35, p. 11], [36, pp. 39, 125]. It is a phase in which the German philosopher distances himself from his master Arthur Schopenhauer and his friend Richard Wagner, from the arts and from romanticism, to celebrate the philosopher educated in the sciences. In this period, Nietzsche adopts the genealogical-historical method to explain the evolution of human morality, and defends freedom in its most radical form.

It is clear that, for Bostrom, Nietzsche is rather the romantic philosopher who celebrates the superior man and despises the inferior man, rather than the neo-Enlightenment philosopher who wants to free humanity from superstitions and lies. Nor does Bostrom recognize Nietzsche as the philosopher who indicates in self-directed evolution, through the selection and breeding of the offspring, the road that will lead humanity to evolve into a super-humanity [37]. Also of interest is the fact that, in defining the essence of transhumanism, Bostrom puts the concept of 'overhuman' in a position subordinated to the postulates of Left-wing liberal thought. We specify 'Left-wing,' because Right-wing liberalism, being very close to social Darwinism, has never shown particular compassion or attention to the needs of the masses either. It seems that, according to Bostrom, a 'true transhumanist' has, first of all, to defend individual rights, adopt a utilitarian philosophy, and desire the welfare of all humanity. Only if these conditions are respected, the effort to generate new sentient species is legitimate and fully transhumanist.

Indeed, even accepting for the sake of discussion the conclusion that Nietzsche did not have in mind the evolution of humankind by technological means, it is striking that a major similarity between transhumanism and the liberal thought of John Stuart Mill is affirmed. As far as we know, Mill never said that it is necessary to overcome humanity and create a superhuman species by means of technological tools either. The association between transhumanism and Mill reveals that, in Bostrom's view, transhumanism is an updated form of 19th-century liberalism.

There is little doubt that, in spite of his well-known eclecticism, there is no way to find a liberal-democratic Nietzsche in the folds of his writings. Nietzsche is, indeed, an enemy of democracy, which he sees as a sublimation of Christianity, as the new weapon that the weak may use to curb the strong. Nor Nietzsche is particularly sympathetic with utilitarianism. In light of these considerations, it does not seem risky to conclude that the position expressed by Bostrom in his article is not merely a-Nietzschean, but anti-Nietzschean.

8. A Conclusive Note

In the limited space of an article, it is impossible to carry out an exhaustive research on the reception and diffusion of Nietzsche's ideas in the transhumanist movement. We did, however, provide a meta-analytical frame that could be used to produce further and more detailed research on this topic.

It must also be noticed that, here, we scanned only books and articles in English. During the quantitative phase of our meta-analysis, if we had also searched for documents in German, French, Italian, Spanish, and other languages, the total sum of items detected would have obviously been much higher. And if we had taken into consideration exemplary works in other languages, our typology would have been richer also from a qualitative point of view. A more comprehensive research would actually be fully justified, if we consider that Nietzsche is a German philosopher particularly appreciated by French and Italian postmodernist thinkers, and that the debate on Nietzsche and transhumanism is certainly more relevant to continental philosophy than to analytic one. However, we could not broaden too much the scope of the research, since we wanted to stay within the parameters of an academic article.

Despite the limited number of examples discussed, we still learn something from them. Once the difference between the noumenal and phenomenal perspective is clearly understood, one realizes that, to a large extent, the discussion on Nietzsche and transhumanism is not so much an attempt to understand reality as an attempt to forge it. To 'choose' the roots of transhumanism is a way to give this philosophy a direction in the future.

Thus spoke Nietzsche's Zarathustra:

> I am of today and of the past… but there is something in me that is of tomorrow and the day after tomorrow and of days to come… [38, p. 101].

References

1. Campa, R. *Credere nel futuro. Il lato mistico del transumanesimo,* Krakow: Orbis Idearum Press, 2019.
2. Huxley, J. *New Bottles for New Wine*, London: Chatto & Windus, 1957.
3. Manzocco, R. *Transhumanism. Engineering the Human Condition. History, Philosophy and Current Status,* Cham: Springer, 2019.
4. Mackenzie, I. Life, the universe and everything different, *Radical Philosophy* 92, 1998, pp. 44-45.
5. Ansell-Pearson, K. *Viroid Life. Perspectives on Nietzsche and the Transhuman Condition*, London and New York: Routledge, 1997.
6. Sorgner, S. L. Nietzsche, the Overhuman, and Transhumanism, *Journal of Evolution and Technology* 20 (1), 2009, pp. 29-42.
7. Bostrom, N. A History of Transhumanist Thought, *Journal of Evolution and Technology* 14 (1), 2005.
8. Campa, R. *Etica della scienza pura: Un percorso storico e critic,* Bergamo: Sestante Edizioni, 2007.
9. Campa, R. Scienza e superuomo nel pensiero di Friedrich Nietzsche: per una genealogia del transumanesimo, *Letteratura tradizione* 41, 2007, pp. 30-53.
10. Campa, R. *Mutare o perire: La sfida del transumanesimo*, Bergamo: Sestante Edizioni, 2010.
11. Campa, R. *La specie artificiale: Saggio di bioetica evolutiva*, Monza: Deleyva Editore, 2013.
12. Nietzsche, F. *Writings from the Late Notebooks*, Cambridge University Press, 2003.
13. Mannheim, K. *Ideology and Utopia: An Introduction to the Sociology of Knowledge*, London: Routledge & Kegan Paul, 1979 (1936).
14. Huxley, J. Introduction, In P. Teilhard de Chardin, *The Phenomenon of Man*, New York: Harper, 1959.

15. Carles, J., A. Dupleix. *Teilhard de Chardin: Mistico e scienziato*, Milano: Paoline, 1998.
16. Teilhard de Chardin, P. *The Phenomenon of Man*, New York: Harper, 1959.
17. Teilhard de Chardin, P. *The Future of Man,* New York: Image Books, Doubleday, 1959.
18. Teilhard de Chardin, P. *Human Energy*, New York: A Helen and Kurt Wolff Book Harcourt Brace Jovanovich, 1969.
19. Campa, R. Una spirale ascendente. Origine e sviluppo della visione escatologica transumanista, *Pedagogia e Vita* 75 (2), 2017, pp. 27-40.
20. Ettinger, R. *Man into Superman,* New York: St. Martin Press, 1972; reprint, New York: Avon Books, 1974; Oak Park, Mich: Immortalist Society, 1989.
21. Ettinger, R. *The Prospect of Immortality*, Garden City, N.Y.: Doubleday, 1964.
22. Esfandiary, F. M. *Optimism One: The Emerging Radicalism*, New York: Norton, 1970.
23. Esfandiary, F. M. *Up-Wingers: A Futurist Manifesto,* New York: John Day Company, 1973; republished by E-Reads, 2015: slowlorisblog.files.wordpress.com/2015/05/esfandiary-up-wingers-a-futurist-manifesto.pdf
24. Esfandiary, F. M. (aka FM 2030). *Are You a Transhuman? Monitoring and Stimulating Your Personal Rate of Growth in a Rapidly Changing World*, New York: Warner Books, 1989; republished by Internet Archive WayBackMachine, August 16th, 2011: web.archive.org/web/20110816130326/fm-2030.narod.ru/ARE_YOU_A_TRANSHUMAN.pdf
25. More, M. Transhumanism: Toward a Futurist Philosophy, *Extropy* 6, 1990.
26. More, M. The Overhuman in the Transhuman, *Journal of Evolution and Technology* 21 (1), 2010, pp. 1-4.
27. Merton, R. *The Sociology of Science: Theoretical and Empirical Investigations*, Chicago University Press, 1973.
28. Kurzweil, R. *The Singularity is Near: When Humans Transcend Biology*, London and New York: Penguin Books, 2005.
29. Vaj, S. *Biopolitics: A Transhumanist Paradigm*, Ferrara: La Carmelina Edizioni, 2014.
30. De Grey, A., M. Rae. *Ending Aging: The Rejuvenation Breakthroughs That Could Reverse Human Aging in Our Lifetime*, New York: St. Martin's Griffin, 2008.
31. Stock, G., J. Campbell. *Engineering the Human Germline*: *An Exploration of the Science and Ethics of Altering the Genes We Pass to Our Children*, Cambridge University Press, 2000.
32. Nietzsche, F. *Human, All too Human: A Book for Free Spirits*, Cambridge University Press, 1996 (1878).
33. Nietzsche, F. *The Gay Science: With a Prelude in Rhymes and an Appendix of Songs*, New York: Vintage Books, 1974 (1882).
34. Franco, P. *Nietzsche's Enlightenment: The Free-Spirit Trilogy of the Middle Period*, The University of Chicago Press, 2011.
35. Ansell-Pearson, K. (ed.). *A Companion to Nietzsche*, Malden, MA: Blackwell, 2006.
36. Kauffman, W. *Nietzsche. Philosopher, Psychologist, Antichrist*, Princeton University Press, 1974.
37. Moore, G. *Nietzsche, Biology and Metaphor*, Cambridge University Press, 2002.
38. Nietzsche, F. *Thus Spoke Zarathustra: A Book for All and None*, Cambridge University Press, 2006 (1883-1885).

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The Hard Terminological Problem of Consciousness

Alexander Boldachev

EGAAS S.A.
9, rue du Laboratoire
L 1911 Luxembourg

e-mail: boldachev@gmail.com

Abstract:
This article demonstrates that certain issues of philosophy of mind can only be explained via strict observance of the logical law of identity, that is, use of the term "consciousness" in only one meaning. Based on the understanding of consciousness as space in which objects distinguished by the subject are represented, this article considers problems such as the fixation of the consciousness level, correlation between consciousness and thought, between the internal and the external, and between consciousness and the body. It demonstrates the insufficiency of the reactive conception of action for the resolution of the hard problem of consciousness and the necessity of a transition to an active paradigm in which many issues in philosophy of mind would be formulated differently.
Keywords: consciousness, the hard problem of consciousness, thought, active paradigm.

Discussing the topic of consciousness, we inevitably encounter a difficult terminological problem. Exaggerating somewhat, we can say that there are as many understandings of the term "consciousness" as there are authors. Some scholars of consciousness, such as Chalmers [3], attempt to handle the terminological problem by introducing a number of special terms: consciousness, awareness, qualia, conscious experience. In contrast to this approach, Searle sees no need to multiply the number of understandings and considers that when discussing issues of consciousness, it can be sufficiently defined as what "begins when we wake in the morning from a dreamless sleep and continues until we fall asleep again, die, go into a coma" [5]. However, the largest problem in philosophy of mind texts is not discrepancy in various authors' positions, but rather lax adherence to declared terminology within a single text – the use of the word "consciousness" with various meanings. The following section will attempt to examine some central issues in philosophy of mind with strict adherence to the selected terminology.

1. Consciousness in its Narrow and Broad Meanings

Most frequently, the term "consciousness" is used in one of two meanings – the so-called broad and narrow. In its broad meaning, the word "consciousness" is used to refer to the sphere of reason, thought, reflection – that is, that which has traditionally been considered to relate to higher mental

activity and creative cognitive activity. Such an association of consciousness with comprehension, reason, and reflection was characteristic of the philosophy of Descartes, Locke, and Leibniz, and many contemporary philosophers still adhere to it.

Consciousness in its narrow meaning is associated with the space in which objects are represented; with the "picture" that appears when we wake from sleep, with the "movie" that plays out before us, uninterrupted, in periods of wakefulness, and then disappears when we fall asleep or faint. Such usage of the word corresponds with everyday language and is fixed in expressions like "lose consciousness," "do something unconsciously," "die without regaining consciousness" and others.

Thus, let us take the narrow meaning of consciousness – the space of objects' givenness – from which position Chalmers formulated the hard problem of "why doesn't all this information-processing go on 'in the dark'?" [3], and attempt to provide an answer for this and other questions in philosophy of mind.

2. What is the Ontological Status of Consciousness?

The primary division of the world into the ontological elements "subject" and "object" – into *to whom* the world is given and *what* is given – makes it clear that consciousness is not an object. But it is also not a subject. A correct solution to this problem can be the following claim: consciousness is a totality, an entirety of objects given to the subject. Objects are given to the subject in consciousness. Consciousness can also be represented as a space in which the subject occupies the central place, is the starting point for the reference system, and all objects are given to the subject in that space; they exist in it. Thus, there are only two certitudes with regard to consciousness: (1) it is tied to the subject, it is always the consciousness of some subject, and (2) the existence of consciousness is fixed only by the givenness of objects within it; it is characterized by a multitude of objects that exist within it.

Thus, it can be stated that consciousness holds a particular ontological status, which is secondary relative to the subject and to objects, but inextricably tied to them like a form or means of givenness of objects to the subject. And a rigorous answer to the question of the ontological status of consciousness should be as such: consciousness is a form of the relation between the subject and objects.

Such an understanding of the ontological status of consciousness automatically leads us to the following conclusion: consciousness as a non-object cannot possess properties, attributes, or states; it also cannot be a property or state of any object.

3. The Internal and the External

Developing our understanding of consciousness as a space for the distinction of objects, it is correct – both terminologically and substantively – to say that space (three-dimensional) is a subdomain of our consciousness, in which extended things can be perceived by us. Indeed, the fact of the distinction of any given thing in space brings us to the unambiguous conclusion that that thing has been given to us in consciousness. And, conversely, the claim that any extended object is given to us in consciousness should be understood exclusively and only as an indication of that object's distinction in space. Naturally, to construct a full "picture" of consciousness, besides its spatial subdomain, we should add a temporal one. Essentially, in doing so, we assert that objects that are given to us in consciousness but not revealed in (three-dimensional) space are distinguished by us in time; they are given earlier or later in relation to others. Such objects include feelings, emotions, and thoughts – we perceive them as being extended in time, that is, they are distinguished in consciousness not simultaneously, like spatial things, but purely sequentially.

And, perhaps, only when discussing the indicated difference in the givenness of objects – as being arranged in space or as being distinguished in time – can we speak of the structure of consciousness. This structure amounts to the distinction of the spatial and temporal subdomains of

consciousness. In common parlance, such a division of consciousness is referred to as a division into the "internal" and "external." We call objects revealed in three-dimensional space external, and everything that is distinguished/perceived in time – feelings, emotions, thoughts – we call internal.

4. Consciousness and Thought

It follows from the aforesaid that thoughts and ideas (elements of thought) should be regarded as objects, given in consciousness, to the same extent as other spaceless objects distinguished in time (emotions, feelings). On the most general philosophical level, when we regard consciousness as a form of the givenness of objects, the type of these objects is not important: both rocks and emotions or conceptions should all be interpreted as elements of the "picture" of consciousness. From this standpoint, thought itself should be interpreted as *activity*: the sequencing of operations that use specific elements of consciousness – thoughts and feelings. However, in contrast to actions with things, cognitive activity (thought) organizes and structures its objects in time, rather than in space.

5. "Level" of Consciousness

As we have already noted, consciousness as a space for the givenness of objects does not possess attributes, characteristics, or any other certitudes. The only thing that can somehow characterize consciousness is its "level," which is fixed by the multitude of objects given in consciousness, or, more precisely, by the complexity of these objects. We place the word "level" in quotation marks in order to emphasize that different consciousnesses cannot be compared – the consciousnesses of various subjects do not differ in and of themselves, but only with regard to the level of the objects perceived in them. One person, in his consciousness, uses conceptions from quantum physics, another simply uses conceptions from daily life; one person may distinguish the subtleties of poetry and music while such ideas simply do not enter the consciousness of another. That is, we can reformulate the well-known expression: you are what you distinguish. That is, the objects (things, conceptions, emotions) which you use in your consciousness tell us its level. However, once again, we must note that consciousness itself – understood simply as space and as a form of givenness – has no level; we can only speak of the level of consciousness conditionally, bearing in mind the complexity of objects distinguished in consciousness.

6. The Mind–Body Problem

In order to structure an analysis of the so-called mind–body problem, we will make use of the seven questions formulated by Vadim Vasilyev in his *Consciousness and Things* [8]: "1) Is consciousness physical? 2) Does the brain generate consciousness, and if the brain really generates it, then 3) in what way? 4) Does consciousness supervene the brain? 5) Can consciousness causally affect itself? 6) Does consciousness affect behavior? 7) Why does the functioning of the brain involve consciousness?"

Further, we will provide short and purely formal answers – without detailed explanations – which necessarily come from rigorous adherence to the "narrow" solution to the hard terminological problem of consciousness, that is, from an understanding of consciousness as a space for the givenness of objects.

- *Is consciousness physical?* Consciousness is neither physical, nor chemical, nor physiological, nor psychological, nor cognitive, nor spiritual – we cannot say that it "is" at all. That is, it is not a phenomenon and does not exist at all. Everything that exists, from the physical to the spiritual, exists in consciousness. That means that whatever object we select, whatever property we examine, whatever event we record – it will be neither consciousness itself, nor a property of it. We only run across physical, chemical, physiological, cognitive, and spiritual phenomena, properties, and events. And where is consciousness? Consciousness is where we are given those objects, properties, and

events. Such is the ontological status of consciousness – it is a form of the relation between the subject and objects.

- *Does consciousness affect behavior?* The conception of "influence" implies the presence of two objects and reflects the fact that the state of one object depends on changes in the state of the other. However, insofar as consciousness is not an object, insofar as it has no properties, qualities, structure, or functionality, it is fundamentally unable to exert influence on anything. All influences are fixed by us in consciousness, and a situation where consciousness exerts influence on any object is ontologically impossible. Moreover, it is clear that if we begin to list all possible forms of the influence on a person's behavior – on his physical location in space, on his psychological reactions (emotions and feelings) – we will, in every case, be dealing with the influence of some specific object, which possesses one type of ontological status, from physical to spiritual. And consciousness cannot exist among these influence-bearing objects. So we can simply imagine: we are looking right now at a certain multitude of objects, given to us in consciousness, including emotions, feelings, and thoughts. In what way can the "space" in which we are given these objects – that is, the form or means of their givenness – exert influence on anything?

Here, we are essentially dealing with an incorrectly formulated question. Most likely, the problem of the influence of objects of different ontological statuses/levels has been raised. Can the psyche influence physiological processes? Does thought influence psychological behavior or, as mentioned above, physiology? Does will possess causal activity? It is clear, after all, that everything listed above – physiology, the psyche, the cognitive system, will – do not relate to consciousness itself; all of these systems are given in consciousness and, undoubtedly, exert influence on each other and have a causal relationship. But that is a separate problem.

The answer to the last question automatically clarifies the next one as well: "Can consciousness casually affect itself?" Of course not. All causal connections are realized only and exclusively between objects that are given in consciousness. Consciousness, in its ontological status as a non-object, cannot exert influence on anything.

- *Does the brain generate consciousness?* Once again, based on the accepted definition of consciousness, the answer is obvious: an object can generate only another object; conversely, consciousness, as a non-object, cannot be the product of an object. That is, consciousness, like subject and object, is something ontologically fundamental. As a form of the basic relation between subject and object, it cannot be generated by a system of objects, which is what the brain is. Yes, the brain can generate objects in consciousness – which is, essentially, what it does – but not consciousness itself. And here, again, we automatically receive an answer (although a preliminary one) to the next question: "does consciousness supervene the brain?". Consciousness as such, of course, does not. Yet, undoubtedly, objects in consciousness correlate with neuronal processes.

- *Why does the functioning of the brain involve consciousness?* It turns out that of all the seven questions, only this one relates directly to the problem of consciousness. Essentially, it expresses the hard problem of consciousness as formulated by Chalmers: why don't we live in the dark? Of course, we can obtain a formal answer to this question as well: simply because the subject is a subject only in its own world of objects, and the givenness of these objects implies the presence of a space/forms/means for their givenness – consciousness. But, while formal answers to the preceding questions simply referred us to other questions and to other problems, like the analysis of causal relationships between objects of different ontological levels, in this case, the formal answer only accentuates the problem, returns us to the foundations of ontology, and forces us to think over the basic nature of the subject-object relationship. But that is a separate problem.

Ultimately, we have found that the mind–body problem, when analyzed from the standpoint of the narrow meaning of the term "consciousness," amounts, only and exclusively, to the hard problem of consciousness as formulated by Chalmers. Vasilyev's remaining questions are either meaningless within the framework of the basic definition of consciousness, or refer us to issues of relationships between objects (systems of objects) of different ontological levels.

7. Conscious and Unconscious Actions

Now we will expand our subject area and examine psychological behavior and human activity from the standpoint of the narrow interpretation.

Some manifestations of the human psyche indicate that it can make appropriate actions in an unconscious state, without their representation in the "picture" of consciousness. Such is the behavior of a sleepwalker or a person severely intoxicated by alcohol, who, come morning, does not remember his actions, although these examples can be seen, of course, as simply an erasure of memory rather than a lack of the "picture" of consciousness in these situations. However, there is also conclusive evidence for behavior that is purposeful, but not reflected in consciousness. We mean the actions of people who have been convinced, under hypnosis, that they should not see – not distinguish – a certain thing. Despite the fact that the "forbidden" thing disappears from the consciousness of the hypnotized person and is not present among the objects surrounding him, he behaves as if it is there – not running into it or trying to walk through it. That is, the person behaves in a fully appropriate way, although the thing which he is reacting to is not at all reflected in his current consciousness or in his memories. We can assume that the sleepwalker and drunk person act the same way in an unconsciousness state. This is also evidenced by the fact that they frequently perform actions which they would be unable to carry out consciously (for example, walking on a narrow ledge).

Analyzing these examples of unconscious behavior, it is possible to conclude that consciousness is needed not so much to carry out specific actions here and now as it is to hold memories that allow the psyche to function successfully in the future. The fact that certain things are not present in the consciousness of a sleepwalker, drunk person or hypnotized person does not make his present behavior incorrect but may exert influence on the future. Most likely, all three will have difficulties building appropriate relationships with surrounding people and physical things the next day.

8. The Role of Consciousness in Activity

The formulation of the hard problem of consciousness proposed by Chalmers, notwithstanding his declared philosophical and ideological foundations (panpsychism, etc.), sounds physicalistic or even epiphenomenalistic. The question "why are informational processes not carried out in the dark?" itself presupposes an *a priori* belief in the fact that they (these processes) can proceed in a way causally independent from consciousness and from the givenness of objects. This question is posed from a standpoint which presupposes that human behavior is predetermined by causal-linear processes for handling external data. In order to avoid such original tendentiousness, we should rephrase the question – perhaps, as such: *what predetermines human behavior – data that comes from outside (light, sound, tactile, and other data), or elements of the "picture" of consciousness*?

On the one hand, we can envisage the work of the psyche (the nervous system) as a direct reaction to the full flow of all external forces, which are fixed objectively by "input sensors." Such a view, which already originated with Descartes, is traditionally termed reactive. And, indeed, in the reactive paradigm, the element of consciousness should be considered an epiphenomenon. The "stimulus-reaction" mechanism does not imply any necessity for its work to be additionally reflected in consciousness. But on the other hand, experience shows that our behavior results from reactions precisely to objects given in consciousness, regardless of whether any signals have been received from outside by our receptors or not. We react in exactly the same way to a rock flying at our head, regardless of whether that rock is tangible or a hallucination. We decide to act in one way or another on the basis of that which we distinguish in our current consciousness – what is drawn on the "picture," rather than on the basis of any kind of analysis of the flow of external signals.

Here we must also keep in mind that not only things distinguished spatially – those which we perceive as "external" objects – are given in consciousness, but also "internal" ones: current thoughts, emotions, memories. And it is clear that the latter affects behavior to a greater extent than

the flow of external stimuli. That is, we can conclude an utterly trivial thing: we exist and act in the field of our consciousness, make behavioral choices on the basis of our current "picture" of consciousness, in which spatially distinguished things, including our body and a multitude of psychological objects (emotions, thoughts, memories), are coherently inscribed. And, most importantly, in consciousness, before any action and outside of it, we have an idea of its assumed result. In consciousness, elements of action combine in a single field, in a current "here and now": they include the object at which action is oriented, our body, and our idea of the result. And it is clear that, in order for the system of actions (functional system) to be formed and realized in the event-result, all of its listed elements should have a single ontological status – that of objects given in consciousness. It is also obvious that our idea of the action's result is impossible to derive from the external flow of data. Such an understanding of the role of consciousness in actions provides the basis for the active paradigm of activity of the higher nervous system [1], [2].

9. The Psychological Underpinning for the Active Paradigm

It is clear that the filling of consciousness with objects undergoes change due to the influence of the flow of external data, but not always and not unequivocally. We simply ignore a large part of the data that is not essential for current activity. This is amply demonstrated in research of the phenomena of inattentional blindness, change blindness, and choice blindness (Daniel Simons, Daniel Levin, Christopher Chabris, and others) [6], [7]. In experiments that study these psychological phenomena, the majority of subjects do not notice, for example, a gorilla passing through a group of people playing with a ball, changes in the details of a room's decor or even the change of actors in a video; they do not react to the substitution of answers they have just given to a sociological poll with opposite answers. These and many other psychological experiments, which demonstrate human ability to perceive something which does not exist, or, conversely, not perceive the obvious, and also the susceptibility to visual and other illusions, confirm the thesis that a large share of data received externally does not participate in the formation of the "picture" of consciousness. To carry out activity, we use the internally coherent "picture" of consciousness built by our psyche. And it is built, even in usual, everyday life, on the basis of some principles which are not very understandable to us ourselves.

As already discussed, we also observe opposite phenomena, when a person whose consciousness is "disconnected" acts only and exclusively on the basis of external data. The phenomena of sleepwalkers and experiments that demonstrate the appropriateness of people's behavior with items which had been excluded from their consciousness under the influence of hypnosis both demonstrate that our psyche can also function "in the dark," without the "picture" of consciousness – in "stimulus-reaction" mode. But what is the level of that functioning? Essentially, a sleepwalker is analogous to the philosophical zombie of thought experiments [4]. Physically, the zombie sometimes acts far more precisely than the person in consciousness. Yet his actions are, on the one hand, primitive, and, on the other hand – and this is what is most important – cannot be used for the execution of the next action: not an individual and certainly not a collective one. The sleepwalker zombie and the person with a disconnected consciousness are biological machines that react appropriately to the current flow of data. For this, consciousness is not required. It is obvious that such a machine is incapable of purposeful, systematic activity over a long period of time. Such activity presupposes the availability of mechanisms of memory and anticipation, as well as the formation in consciousness of an idea of the necessary result. Essentially, the unity of consciousness is the unity, totality and continuity of a self-consistent "picture," which is based on external data and elements of memory and makes purposeful human activity possible. If we take away consciousness, we get a zombie sleepwalker.

10. Consciousness and Collective Action

Critically, the psyche's orientation towards the "picture" constructed in consciousness, rather than towards the flow of external data, is important not only for the individual (to ensure the coherence of one's consciousness in time and space), but also socially. Simply put, individuals without consciousness are sleepwalkers, philosophical zombies, etc. – incapable of collective activity. And the reason for this lies not so much in the obvious problems of communication, but precisely in the incoherence of spaces for carrying out actions. It would seem that it should be the other way around: precisely the uniformity of the flow of external data should ensure unity of perception, and, consequently, the coherence of actions, but the inaccessibility of another's consciousness is an insurmountable obstacle to mutual understanding. But here we must note that what is important for collective activity is not *how* something is perceived by one subject or another, but, rather, *out of what* his "picture" is built – what objects are distinguished in it. What is important for collective activity is not the comprehensiveness of data, but the presence of things related to that activity in consciousness. This uniformity of objects in "pictures" of consciousness is formed in the process of upbringing and education.

The orientation of consciousness towards the provision of social coherence is confirmed by psychological research demonstrating that socially conditioned illusions can drown out "objective" data. Thus, exposure to "social cues" (Kuhn and Land) can force people to see something that does not exist, or, conversely, to form images in consciousness of non-existent things only under the influence of another's gaze. Magicians take advantage of this fact as they follow an imaginary ball with their gaze as it is supposedly thrown up and disappears before hitting the ceiling. The majority of viewers in this situation are sure that they have seen a flying object. Without social illusions, that is, without the uniform structuring of elements of consciousness among a large number of people, social units cannot function.

Thus, we can conclude that consciousness in its narrow meaning, consciousness as a picture of the "here and now" that is displayed before a person, as a space for the givenness of objects, does not itself exist as an object and does not possess attributes or functions, but, at the same time, is a prerequisite for coherent individual and collective activity.

References

1. Alexandrov Yu, I. Zakonomernosti aktualizatsii individualnogo opyita i reorganizatsii ego sistemnoy strukturyi: kompleksnoe issledovanie (in Russian), *Trudyi ISA RAN* 61 (3), 2011, pp. 3-25.
2. Anokhin, P. K. *International Inhibition as a Problem of Physiology* (in Russian), Moscow: Medgiz, 1958
3. Chalmers, D. J. Facing up to the problem of consciousness, *Journal of Consciousness Studies* 2 (3), 1995, pp. 200–219.
4. Chalmers, D. *The Conscious Mind: In Search of a Fundamental Theory*, New York and Oxford: Oxford University Press, 1996
5. Searle, J. R. Consciousness, *Annual Review of Neuroscience* 23 (1), 2000, pp. 557-578.
6. Simons, D. J., D. T. Levin. Failure to detect changes to people during a real-world interaction, *Psychonomic Bulletin and Review* 5 (4), 1998, pp. 644–649.
7. Simons, D., Ch. Chabris. Gorillas in our midst: sustained inattentional blindness for dynamic events, *Perception* 28 (9), 1999, pp. 1059-1074.
8. Vasilyev, V.V. *Consciousness and Things* (in Russian), Moscow: Librokom, 2013.

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Behaviour Modelling and Safety at Work on a Construction Site

Dagmara Samołyk

Lublin University of Technology
Nadbystrzycka 38 Street
20-618 Lublin, Poland

e-mail: dagmara.samolyk@gmail.com

Abstract:
The concept of the method based on the behavioural approach as the method minimizing hazardous behaviours of employees has been discussed in this article. The main focus has been laid upon one of the largest economic sectors, i.e. is the construction industry. Thereby, risks arising from an improper behaviour of construction workers, and also a factor contributing to it, have been described here. The influence of employee's age and day time have been analysed in terms of accident rates. The attention was also paid to alcohol consumed by workers during and after their work and to the influence that it has on dangerous behaviours. Different ways of approaches to the worker to improve safety and hygiene at work, as well as the manner in which the approach to employee should change depending on the situation, have been presented too.
Keywords: behaviour, behavioural, accidents, method.

1. Introduction

The economic sector, of which the construction industry is a part, is the most rapidly developing branch of global economy. It is due to the fact that this sector employs lots of millions of workers. It is estimated that construction workers in industrialised countries account for 5-10% of the workforce [16]. The analysis of data from the construction industry from 2017 shows that this sector took the 8th position in terms of accidents at work across all economic sectors. The frequency of accidents in this sector amounted to 6.2 persons out of 1000 workers [8]. Most accidents are generated by private companies. The fact that private companies often employ fewer people and inexperienced workers can have an impact on such a situation. Private enterprises are often very small companies, sometimes even one-person companies. Therefore, they do not attach any importance to organizing trainings, mainly due to the lack of proper financial resources to provide proper trainings. Employers running small companies are often unaware of the applicable regulations, as well as the obligations they should comply with in relation to employees [17]. Most frequently reported accidents at work are incidents on the incorrectly installed scaffolding, lack of proper trench safeguards, failure to use individual protective measures, including a head helmet and protection against falls from height [5]. In Europe, about 17.5% of accidents are those in the

construction sector compared to other sectors, which brings about one million unfortunate incidents. Construction workers are exposed to various chemical, physical, biological factors or ones related to the site of job performance and the way of its performance [6].

Scaffolding is used to support work on the construction site, it relates to work at a height or in places of hindered access. The occurrence of dangerous situations concerning scaffolding pertains to their broad application or no common sense of using them [2]. Scaffolding is quite fairly treated as an irrelevant element and then they pose threat itself. The majority of accidents relating to work on the scaffolding ends in a fall from height, and in the aftermath it results in serious detriments to health, and also in threat to life. This problem is prevalent all over the world, most often these occurrences are related to construction defects, poor technical conditions, a humane factor, improper setting, construction overload or lack of securities. Employees often do not use individual protection measures for their own comfort, not utterly realizing hazardous situations [3]. Albert Bandura said: "Fortunately, most human behaviour is learned observationally through modelling from others" [18].

The analysis of I parameter, that is the impact of accidents on the aggrieved person's age.

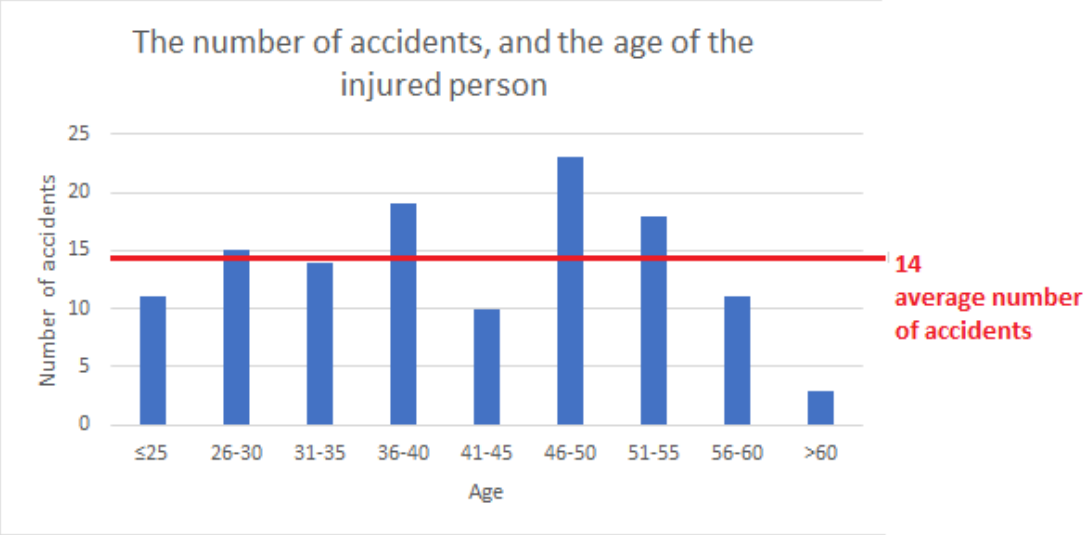

Fig. 1. The number of accidents and the age of the injured person

On the above diagram (Figure 1) it is indicated that most frequent accidents occur in the age bracket of 46-50, 31-35 and 51-55 years old. The average age of the harmed person is 42 years old, whereas average number of victims is 14 people. In the age bracket of 46-50 years old the number of the aggrieved amounted to 23 people, which comprised 18.6% of the overall number of people. Based on the data, a growth in the number of accidents in terms of age cannot be identified.

The analysis of II parameter, that is the impact of the number of accidents on the day time.

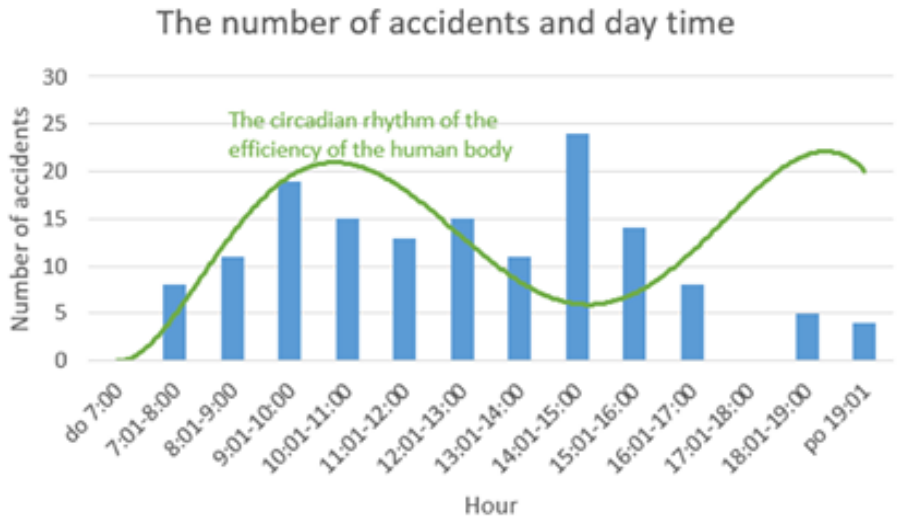

Fig. 2. The number of accidents and day time

By analysing this diagram (Figure 2) it can be noticed that the daily rhythm of the human body is similar to a bar graph. The most frequent accidents occurred between 02:01 p.m. – 03:00 p.m., which is the 7th working hour being repeatedly the last work hour and 09:01 a.m.-10:00 a.m., which is the 3rd working hour before the lunch break.

The analysis of III parameter, that is the impact of the age of the aggrieved person on hour of accident occurrence at work.

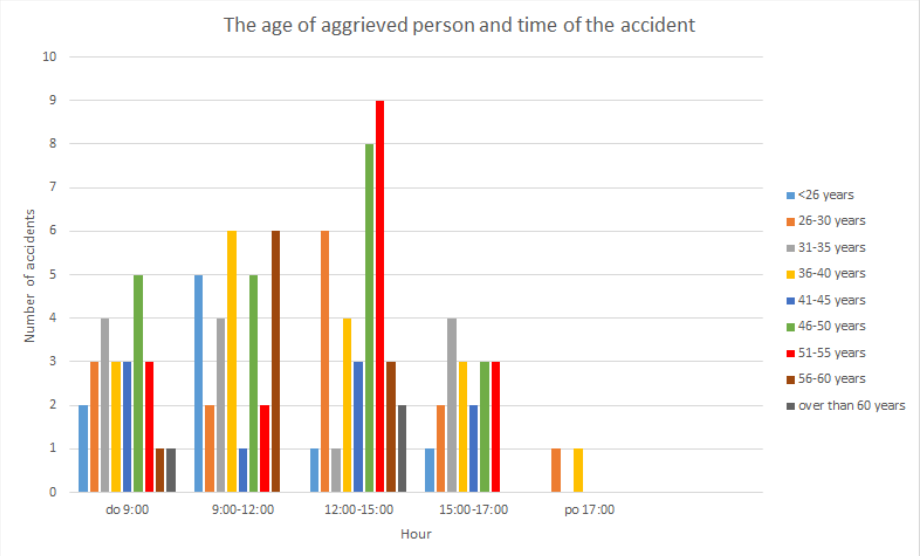

Fig. 3. The age of the aggrieved person and time of the accident

Based on this diagram (Figure 3) it can be observed that accidents occur most often between 09:00 a.m. - 12:00 a.m. and 12:00 a.m.- 03:00 p.m. irrespective of the age bracket. Working hours, where accidents are most frequent, overlap with the data of the previous diagram. Nonetheless, workers in the age bracket of 51 – 55 suffer accidents most often. These workers already have richer experience and greater self-confidence at workplace, and this self-assurance and knowledge of many things can reduce reactions and caution.

The analysis of IV parameter, that is the impact of an annual quarter upon accidents at work.

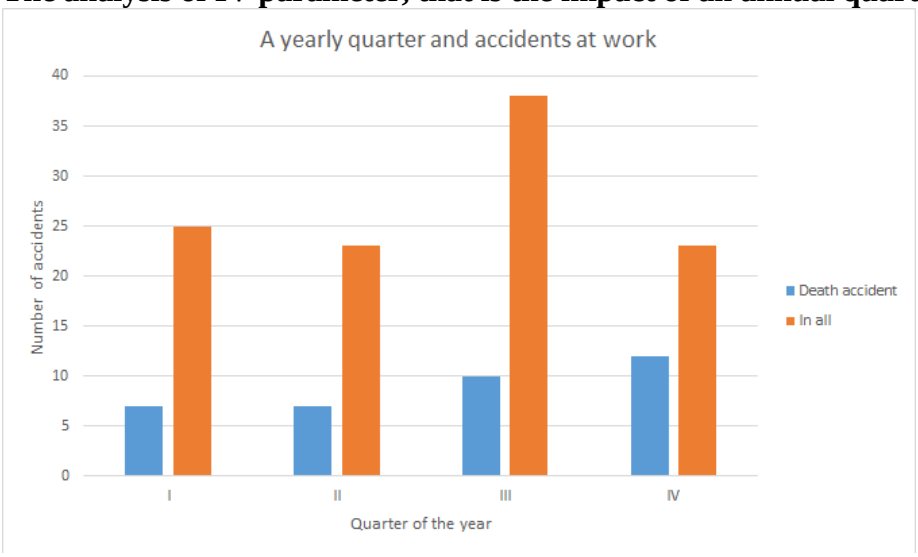

Fig. 4. A yearly quarter and accidents at work

The analysis of this diagram (Figure 4) allows to claim that accidents most often take place in III quarter of the year, which is caused by intensiveness of performed jobs in this quarter and the impact of weather conditions that significantly affect work in the construction industry.
Parameters such as day time, age, season or quarter of the year have a different effect on the number of accidents. A wide variety of factors is heavily correlated with personal predispositions of an employee and working environment, where workstation is situated [11].

2. The influence of Alcohol

Consumed alcohol has an extremely harmful effect on the human body, it takes 3rd place in terms of health risk factors [12]. One of the effects of the consumed alcohol is altered behaviour caused by the interactions of substances with the brain. Alcohol disrupts brain communication, it affects the conduct and the mood. The common alcohol effect is a disturbed speech and problems with coordination [10].

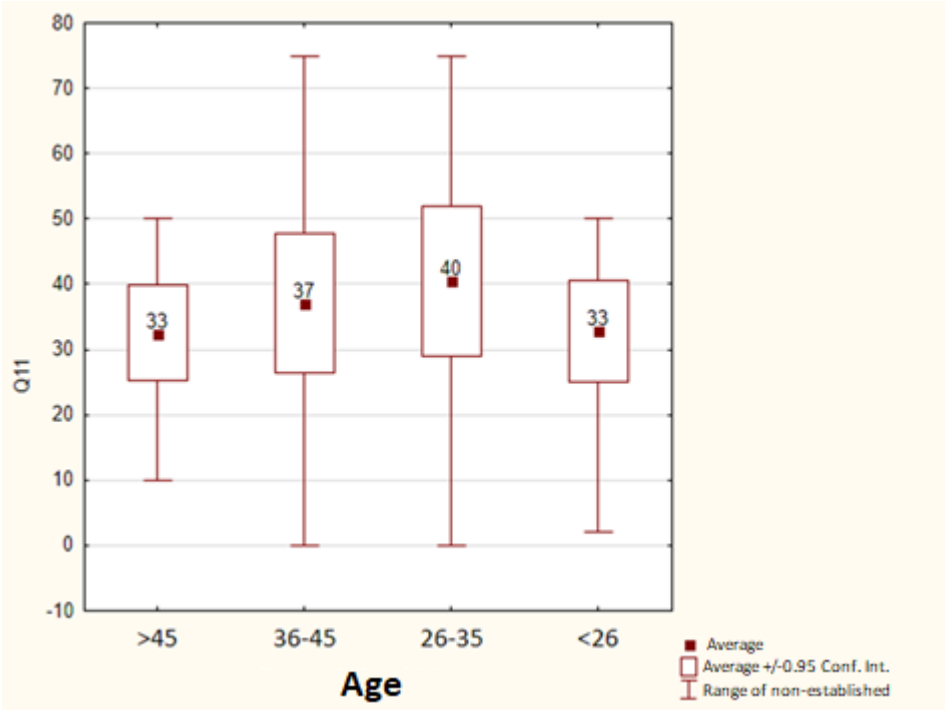

Fig. 5. The amount of consumed alcohol and age [9]

By comparing this diagram (Figure 5) with the previous diagrams of parameters analysis, a certain analogy can be recorded. Most accidents occur within the age bracket of 36-45 years old, for which the average consumption of alcohol amounts to about 37 grams. The smaller consumption of alcohol, the more decreased number of accidents at work can be noted and this analogy can be seen based on the age bracket of 26 years old, where the amount of consumed alcohol and the number of accidents in this bracket are insignificant.

Statistics prove that the issue concerning accidents after alcohol consumption is mainly related to the building industry since about 40% of accident sufferers are representatives of the construction sector. Alcohol translates into the lack of concentration and a failure to abide by basic safety rules at workplace. Employees under the influence of alcohol often show signs of daring and failure to use individual safeguard measures. The acceptance of the building, on the premises of which you could find a bottle of vodka, was a standard, whereas in the contemporary days such situations are rarely observed [7].

3. Why Modification of Conducts is so Important?

According to statistics, accidents at work happen most often as a result of worker's misconduct. For many reasons, these workers act in a way threatening their safety or that of co-employees at work.

The most frequent dangerous behaviours at workplace include:

- Insufficient level of knowledge of safe job performance,
- Inappropriate determination of the occupational risk level,
- Improper work organization,
- Positive effects of dangerous conducts,
- Ignorance of the scope of work safety.

The application of the behavioural approach influences improvement to safety at work, it involves the identification and analysis of dangerous actions of employees and managers. The next step is the recognition of reasons and modification. The modification results from the exclusion of dangerous reasons of behaviours and motivation of workers to maintain safety. Ludwig von Mises in his book writes: "Behaviourism proposes to study human behaviour according to the methods developed by animal and infant psychology. It seeks to investigate reflexes and instincts, automatisms and unconscious reactions. But it has told us nothing about the reflexes that have built cathedrals, railroads, and fortresses, the instincts that have produced philosophies, poems, and legal systems, the automatisms that have resulted in the growth and decline of empires, the unconscious reactions that are splitting atoms." [14].

The most popular method of specification of reasons for misconduct is observation and analysis. In some enterprises safe conducts are also covered by observation.

Employee's behaviour is affected (both positively and negatively) by various factors. Not only the identification and elimination are important in this method but also identification and reinforcement of safe workers' actions.

Exemplary negative behaviours include:

- Time pressure,
- Risky co-workers' conducts,
- Poor organization of workstation,
- Superior's aggressive conduct,
- Home issues,
- Stress on the way to workplace.

Exemplary reasons for positive behaviours include:

- Safety & Hygiene instructions,
- Training courses and meetings,
- Safety & Hygiene posters,
- Warning and alarm systems,

- Safe co-workers' conducts,
- Safety signs and boards.

Factors of behaviours are:

- Persons – an example is a co-worker who establishes individual protective measures when getting down to work,
- Objects – an example is the disorder left by the preceding employee from the previous shift,
- Site – an example is the location of workstation with respect to the safe passage next to the machine,
- Event – an example is a conversation, which can induce safe conducts at the given workstation.

As for the behavioural method, the conduct has a decisive meaning. It is possible to observe it thanks to the fact that it is visible. The observation and analysis of employee's conduct is much easier compared to an attempt of observation of these behaviours or motives. Jacque Fresco once said: "Human behaviour is subject to the same laws as any other natural phenomenon. Our customs, behaviours, and values are byproducts of our culture. No one is born with greed, prejudice, bigotry, patriotism and hatred; these are all learned behaviour patterns. If the environment is unaltered, similar behaviour will reoccur" [4].

Consequences of conducts are important, their positive reception, that is commendations for safe way of action and negative ones, that is bringing attention to the dangerous conduct. A lot of people behave in such way to avoid negative consequences. B.F. Skinner wrote: "A person who has been punished is not thereby simply less inclined to behave in a given way; at best, he learns how to avoid punishment. Some ways of doing so are maladaptive or neurotic, as in the so-called 'Freudian dynamisms.' Other ways include avoiding situations in 'which punished behaviour is likely to occur and doing things which are incompatible with punished behaviour. Other people may take similar steps to reduce the likelihood that a person will be punished, but the literatures of freedom and dignity object to this as leading only to automatic goodness. Under punitive contingencies a person appears to be free to behave well and to deserve credit when he does so. Non-punitive contingencies generate the same behaviour, but a person cannot then be said to be free, and the contingencies deserve the credit when he behaves well." [13].

Consequences are also positive, the most effective is application of rewarding for positive conducts in this whole process of change to behaviours.

Based on the research findings of CIOP-PIB, in workplaces where rewards for safe conducts are applied, workers:

- More readily submit own suggestions concerning an improvement to safety at work,
- Pay attention to their co-employees if they perform a job in a dangerous or improper way,
- Report subcontractors' hazardous behaviours to Safety & Hygiene services.

To successfully improve safety at workplace through the change of workers' conducts, sometimes more attention should be dedicated to reasons, not consequences.

More attention ought to be devoted to reasons for conducts when employees:

- Do not know what to do,
- Do not know how to do it,
- Must overcome obstacles to perform a certain job.

More attention should be devoted to consequences of behaviours when employees:

- Know well what to do,
- Choose a dangerous conduct by making selection,
- To perform a job safely they only need a motivating factor.

Before getting down to the modification of behaviours, conduct which is the problem should be defined, and safe conducts, which is expected from the employee. The next step is reflecting what cause has an effect on the fact that the worker behaves in such a way, preparation of the list of consequences of behaviours essential for the employee, including the ones which are:

- positive and negative,
- immediate and delayed,

- direct and indirect,
- certain and uncertain [1].

4. BBS – Behaviour - Based Safety

Method for the behavioural approach has been applied for several decades, however its efficiency in the last years contributed to an increase in its popularity in Polish companies too. Based on the study results, which were conducted in 2001 by an American psychologist, Edward Scott Geller, it can be concluded that exerting impact on workers' behaviour is more effective than changing the attitude towards work safety. The change to behaviour results in a change to thinking and attitude. The behavioural method concerns the way of modification of conducts to ultimately deprive of the humane factor as a reason for accidents at work. If you assume that lack of focus, risky behaviours, carelessness or flaws in thinking are psychological variables, their disposal may follow through application of the method of behavioural approach. In order to achieve it, the behavioural audit, which will be comprised of the following steps, needs to be implemented:

Step 1, that is the phase of design, starts with development of instructions to implementation of this method, its realization and monitoring. A large team, particularly of lower-rank employees is engaged in this phase, where a few people, who will be observing conducts of remaining employees will be chosen. Especially vital is here development of the records of dangerous misconducts, potentially hazardous and accidents.

Step 2, that is the executive phase, allows for such rules as cyclicality of observations, universality of observations, objectivity of evaluation, complexity of observations, compatibility of observations and conveyance of return information to an employee is the most essential rule in the entire process. In this phase, particular guidelines regarding the observation plan are laid down, including training materials for self-education, procedures, instructions, observation cards.

Step 3, that is evaluation and monitoring, the observer should hold a conversation with an employee about the feedback in this phase. The interlocutor informs in this talk of the observed behaviours, which are supposed to identify whether the performed job was carried out safely and whether its difficulties were caused by time pressure, rush, ergonomics at workstation or work pace. The general rules of imparting information is giving it immediately after observation, discussion of improper behaviours consequential to health, evaluation of behaviour and not specific people, application of assertive messages is also important.

Step 4, that is parameterization, in spite of the fact that this method originates from social theories, it should account for criteria of dependability, unreliability of carrying out of observations and relevance. Designation of the coefficient will allow to prevent faults in observations.

To sum up, about 60 % of companies all over the world have successfully implemented the method based on behavioural attitude. In preparation of this method, some special attention should be paid to the fact that the effects of its implementation are visible not earlier than after the elapse of long time. It is to a large extent affected by psychics of adults, at which it is very difficult to influence the stance and way of thinking. The economic profits, which through an implementation of the method based on behavioural attitude are brought to the company, are first and foremost related to the payment of compensation on the grounds of the accident, and also minimization of costs of payments for sick leaves. The overriding advantages of this method include:

- improvement to workers' safety and minimization of the humane factor as the reason for accidents at work,
- improvement to work culture,
- setting new goals of safety improvement,
- employees' self-reflection with regard to dangerous conducts,
- possibility of learning through modelling positive behaviours,
- defining new fields of risk [15].

The behavioural approach is aimed to improve the level of safety in the enterprise. The reasons for employees' behaviours are often strongly complex and difficult to resolve. This method

poses the question why people do it. To ensure that this method works properly it is necessary to check what people do, when, where and in what manner they perform their job.

- Workers should engage voluntarily. It does not mean that from the beginning they need to show a correct posture as it is not quick to change, they must be ready and become engaged in the process of behavioural transformation. Observation of behaviour and information about it are passed on to the worker so that they could obtain a full picture of benefits of participation in the behavioural method,
- Such process takes place in stages. The first phase begins with planning, organizing, consulting and studying,
- Specifying the character of required observations,
- Employees are asked for observing each other and recording particular behaviours to eliminate them.

Very few workers are going to behave in a way that brings a counterproductive effect, which results in a higher likelihood of accident [8].

5. Conclusions

There is an equal correlation between employee's age and the day time or amount of consumed alcohol, and the accident rate. To minimize it, it is necessary to scrutinize hazardous employees' conducts, and also the factors, which lead to it and try to eliminate them. In addition, it can be observed that the average age, at which there comes to the most accidents is about 50 years old. People at this age quite often fall into routine, midlife crisis. It can explain carelessness or indifference to safety and hygiene rules. To reduce the effect of human factors on the accident rate, a behavioural approach largely consisting in observation of conducts and conversation with the worker is perfectly suitable.

References

1. Behawioralne metody poprawy bezpieczeństwa pracy – Wprowadzenie do tematyki, CIO PPIB, Retrieved on June 3rd 2019, https://m.ciop.pl/CIOPPortalWAR/file/79141/ bezpieczenstwo_wprowadzenie.pdf
2. Czarnocki K., Hoła B., Misztela A., Borowa-Błazik E., Dąbrowski A., Obolewicz J., Walusiak-Skorupa J., Smolarz A., Szer J., Szóstak M. *Bezpieczeństwo pracy w budownictwie*, Monografie – Politechnika Lubelska, Lublin, 2015.
3. Dz.U.2003.47.401 poz. 112
4. Fresco, J. Ask Jacque Fresco, Retrieved on Julie 2nd 2019, http://askjacquefresco.com/ en/index.php/component/faqbookpro/item/508-quote-008-human-behavior-is-subject-to-the-same
5. Gabryelewicz, I. *Czynnik ludzki i warunki techniczne w procesie kształtowania bezpieczeństwa pracy – efekt synergii*, Zeszyty Naukowe MWSE w Tarnowie, Tarnów 2016, pp. 83 – 95
6. Główny Urząd Statystyczny. Wypadki przy pracy w 2017 roku – dane wstępne, GUS, Warszawa 2001.
7. Kinasiewicz, A. Alkohol na cenzurowanym, Retrieved on June 3rd 2019, http://gazetapraca.pl/gazetapraca/ 1,90443,17009641,Alkohol_na_ cenzurowanym.htm
8. Murray, P. Behaviour Based Safety – Information Sheet – Part Two of the HSA's Ten Tips series for Psychosocial Risk Assessment and Reduction Health and Safety Authority.
9. Projekt nr 244388 „Model oceny ryzyka wystąpienia katastrof budowlanych, wypadków i zdarzeń niebezpiecznych na stanowiskach pracy z wykorzystaniem rusztowań budowlanych" finansowany przez NCBiR w ramach Programu Badań Stosowanych na podstawie umowy nr PBS3/A2/19/2015
10. Ranosz, A. *Wypadki w budownictwie a alkohol*, Retrieved on June 4th 2019, http://www.nbi.com.pl/assets/tagi/bezpieczna_praca/pdf/6_alkohol.pdf

11. Sawicki, M., Szóstak, M., Wójcicki, Z., Sawicki, W., Grosel, J. *Wypadki na rusztowaniach*, Builder, Warszawa 2018
12. Scot, T. The Effects of Alcohol on the Body, Retrieved on June 4th 2019, https://americanaddictioncenters.org/alcoholism-treatment/body-effects
13. Skinner, B. F. *Beyond Freedom and Dignity*, Penguin Books, Harmondsworth 1971.
14. von Mises L. *Theory and History: An Interpretation of Social and Economic Evolution*, Ludwig von Mises Institute, Auburn 1985.
15. Warchał, M. *BBS – podejście behawioralne w praktyce służby BHP*, Promotor, Katowice, 2017.
16. Weeks, J. L. Health and Safety Hazards in the Construction Industry, Retrieved on June 4th 2019, http://www.iloencyclopaedia.org/component/k2/item/518-health-and-safety-hazards-in-the-construction-industry
17. *Wypadki przy pracy – Statystyki 2005*, Retrieved on June 3rd 2019, http://archiwum.ciop.pl/14541.html
18. Zeeman, A. *Albert Bandura*. Retrieved on Julie 21st, https://www.toolshero.com/toolsheroes/albert-bandura/

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Evaluation of Employment and Labour Market Trends in European Countries in 2007-2016

Adam Chlebisz

Cracow University of Economics
Rakowicka 27 Street
31-510 Cracow, Poland

e-mail: adam.chlebisz@gmail.com

Mateusz Mierzejewski

Cracow University of Economics
Rakowicka 27 Street
31-510 Cracow, Poland

e-mail: mateusz.mierzejewski@uek.krakow.pl

Abstract:
The paper presents a partial evaluation of employment and factors related to the labour markets in European countries in 2007-2016. The interconnectedness of these determinants in the context of GDP dynamics per capita for each country was examined. The quoted partial subject literature and empirical research allowed to formulate the most important conclusions, among others: in the context of GDP dynamics per capita, at least four groups of countries can be distinguished in Europe, each of them has completely different characteristics having an influence (in the Granger causality sense) on change in GDP per capita of these countries for various time steps.
Keywords: employment, labour market, involuntary part-time employment, work in the evenings, work intensity.

1. Introduction

Employment in OECD countries in the 20th century was characterized by relative stability, which was the result of the institutionalization of the concept of "unemployment" or "retirement", which were not seen in earlier times. Then societies combined part-time work with self-employment and therefore "the invention of unemployment and forms of work" was a discovery closer to the present day [19]. The current concept of unemployment comes from the employment relationship characteristic of large production centres, which radically separated professional activity from

family activity [18]. The 21st century begins with the occurrence of the phenomenon of non-standard forms of employment (such as seasonal work, casual work or teleworking), which by regulating the rules for the performance of duties by an employee, differ significantly from fixed-term contracts [3].

In the 1980s, European countries have been showing significant differences in the GDP per capita ratios. The convergence process also stopped during this period. The results of studies carried out by J. Fagerberg, B. Verspagen and M. Caniëls point to persistent differences in unemployment rates, innovations and the spread of technology as the main determinants of the differences between regions. In poorer countries, development constraints being caused by the unfavourable (in this case) predominance of employment in the agricultural sector and the lack of opportunities to use new technologies, lead to that GDP per capita growth did not reach a higher dynamics than in the richer countries. Moreover, despite a faster increase in employment in poor regions, a greater supply of labour is a factor that makes it impossible to reduce the unemployment rate [9].

As depicted by M. Jardin and G. Sephan, unemployment reacts much stronger to production when the economy is in recession than when it is recovering or flourishing. On the other hand, when production strives for a minimum during a given business cycle, its impact on unemployment shows an increasingly weakening trend [13]. A relationship, which is also related to changes in the economic cycle, is the Okun's law (a negative correlation between the unemployment rate and changes in GDP). This phenomenon is confirmed by the work of J. Lee about a sample of 16 OECD countries based on post-war data. The presented conclusions indicate the statistical significance of the estimated parameters and confirm the validity of the law, however, the results do not turn out to be as strong as in the case of the phenomenon initially described by A. M. Okun [15].

2. Purpose and Methodology of Research

The study aimed to indicate causality (in the Granger sense) between the change in GDP per capita and selected parameters related to the labour market in European countries in the years 2006-2017. Cluster analysis was used to classify groups of countries in terms of GDP per capita dynamics in annual terms. Eurostat data from the set of indicators determining the quality of people's life in the context of their professional activity and GDP per capita were used to conduct the research. In the theoretical part, a partial literature search was used, and empirical research used multiple regression with delays to explain changes in factors and tendencies affecting the explained variable. The selection of variables was dictated by the availability of coefficients characterising the European labour market with an annual frequency for the longest possible time series. In the research part, the following symbols are used:

- WE – employed persons working in the evenings as a percentage of the total employment,
- IE – involuntary part-time employment as a percentage of the total part-time employment,
- WII – people living in households with very low work intensity by income quintile and household type (population aged 0 to 59 years),
- WIAS – people living in households with very low work intensity by age and sex (population aged 0 to 59 years),
- WH – the average number of usual weekly hours of work in the main job, full-time/part-time and economic activity.

3. Unconventional Employment Rate and Economic Growth

Traditional ratios related to the labour market, such as the unemployment rate or labour force participation rates, are most frequently used in the literature on the subject in the context of providing information on the macroeconomic performance of economies. Another, less popular one is "employment intensity of growth" (or "employment elasticity") – a measure showing how employment changes in relation to production, i.e. to what extent the increase in employment translates into economic growth of one percentage point [14]. Also, it makes it possible to examine

structural changes in the area of employment. The results of the research carried out by J. Döpke indicate a significant impact of wages and the share of the service sector (which is confirmed by the aforementioned developmental limitation related to the predominance of the agricultural sector) on the development of "employment elasticity" [8].

In turn, S. Kapsos used the indicator to verify general trends in unemployment, productivity growth and structural economic changes. He used data for the period from 1991 to 2003. The results of the research showed that despite an increase in the share of employment in the total increase in production by 1/3 over the last decade (out of the surveyed years), there was a decrease in "the employment intensity of growth." This is probably a consequence of the crisis after 2000. However, empirical studies presented in the paper indicate a positive correlation between labour supply and "the employment intensity of growth," which is also confirmed by earlier considerations in this area – labour supply growth usually leads to low productivity growth. Besides, it has been shown that there is a positive correlation between the state's share in the service sector and "employment elasticity," i.e. an increase in employment in the services sector brings with it economic growth [14].

The intensity of work is one of the key determinants of the following about translating employment into production or economic growth. According to the report of the European Foundation for the Improvement of Living and Working Conditions – "Time and work: work intensity," the main factors determining the intensity of work are two broadly understood limitations: industrial and commercial. The first one is related to industrial companies that adapt production to market fluctuations and often make the pace of labour dependent on external demand. The latter seeks to anticipate production through regulation and standardisation. A component of this determinant is the pace of work, its organisation and production limitations [4].

On the other hand D. Fairris in his work "Towards and theory of work intensity" points to two main economic currents treating the conflict between employers and employees in the context of work intensity effort. In neoclassical theory in accordance with market forces, it is the employee (as a seller) who offers their effort in return for remuneration from the employer (buyer). However, according to Marxists, market forces give way completely to the domination of employers. Nevertheless, none of the intensity theories brings with it a significant advantage in terms of empirical evidence, and the types of solutions allowing to increase work efficiency require further theoretical and empirical research [10].

4. Selected Coefficients Characterising the Labour Market in the Literature on the Subject

Working time and employment itself are perceived differently from culture to culture: some translate hard work and professional success into private life, while others stress the importance of enjoying leisure time and describe work as a needed annoyance. At work, S. Moriconi and G. Peri show that European countries are very different in these respects, and the preferences themselves explain about 24% of the differences in employment rates between these countries [17].

After the financial crisis in 2008, there have been many structural changes in employment in Europe. This was particularly evident in developed countries and in the case of young people, who were forced to work part-time and increasingly on fixed-term contracts. Many of these countries have experienced an increase in job insecurity, with the worst impact on the low-educated people, who often even lost their jobs completely [16]. Research conducted by D. Borowczyk-Martins and E. Lalé points to the cyclicality of involuntary part-time employment. Moreover, they claim that involuntary part-time employment is not higher due to the fact that the unemployed take up this type of work, but as a source of this phenomenon they indicate a temporary change of working time from full-time to part-time for the time of weaker condition of the company or the whole economy [5].

Households, where adults work for less than 20% of their labour potential in the last year, cause high poverty rates and a negative impact on children growing up there in the long term. In a Dublin-based survey in 2016-2017, the main reasons for the inactivity of people living on these farms were: job losses in connection with economic crash, need for childcare, disability or illness of another member of the family [22]. In the paper "Measuring low work intensity – an analysis of the indicator" T. Ward and E. Ozdemir indicate a link between employment and avoiding low incomes. Moreover, they note that the value of the indicator varies considerably across the European Union and that it partly reflects the rate of increase in unemployment during the crisis [21].

Shorter working weeks and higher unemployment rates are noticeable in many European economies. The authors of the paper "Welfare, employment, and hours of work," as the main determinants of this phenomenon, point to the strength of trade unions and lower income inequality (compared to the USA). Higher wages and their low flexibility provide greater opportunities for consumption, which often requires more leisure time, and this, in turn, shows why Americans are increasing their working time while German workers are reducing their working time [11]. Moreover, L. Bell and R. Freeman while determining factors that have an impact on longer working hours in the USA, indicate that residents have the desire for professional advancement and wage increases, in which inequalities are much higher than in the case of rich Western European countries [1].

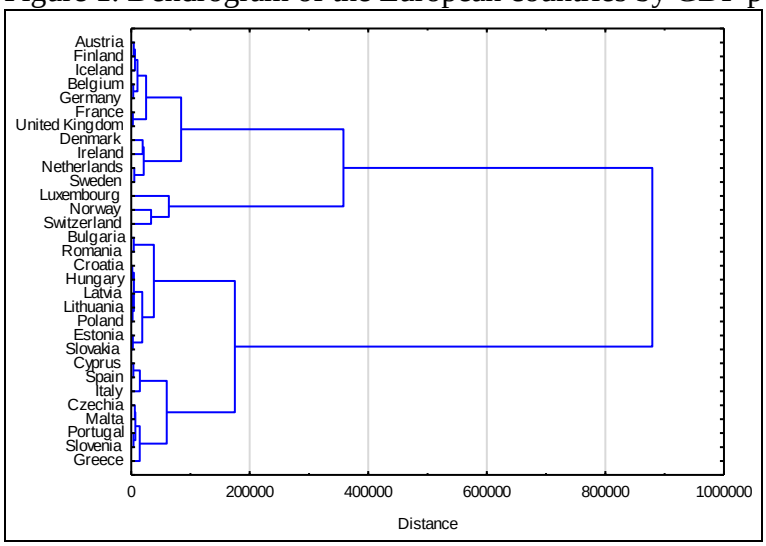
The amount of work per week in the U.S. is also described by D. Hamermesh and E. Stancanelli, claiming that, compared to other rich countries in the US, workers are much more likely to work nights and weekends. Even if overtime is not taken into account, atypical working hours in the US are much more frequent than in European countries [12]. It turns out that people who take up work in the evenings are mainly men aged 18-24 and 35-44, as well as machine operators and drivers, regardless of age [7].

On the other hand, the average number of working hours and the distribution of income in the world were studied by A. Bick, N. Fuchs-Schündeln and D. Lagakos. Their conclusions are as follows: in the countries with low-income, the average number of worked hours is much higher than for high-income countries. Also, they stress that differences in prosperity are much greater than the GDP per capita indicates [2].

5. Impact of Selected Variables Characterising the Labour Market On Changes In GDP Per Capita

During the analysed period, a reshaping of the aforementioned convergence process could be observed in European countries. The cluster analysis made it possible to present the following results.

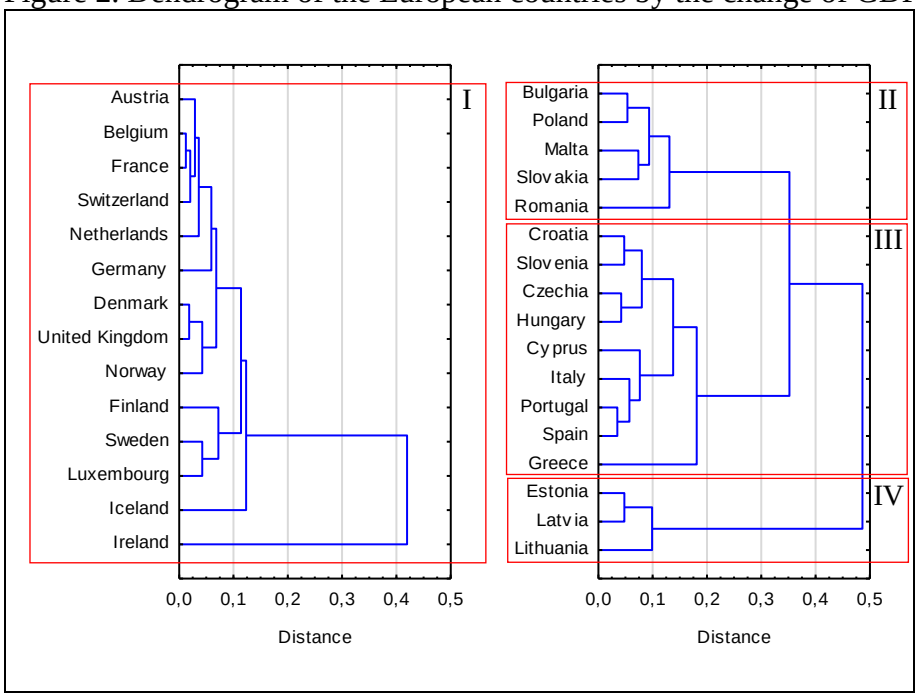
Figure 1. Dendrogram of the European countries by GDP per capita



Source: Own study based on: Eurostat, *Real GDP per capita*, https://ec.europa.eu/ [download date: 10.01.2019].

Figure 1. shows the division of GDP per capita among European countries. Because of the empirical part, it was decided to distinguish four groups in terms of the change of the examined characteristic, to obtain homogeneous of the research subjects.

Figure 2. Dendrogram of the European countries by the change of GDP per capita



Source: Own study based on: Eurostat, *Real GDP per capita*, https://ec.europa.eu/ [download date: 10.01.2019].

The dendrograms in Figure 2 show the breakdown of European countries into groups according to their annual GDP per capita changes. There are 4 groups, the first of which is characterized by a negligible dynamics of the tested variable, whereas in groups II, III and IV there is a highly noticeable division into the next 3 groups with a partially common feature – low, but much higher dynamics than in the case of group I. The segmentation made it possible to determine the sub-sets, which was necessary in order to further outputs. In the following part, interchangeable terms were used: for Group I – richer countries, for others – poorer countries.

The conducted regression analysis of selected parameters related to the labour market and professional activity (dependent variables) together with GDP per capita (independent variable) for European countries in relation to previously defined groups is presented in Tables 1 and 2. The study used the delay of explanatory variables depending on their significance for the adopted p-value<0.01. Determination of the impact of changes in selected indicators on the independent variable was explained by in the context of causality in the sense of Granger. The data were compared on an annual basis. The abbreviations used were developed and explained in the subchapter “purpose and methodology of research” and below, together with a description of the results of the analysis.

Table 1. Values of the multiple regression model parameters

		Group I			Group II		Group III			Group IV		
		constant term	GDP -2	GDP -6	constant term	GDP -4	constant term	GDP 0	GDP -6	constant term	GDP 0	GDP -2
factor	WE				41,793	-0,002	44,450		-0,002			
p-value	WE				0,000	0,000	0,000		0,001			
factor	IE									65,998	-0,007	
p-value	IE									0,000	0,027	
factor	WII	12,379	-0,001	0,001								
p-value	WII	0,000	0,000	0,000								
factor	WIAS	12,323	-0,001	0,001								
p-value	WIAS	0,000	0,000	0,000								
factor	WH						0,000	-0,001		41,716		0,000
p-value	WH						0,000	0,000		0,000		0,045

Source: Own study based on: Eurostat, *Quality of life indicators – productive or main activity, Real GDP per capita,* https://ec.europa.eu/ [download date: 28.12.2018].

Table 2. Values of the multiple regression model parameters

	Group I			Group II			Group III			Group IV		
	R	R^2	R^2adj.	R	R^2	R^2adj.	R	R^2	R^2adj.	R	R^2	R^2adj.
WE				0,788	0,621	0,592	0,708	0,501	0,474			
IE										0,864	0,746	0,733
WII	0,818	0,670	0,650									
WIAS	0,819	0,670	0,651									
WH							0,714	0,509	0,482	0,775	0,601	0,580

Source: Own study based on: Eurostat, *Quality of life indicators – productive or main activity, Real GDP per capita,* https://ec.europa.eu/ [download date: 28.12.2018].

The values contained in Tables 1 and 2 for Group I of European countries show significantly strong dependencies for people living in households with very low labour intensity (persons aged 0-59 living in households where adults work for less than 20% of their labour potential within the last year) by income quintile and household type (WII), as well as by age and gender (WIAS). The dynamics of GDP per capita in rich countries explains (in the Granger sense) both these indicators for both two and six years of delay. For a shorter period, the effect of a change in GDP per capita assumes a negative value for both variables, i.e. with the increase in the indicators of persons living in households with very low work intensity, the explanatory variable decreases. The effect of changes in GDP per capita caused by the increase in the above-described measures is reversed in the event of a six-year delay. For poorer countries, changes in very low labour intensity rates in households did not indicate the possibility of explaining the changes in GDP per capita even with a few years delay, because the adjusted determination factor indicated a slight adjustment of the model.

In groups II and III of European countries, a noticeable factor influencing the changes in GDP per capita turned out to be the ratio of people taking up work in the evenings from time to time to all those employed in many 15-74 years of age (WE). For both groups, the dependent variables take negative values, which indicates a reverse impact of the indicator on the independent variable. With the increase in the ratio of people undertaking evening work, the decrease in GDP per capita is explained (the effect is visible): for group II – with a four-year delay and for group III – with a six-year delay.

Despite exceeding the p-value<0.01, a trend can be observed in group IV in the form of a positive correlation explaining the dynamics of GDP per capita by a variable informing about the average number of hours per week spent at work (WH). The effect of the impact of the indicator in the form of GDP per capita growth is observed with a two-year delay.

Also, further analysis of Group IV points to a trend that GDP per capita growth mirrors the fall in involuntary part-time employment as a percentage of total part-time employment (IE), i.e.

people who work part-time because they are unable to work full-time. A similar relationship between labour market conditions and economic growth and the share of part-time workers is confirmed by research conducted in 2014 by members of the Board of Governors of the Federal Reserve System of the United States [6]. The conclusions point to an increase in involuntary part-time work during the recession and a decline with the improvement in the country's economic situation. Similar observations were made by researchers R. Valletta and C. van der List, who analysed the situation on the labour market between 2000 and 2010, concluding that there is a clear correlation between compulsory part-time work and the business cycle [20].

6. Conclusions

The paper presents a partial evaluation of employment and factors related to the labour market in European countries in 2007-2016. The empirical research and a partial analysis of the literature allowed to formulate the most important conclusions:
1. In terms of GDP per capita dynamics, European countries can be divided into four groups.
2. Each group is characterised by different features that show causality (in the Granger sense) to the change in GDP per capita of these countries for different time steps.
3. A characteristic feature of rich countries that indicates a change in GDP per capita is that people aged 0-59 live in households where adults have been working for less than 20% of their labour potential over the last year. This feature affects the decrease of the explained variable in the short term and the increase in the long term.
4. In poorer countries (groups III and IV) the biggest trend among the surveyed characteristics influencing the change in GDP per capita was: working in the evenings and only for Group III, the average weekly working hours (both explanatory variables with a negative effect on the explained variable).
5. In Estonia, Lithuania and Latvia (group IV) among the studied features can be distinguished: involuntary part-time employees as a percentage of total part-time employment (negative impact on change in GDP per capita) and average weekly working hours (in contrast to Group III - with a positive tendency towards the explained variable).
All the paper has made it possible to identify trends in European labour markets and potential employment determinants that can affect economic development per capita in these countries. In the study, there is no clear causality, but a strong tendency towards the occurrence of the described phenomenon is noticeable. Further attempts to explain causality in the labour markets require additional empirical research.

References

1. Bell, A., Freeman, R. The Incentive for Working Hard: Explaining Hours Worked Differences in the US and Germany, *Labour Economics Special Conference* 8 (2), 2001.
2. Bick, A., Fuchs-Schündeln, N., Lagakos, D. How Do Hours Worked Vary with Income? Cross-Country Evidence and Implications, *American Economic Review* 108, no. 1108 (1), 2018.
3. Blansch, K., Muller, G., Wijntuin, P. et al. *Atypical Work in the EU*, Social Affairs Series, Luxembourg: European Parliament L-2929, 1999.
4. Boisard, P., Cartron, D., Gollac, M., Valeyre, A. *Time and work: work intensity*, Luxembourg: European Foundation for the Improvement of Living and Working Conditions, 2003.
5. Borowczyk-Martins, D., Lalé, E. *The Ins and Outs of Involuntary Part-Time Employment*, Bonn: IZA – Institute of Labor Economics, 2018.
6. Cajner, T., Mawhirter, D., Nekarda, C., Ratner, D. *Why is Involuntary Part-Time Work Elevated?* FEDS Notes 2014-04-14, Board of Governors of the Federal Reserve System (U.S.).
7. Daly, T. *Evenings, nights and weekends: Working unsocial hours and penalty rates*, Centre for Work + Life University of South Australia, Adelaide 2014.

8. Döpke, J. The "Employment Intensity" of Growth in Europe, *Kiel Working Paper*, no. 1021, 2001.
9. Fagerberg, J., Verspagen, B., Caniëls, M. Technology, Growth and Unemployment across European Regions, *Regional Studies* 31 (5), 1997, pp. 457-466.
10. Fairris, D. Towards a Theory of Work Intensity, *Eastern Economic Journal* 30 (4), 2004, pp. 587-599.
11. Hall, A., Zoega, G. Welfare, employment, and hours of work, *Economics Discussion Papers*, no. 2019-1, Kiel Institute for the World Economy.
12. Hamermesh, D., Stancanelli, E. Long Workweeks and Strange Hours, *ILR Review* 68 (5), 2015.
13. Jardin, M., Sephan, G. *How Okun's law is non-Linear in Europe: A Semi-Parametric Approach.*, University of Rennes 1 – Center of Research in Economics and Management, Rennes 2012, pp. 17, 18.
14. Kapsos, S. *The Employment Intensity of Growth: Trends and Macroeconomic Determinants*, in: Felipe, J., Hasan, R., et al. *Labor Markets in Asia*, *Palgrave Macmillan*, London 2006, pp. 143-201.
15. Lee, J. The robustness of Okun's law: Evidence from OECD countries, *Journal of Macroeconomics* 22 (2), 2000, pp. 331-356.
16. Lewis, P., Heyes, J. *The Changing Face of Youth Employment in Europe*. Economic and Industrial Democracy, SAGE Publications, Sheffield 2017.
17. Moriconi, S., Peri, G. Country-specific preferences and employment rates in Europe, *European Economic Review*, vol. 116, 2019, pp. 1-27.
18. Piore, M. J. Historical Perspective and the Interpretation of Unemployment, *Journal of Economic Literature* 25 (4), 1987, pp. 1834-1850.
19. Salais, R., Baverez, N., Reynaud, B. *L'invention du chômage,* Paris: Presses Universitares de France: 1986.
20. Valletta, R., List, C. *Involuntary Part-Time Work: Here to Stay?* FRBSF Economic Letter, Federal Reserve Bank of San Francisco, San Francisco 2015.
21. Ward, T., Ozdemir, E. Measuring low work intensity – an analysis of the indicator, *ImPRovE Discussion Paper* no. 13/09: Antwerp 2013.
22. Watson, D., Maître, B., Russell, H. *Transitions into and out of Household Joblessness, 2004 to 2014: An Analysis of the Central Statistics Office (CSO) Quarterly National Household Survey (QNHS),* Social Inclusion Report, no. 5, Dublin, 2015.