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Futurism in Social Work: Transhumanism, Gamification of Human Life, Homo Roboticus and Care

Sosyal Hizmette Füturizm: Transhümanizm, İnsan Hayatının Oyunlaştırılması, Homo Roboticus ve Bakım

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ÖZET

Bu çalışmada sanatsal bir akım olarak ortaya çıkıp toplumsal ve teknolojik bir boyut kazanan fütürizm hareketinin temelleri üzerinden sosyal çalışma disiplinine ve mesleğine yönelik bir değerlendirme yapılması amaçlanmaktadır. Böylece sosyal çalışma disiplininin ve mesleğinin gelecek yıllardaki olası ajandasına yönelik öngörülerin açıklanması planlanmaktadır. Bu çalışmada fütürizm ile sosyal hizmet arasındaki ilişki insan hakları, sosyal adalet, eşitlik, toplumsal refah, bireyin onuru ve saygınlığı gibi evrensel değerler üzerine kurulmuş olan sosyal hizmet uygulamalarının nasıl bir geleceğe doğru yol aldığını ortaya koyma çabasıyla kurulmaktadır. Bu bağlamda, yeni bir felsefi hareket olarak ortaya çıkan transhümanizm kavramı sosyal hizmetin geleceği ile ilgili olarak ele alınmaktadır. Daha sonra insan hayatının oyunlaştırılması, homo roboticus ve bakım gibi konular tartışılmaktadır. Bu konular son birkaç yıldır sosyal bilimlerin gündemindedir. Bu makalenin sosyal hizmet alanında bu konularla ilgili olarak hazırlanan ilk çalışmalardan biri olması nedeniyle bir başlangıç çalışması olarak kabul edilmesi ve gelecekteki çalışmalarla desteklenmesi beklenmektedir.

Anahtar kelimeler: *Füturizm, sosyal hizmet, transhümanizm, oyunlaştırma, homo roboticus*

ABSTRACT

This study aims at making an assessment of the social work discipline and profession on the basis of the futurism movement, which emerged as an artistic movement and gained social and technological dimensions. Therefore, predictions for a possible agenda of the future social work discipline and profession are discussed. In this study, the relationship between futurism and social work is established in an effort to reveal how social work practices, based on universal values such as human rights, social justice, equality, social prosperity and the dignity of the individual, are moving forward. In this context, the future of social work is discussed under the following three topics: (1) transhumanism, (2) gamification of human life, (3) homo roboticus and care. In fact, all these topics have been on the agenda of social sciences for the last few years. Despite this interest, to the best of the researcher's knowledge, this article is one of the first studies on these issues in the field of social work and has raised many questions in need of further studies.

Keywords: *Futurism, social work, transhumanism, gamification, homo roboticus*

INTRODUCTION

Aldous Huxley starts his book *Brave New World Revisited* (1958) with the following words: *"In 1931, when Brave New World was being written, I was convinced that there was still plenty of time. The completely organized society, the scientific caste system, the abolition of free will by methodical conditioning, the servitude made acceptable by regular doses of chemically induced happiness, the orthodoxies drummed in by nightly courses of sleep-teaching -- these things were coming all right, but not in my time, not even in the time of my grandchildren."* (Huxley, 2004). By all means, in the early years of the 20th century, many things that were foreseen by Huxley were approaching in the world after the World War I and the Great Depression of 1929. However, like many people, Huxley thought that the predicted developments would take place in the distant future; but he was wrong. He admitted this mistake in the same book with the following words: *"The prophecies made in 1931 are coming true much sooner than I thought they would."* (Huxley, 2004).

When we consider the developments in the millennium and beyond, it is seen that a stage or a revolution has passed from one to the other in a very short time. For example, after the first industrial revolution that started in the 1780s and named as Industry 1.0 today (Fisher, 1992); it took nearly a century for the second industrial revolution (Industry 2.0) to start with the discovery of electricity and lead the transition to mass production. It was about a century until the third industrial revolution, (Industry 3.0) started with the development of digitalization, electronic devices and information technologies since the 1980s. However, it was less than half a century between the third industrial revolution and the fourth industrial revolution (Industry 4.0) which was firstly mentioned at the Trade Fair in Hannover, Germany in 2011, and started with the introduction of cyber-physical systems (Caruso, 2018; Tsekeris, 2018). Moreover, the idea of Society 5.0 which was introduced as a smart society by Prime Minister Shinzo Abe in Japan in 2017 led to the idea that the fourth industrial revolution was almost over in the beginning. Thus, all developments from Industry 1.0 based on steam power and machinery production to Industry 2.0 based on electrical power; from Industry 3.0 based on computer technologies to Industry 4.0 based on internet networks are replaced by Industry 5.0 (named Society 5.0) which is equipped with smart intelligence and robots/robotics. From a wider framework, the history of humanity, which started with the hunter society, is on a path that turns into an agricultural society, industrial society, information society and a smart society respectively. Although this development is exciting, the uncertainty about how the smart social structure will be or what it will offer in the future; cause anxiety for many people. At this point, some systematic movements enabling the development and explanation of future predictions, can develop explanatory information and enlighten people. This study adopts futurism movement which emerged as a modern art and literature movement in Italy in the early 20th century and started to be used by many disciplines in order to explain social and technological developments.

Futurism

The “Futurist Manifesto” published by the Italian poet Tomasso Marinetti (1876-1944) in France in 1909 is very important for the futurism as an artistic movement and then has gained a social and technological dimension (Luisetti and Somigli, 2009). The Futurists published more than thirty manifestos; sanctifying speed and evolution, glorifying war and technology and advocating political and artistic revolution between 1909 and 1912. Before the World War I, this avant-garde movement started to be accepted not only in the field of literature, painting and sculpture but also in theatre, photography and politics in many countries such as Italy, France, England, Belgium and Russia (Adamowicz and Storchi, 2013). Today, it is not possible to give an inclusive definition of futurism that is acceptable for all parties or followers since future thoughts, ideas or dreams will differ for everyone. As a matter of fact, it seems that each definition is shaped according to the priorities and ideals of the related discipline or profession. However, a brief definition could be as follows; *“futurism emphasized the dynamism, speed, energy, and power of the machine and the vitality, change, and restlessness of modern life”* (White, 2019). When we examine the emergence of this movement that makes predictions for the future, we can easily observe that *“the future was not simply a domain of time but an ideology. Hence, it was an ‘ism’, like capitalism, socialism, communism, with a specific social and political worldview”* (Sardar, 2010). As an artistic or literary movement, futurism has been used over time to protest the objective removal of philosophers or thinkers from political or social issues. Futurism, which is claimed to have emerged and shaped in the environment of Hegelian idealism and Bergson pragmatism, has started to insist on the importance of participation instead of isolation from political or social issues (Griffiths, 2013).

This connection of the futurism movement with political and social issues enables this study to deal with in relation to social work discipline. In this study, the relationship between futurism and social work is established in an effort to reveal how social work practices, based on universal values such as human rights, social justice, equality, social prosperity and the dignity of the individual, are moving forward. In other words, this study aims to discuss how the future of social work discipline and profession will be shaped, and how developments and changes in other disciplines such as social, science, health sciences and technology will affect social work. In this context, the issue of transhumanism, which emerged as a new philosophical movement, is handled within the framework the future of social work; and then gamification of human life, homo roboticus and care are discussed. All these topics have been on the agenda of social sciences for the last few years. Despite this interest, to the best of the researcher’s knowledge, this article is one of the first studies on these issues in the field of social work and expected to be supported by further studies.

Transhumanism

The rapid and unpredictable progress of technology reveals the need to put forward new definitions for concepts in social sciences. The concept of transhumanism has emerged as a result of

technological developments and has been affecting human life. Transhumanism was first used by Aldous Huxley's brother Julian Huxley in 1957, and now has different meanings (Huxley, 1968). Mainly, it can be defined as an international, intellectual and cultural movement which suggests that technology and science should be utilized in order to improve the physical and cognitive abilities of human beings and to eliminate unwanted negative life events such as aging and illnesses (Pilsch, 2017). For instance, Fukuyama described transhumanism as “a strange liberation movement” whose crusaders aim much higher than civil rights campaigners, feminists, or gay-rights advocates; and according to him, this movement desires “nothing less than to liberate the human race from its biological constraints” (Bostrom, 2004). In addition, Livingstone (2015), who considers transhumanism as a pseudo-scientific movement, stated that “It is the quest to use all the advances of modern science to augment human potential, and ultimately, to achieve immortality.” Briefly, transhumanism can be defined as a philosophical movement which believes that humanity can reach a higher level in terms of physical, mental, social and psychological aspects. *H+* (Humanity+) or *H plus* are used as symbols of the transhumanism movement. This can also be regarded as the name code of the future person in postmodern society in which everything about human beings is transformed into data, numbers or symbols.

Human desire to have superhuman characteristics and the search for immortality are among the issues that have been going on since the existence of mankind and frequently mentioned in mythological stories or legends. Today, the traces of humanity's search for immortality can be found in the myths of Gilgamesh (the great hero of the Sumerians), in the legend of Asclepius (the god of physicians in Ancient Greece), in the journey of Alexander of Macedonia to the land of darkness, or in the learning of the language of plants by Lokman Hekim. Besides, the stories about immortality, heaven and resurrection after death exist in many societies in god myths such as Marduk (Babylon), Osiris (Egypt) and Adonis (Phoenicia) (Kılıç and Eser, 2017). Some of the well-known examples of this search appear in Greek mythology, which is actually the origin of the idea of superhuman (which can also be physically half human) expressed with the concept of transhumanism. The creatures in ancient Greek mythology which are also called as centuar today were symbolised as half human and half horses or goats. Since these creatures have superhuman characteristics and are not as weak as humans in the nature, it can be considered as the prototype idea of the concept of transhumanism. Although the idea of transhumanism at that time did not have the present meaning, according to Livingstone, one has the idea of having abilities like God. Livingstone explains this idea by illustrating gods such as Zeus and Odin. *“One of the underlying principles of transhumanism is that man has the ability to be like God, to create and give life, as Zeus or Odin breathe life into non-living things to make them animated and thus transform them into human-beings. Therefore, from mythical times to now, humanity “is from the essence of God” or gods.”* (Livingstone, 2015; cited by Edman, 2019).

Beyond all these mythological and Olympian debates, today the concept of transhumanism reveals a new and dynamic field of study in terms of social sciences. Scientifically, transhumanism offers

social sciences a post-human idea that is very similar to human but can be considered as an upper version of today's human in terms of physical, cognitive and sensory-motor abilities. In this respect, transhumanism can be regarded as innovative and futuristic within the field of study of social sciences. It should be highlighted that for the realization of the idea of transhumanism, humanity must go through some stages. First of all, the human body and brain should be developed with auxiliary equipment. In fact, when we think of today's wearable technologies or life support devices (such as glasses, hearing aids, cardiac pacemakers, prostheses, implants and artificial organs), it is claimed that we use these equipment and have already experienced this stage. Moreover, some researchers claim that this process will be gradually and change the genetics of human beings. For example, Walters (2013) stated that *"transhumanism refers to the transformation of homo sapiens, step by step, into a species sufficiently different from the genetically defined human that it counts as a new species."* These claims will be shaped based on the scientific, technological, social, political or economic developments in the future. However, studies so far indicated that the nirvana (ultimate goal) of transhumanism is the existence of a human brain shaped by artificial bodies (Walters, 2013). From this point of view, the probability that the artificial bodies, which is defined as post-human, will appear in the social life in the future is increasing. In fact, Boston Dynamics' study on this subject is already known; however, it is stated that the company has carried out these studies only to meet the needs in the field of production and employment (Zabel, 2018). On the other hand, it should not be overlooked that these studies of Boston Dynamics can also be used to create the post-human that the transhumanism movement dreams of over the time. In this process, there will also be individuals who are volunteers to try or use the artificial bodies (semi-artificial or semi-human) that will form the post-human. These individuals are likely to be disabled, elderly, paralyzed or lonely individuals who are defined as disadvantaged groups within the social work discipline today and which disrupt social functionality in some way. At this point, what kind of tasks and duties should be undertaken by social work defending basic human values such as human rights, social justice and dignity of the individual? What kind of tasks and duties will undertake issues such as informing, guiding, defending or protecting of disadvantaged? What will be the position of social work as a discipline and profession? What kind of risk management plan should social work adapt to the changes such interfering with human physical, mental, social, psychological and moral integrity? It is very crucial to bring these issues to the agenda on platforms where the future of social work is discussed.

In addition, after the research on artificial body is tried on disadvantaged individuals, another question will be raised when these artificial bodies are included in social life or society. Who will have these bodies? For example, will people who wish to have these artificial bodies in order to sustain their lives improve their quality of life and social functionality or ensure their personal integrity? Is it possible for anyone to become a post-human if he or she wishes? At this point, will the state or public sphere take responsibility or will these developments be left to the monopoly of a neoliberal or even post-liberal structure? The answers of these questions also raise two important values such as social

justice and equality, which are at the heart of the social work discipline. If so, what kind of path will social work take in this social unjust and unequal structure? What kind of advocacy model or practice will be developed for the protection of human rights or post-human rights? On the other hand, if the use of artificial body become widespread, another issue comes up: old age. As it is known, old age and services for the elderly are important practice areas of social work in the 21st century. However, with the common use of artificial bodies, it will be possible to remove the biological or physical limitations because of old age. In other words, with the idea of transhumanism, the issue of immortality coming from the past will come to the agenda of humanity. If the post-human is immortal by using artificial bodies or, in the best-case scenario, it is possible to survive as long as he or she wishes, what will the practices of social work be related to elderly welfare or how will it evolve?

When the use of artificial bodies becomes widespread and the life span prolongs, will the post-human change his or her body? If this is possible, will post-human pay for it? If so, will the current insurance funds or social protection services be sufficient or valid to cover these expenses? Moreover, will this body change also provide gender change for post-human? If so, can problems of LGBTI people disappear? In the future, when the problems of LGBTI's disappear, what kind of social work will be developed for the sexual identity, preference or desire of the post-human?

The idea of transhumanism ultimately predicts that human beings will become stronger, healthier, productive and perhaps immortal by using their highly developed abilities and will take the name of post-human. What will be the place of social work that aims social welfare by focusing on human and human relations originally? Many questions like these initiate discussions or studies on how to prepare a roadmap for post-human-oriented social work, which is predicted to arise in the future. First of all, it is necessary to be aware of the responsibilities that transhumanism imposes on post-human, which will become a perfect creature. It is important to discuss how this expectation will affect post-human psychology living in the future post or neo modern society. Moreover, the relationship between transhumanism and social work should not be limited to the disadvantaged groups and bio-psycho-social dimensions of the human beings exemplified so far. Because transhumanism does not only target human beings. It is stated that transhumanism aims to change human beings as a whole with the environment (Lee, 2019). The explanations made on the disadvantage groups in this study are based on the possibility of "instrumentalizing" these groups for the *H+* human ideal / model of transhumanism. Otherwise, it would be a reductionist approach to deal with the relationship between transhumanism and social work through disadvantaged groups. This relationship is multidimensional, including primarily the value dimension of social work, as well as the knowledge and skill dimensions.

Finally, the idea of transhumanism, which was defined as a person surpasses himself and discovers the possibilities of human nature (Huxley, 1968), today targets a longer and higher quality life by making use of the developing technology. However; considering the debates regarding recognition of euthanasia as a right today, it is not clear whether the high-level living conditions of the *H+* human

model of transhumanism would prefer a longer life. As a matter of fact, it seems that increasing standards of living and individual welfare alone is not sufficient for people to choose life. Then, it will be very important to develop bio-nano-neuro-info (Dağ, 2018) applications by social work that struggle to meet the basic needs of people, improve their well-being for a healthy, long and quality life. In addition to these practices, social services should take responsibility for the necessary preparations and studies on how the *H+* human model will be included in a macro system, how it will be socially accepted and how it will be placed in the public structure.

Gamification of Human Life

Johan Huizinga, who started his book Homo Ludens as "play is older than culture", claims that man plays games above all (Huizinga, 2018). The play, which started with the existence of human beings, has turned into different shapes and meanings. When we shape human's desire to play that already exists in their nature within the framework of certain rules, a game emerges. Then this game can be used for the intended purpose. The gamification that emerged from this point does not have a very long history. Actually as a popular term today, *"gamification originated in the digital media industry. The first documented use dates back to 2008, but gamification only became widespread in the second half of 2010, when several industry players and conferences popularized it."* (Deterding, Khaled, Nacke and Dixon, 2011). It is possible to come across different definitions of gamification which has become increasingly popular as a research topic in different social sciences, especially education. Deterding et al. (2011) describe gamification briefly as *"the use of game design elements in non-game contexts."* Gamification is also defined as turning a desired behavior or action into a game in real life (Marache-Francisco and Brangier, 2015). For example, when we would like to recycle plastic bottles or batteries, we can promise to give people money when they collect these items and bring them to certain centers, or those who bring the most can be offered different rewards. Or, we can let a child eat chocolate after breakfast, on the condition of making his bed in the morning. In this way, we can shape the behavior or action by triggering the sense of winning inherent in a game. More precisely, one makes life a game; one can even take control of behavior or action.

We witness that the natural course of human life, which has been built on human ideals and values and has been going on for thousands of years, is becoming more and more intensified. Gamification is used frequently in almost every area. In the 21st century, when we are surrounded by a capitalist system, the gamification is used extensively by the companies to motivate their staff for high performance. For example, while the best and the most cheerful or the most stylish employee of the month are chosen in a company, who can resist staying out of the game and only watch what is happening around?

However, it is not these gamification initiatives that bring the problem of gamification into human life to the agenda of this study. On the contrary, there is a macro level of causality that can raise issues such as social transformation, control, oppression and management system. This issue is actually

related to macro social work, which is practiced in the society or communities. Therefore, although this is a new issue, there are studies showing that gamification can be used for different purposes such as transforming the society, conforming and shaping the social structure or adopting ideologies (Fuchs, 2014; Schrape, 2014; AlBalawi, AlSaawi, AlTassan and Fakeerah, 2015; Devisch, Poplin and Sofronie, 2016). In this part of the study, other than these studies, predictions about the future of macro social work will be revealed through a gamification project implemented in China.

In 2004, the communist party launched a project under the name of "Planning Outline for the Construction of a Social Credit System (2014-2020)". This project started to be criticized as an Orwellian way by many people because of its aims and objectives. So, what was the ultimate purpose of this project? The main purpose was to evaluate citizens' characters, thoughts and behaviors by using the big data in the long run. Actually, the history of this project, called shortly as the “Social Credit System (SCS)”, was based on past studies in the financial sector. “The very first step of the aforementioned systems is the financial sector, in which credit scoring systems are used to evaluate the creditworthiness of a prospective debtor, using qualitative and quantitative information, both public and private. From the 19th Century onwards, many companies started to collect, use and sell to other clients, fiscal records of customers in order to evaluate their financial reliability and behavior.” (Grassi, 2018). Most probably, Chinese Communist Party does not want to implement this project for financial reasons. Although the Party defines this project as “SCS is presented as a unique tool to fix all the socio-economic problems in the country, starting from the protection against corruption” (Grassi, 2018); the main purpose is to control and form emotions, thoughts and behaviors of people. Indeed, different versions of such practices are seen in China. For instance, recently, thanks to the improved facial recognition systems, the faces of Chinese citizens passing in the red light are clearly shown on the city's billboards. The purpose here is to display and target people (actually citizens) who do not obey the rules of the system consciously or unconsciously in public places. Thus, people who are psychologically concerned about social desirability are managed by using technology and big data.

The government tries to measure the effectiveness and validity of this system through different experimental studies on SCS. One of these experimental studies was conducted in 2015 by the Alibaba Group, one of the leading online companies in China and the world. This social experiment was carried out at the opening of two unnamed supermarkets, one in Beijing and the other in Hangzhou. In the experiment, the payment was made by Alipay digital wallet and Sesam Credit, a credit scoring platform, and then behaviors of customers after their shopping were analyzed. In reality, all of the behaviors of customers at this time were recorded by “the big brother”. The purpose of this new commercial practice was more than whether such a commercial model was feasible or not. One of the ultimate goals for the government was to gather data on trustworthiness of citizens. Although only 62% of customers paid and it was worrying about social reliability and trustworthiness of citizens; the government believing in the power of social psychology was aware that it was manageable (Schaefer, 2019).

According to the government's plan, the SCS will be put into practice is 2020. Since 2015, many similar social experiments have been carried out. This program is currently voluntary; however, it is claimed that participation will be mandatory for all citizens after 2020 (Grassi, 2018). So, what is the relationship of this project with gamification and macro social work? The aim of the government with this project is to create the “ideal citizen” and “ideal society”. The government requests citizens to install an application which is based on getting scores or credits for positive behaviors and positive thoughts. Hence, the motto of the gamified human life is: "Reaping rewards for good deeds" (Zeng, 2018). Thus, the government wants to create a standardized reward and punishment system for the whole community. For example, a blood donor citizen can earn 30 credit points; a citizen collecting recycling products can earn 20 credit points; another citizen who has no traffic violation points for 5 years can earn 25 credit points. Various rewards are offered to citizens with high credit points, such as priority access to public services, free car parks, free or discounted public transport tickets, or priority tickets for domestic travel. Being a “good citizen” is well rewarded in China (Meissner, 2017; Creemers, 2018; Zeng, 2018; Burnay, 2019; Kostka, 2019).

What if the government starts using this system for its own political interests? For instance, would it be possible to give 30 credit points to citizens paying their taxes early, or 50 credit points to citizens supporting the government’s policies and share it on the social media? On the other hand, if there is reward, there will also be a punishment. What will happen to those who do not show expected behaviors, or do what the government asks for or who are unable to do so? In this case, can citizens with low scores or no points benefit any social services? At this point, issues such as individual freedom, controlling and shaping human behavior, and pressure come to light. With such practices, many values such as human rights, equality, dignity and dignity of the individual, which are in the nature of social work, are ignored. It is believed that social work should conduct up-to-date risk management studies, develop protocols against possible rights violations, develop a new lobbying network by establishing multidisciplinary and sectoral connections, include the political context in social solidarity, and above all develop a stronger advocacy perspective. Otherwise, it will not be possible to protect the basic human and professional values of social work.

Some studies evaluate these operations in China as "neo-socialist approach to social management". In these studies, “SCS is the best example that describes Chinese capacity to innovate and create (depending on its success) a socioeconomic tool that could potentially change the vision according to which government worldwide deal with this contemporary and fast-moving society.” (Grassi, 2018). Accordingly, a modern "Social Engineering Program" may actually be implemented in China.

On the other hand, what happens when other countries start implementing this Chinese program in different ways? What kind of world is waiting for humanity? In such a situation, what kind of path will social work follow as a profession defending basic values such as social justice, equality, freedom, human rights, dignity and dignity of the individual? At this point, the development of new application

models is essential in addition to the models of macro social work such as community organization and social action. Indeed, in order to prevent the gamification of human life by governments, it is very important to prevent or postpone the robotic developments that threaten the existence of human beings. While players of the gamified lives are human today, it is possible that the players will be replaced by the robotics in the future. In the following section, this issue will be discussed.

Homo roboticus and care

Robotics is an area that emerged with the combination of disciplines and developed incredibly especially in the 21st century. It is a multidisciplinary science dealing with the design, production and use of robots. In addition, it is a common field of mathematics, mechanical, computer, electronic, aerospace, aircraft, mechatronics, and control engineering or sensors, actuators and artificial intelligent (Shakhatreh, 2011). Although the history of robotics dates back thousands of years, the development of robots in the modern concept is still considered as new in the history of humanity. In the modern concept, the first robot was developed by American engineer George C. Devol in Louisville (Kentucky) in the 1950s. Devol named this reprogrammable robot "Ultimate", inspired by "Universal Automation" (Niku, 2001; Newton, 2018). In the following years, highly significant and rapid developments were seen in robotics. However, as discussed in this study, combining robotics studies with artificial intelligence studies is very important for social work profession and discipline like many professions and disciplines. Therefore, it is useful to briefly touch on artificial intelligence.

The term artificial intelligence (AI) was first used by John McCarthy in 1955 and then spoken out in a workshop during the summer of 1956 at Dartmouth College in Hanover, New Hampshire (Rajaraman, 2014). In the same year Claude Shannon, Herbert Simon, Allen Newell and Marvin Minsky, who were considered the pioneers of AI, attended the conference organized by IBM. Herbert Simon and Allen Newell developed the Logic Theorist program, which was later considered the first AI program (Russell & Norvig, 1995). Later, AI started to take place in computer-aided robotic studies.

In 1996, almost no one was surprised in the world when Garry Kasparov, the world's best chess player, beat the AI "Deep Blue", developed by IBM. This was actually an expected result. Indeed, no AI would be smarter than human. However, a year later, when "Deeper Blue" beat Kasparov, it was a very important event. Deeper Blue won this historical game consisting of 6 sets with 3.5 points. That day, Deeper Blue was able to calculate 60 billion chess moves in 3 minutes. Moreover, it could reach a processing capacity of 200 million per second. This was not really easy to believe in the late 20th century. This progress was a proof that AI almost approached human intelligence, and the future was uncertain (Newborn, 2000; Hoekenga, 2007, Hsu, 2004; Newborn, 2013). Since then, AI has increased the processing capacity per second to quadrillions. It is almost about to exceed the processing capacity of the human brain. In other words, AI turns into a smarter and superior being

than the person who named himself homo sapiens by saying “cogito ergo sum[1]”. Briefly the future is homo sapiens versus homo roboticus.

Today, robots have gone far beyond their prototypes. Robots can perform machine learning thanks to AI and have many features such as environmental perception, motion planning, dialogue continuity and reflection of feeling (empathy). Because they are no longer robots; they become homo roboticus. One of the most well-known study in this field was by David Hanson in 2010 and the first humanoid[2] named BINA 48 was developed. Then BINA 48 was launched by the company United Therepeutics (Greene, 2016). In the same year, another humanoid named GEMINOID F was developed by Prof. Hiroshi Ishiguro in Japan. By 2011, Prof. Hiroshi Ishiguro developed GEMINOID DK at Osaka University and it was introduced as an "ultra-realistic" humanoid (Vlachos and Schärfe, 2013). In 2014, in the fair named as "Android: What Is Human?" in Japan, two new humanoids named Kodomoroid (Childroid) and Otonaroid (Adultroid) were introduced as news announcers. These two humanoids were defined as "hyper-realistic" by the visitors. Moreover, they started to work in Tokyo's National Museum after that fair (Knox, 2017). Aiko Chihira, developed by Toshiba in the same year, started to work at Nihonbashi Mitsukoski Shopping Center in Tokyo and provided consultancy services to thousands of people every day. Because Aiko Chihira is able to listen to people and reply (Savage, 2017). Next year, Nadine was developed only to chat with people and introduced as a “social robot” at the fair called “Human+: The Future of Our Species” held at the ArtScience Museum in Singapore (Baka, Ramanathan, Mishra and Thalmann, 2017). The most important feature of Nadine is to record all the features of the person that she meets and talks. Then, in the next meeting, she remembers the person's characteristics and the previous conversations (Ramanathan, Mishra and Thalmann, 2019).

Moreover, Aiko Chihira was so liked by homo sapiens that Junko Chihira was developed in 2016 to replace the secretaries. Junko Chihira can not only listen to a person, but also can record his/her behaviors and what he/she likes to do. Also, Junko Chihira can make predictions about his/her needs (Cui, Kim and Park, 2019). Moreover, Junko Chihira speaks three languages: Chinese, English and Japanese[3]. In the same year, the world met with “Sophia” developed by Hanson Robotics[4], which is accepted as the highest point of humanoids supported with AI. Sophia attended the United Nations meeting and gave a speech on October 11, 2017. Then, she gave another speech at Future Investment Summit in Riyadh on October 25, 2017 and she was given Saudi Arabian citizenship (Retto, 2017). Thus, the story of the homo robotic, which started as a mechanical process, continues with a right to citizenship.

[1] It is a philosophical proposition said by René Descartes.
[2] According to Cambridge Advanced Learner's Dictionary, it means *“a machine or creature with the appearance and qualities of a human.”* More information please visit: https://dictionary.cambridge.org/dictionary/english/humanoid [Access Date: 22.03.2020]. This word is used to describe robots supported by AI and in this study it is referred as homo roboticus.
[3] More information please visit: https://www.businessinsider.com/toshibas-humanoid-robot-junko-chihira-speaks-three-languages-2015-11 [Access Date: 22.03.2020]
[4] This company was developed one of the first high-tech modern humanoids, BINA 48 in 2010.

At the end, if we discuss the relationship between robotics and the future of social work, it is useful to consider this issue for social workers first. As we have seen in examples such as Aiko Chihira and Junko Chihira, humanoids which we define as homo roboticus in this study, are now used in jobs and works such as secretariat, consultancy, registration, computing or data processing, etc. When the prices of humanoid, today ranging from $ 40,000 to $ 250,000 and their numbers increase, social workers may lose their jobs. Especially, considering humanoids such as Aiko Chihira, Junko Chihira and Nadine, which have been developed only for chatting and providing information, it is seen that they are able to offer many services expected in social workers today. Certainly, if we look at the other side of the coin, these humanoids can be used as a supporting element for social workers. Humanoids, developed to keep records of a social worker who has to prepare individual agenda for examination and evaluation in each case, can contribute more effectively and efficiently to the intervention processes. In relation to the future of the social work profession, it is very important to discuss from today that on what aspects these developments may pose threats and opportunities and accordingly prepare a risk management plan based on the results.

This issue also has a human care dimension. As it is known, social work is basically a care profession. Historically, the care of children, elderly, disabled, women and homeless individuals have been the primary application areas of social work (Thompson, 2009). For example, in the future agenda of social work, it is very likely that care services for elderly individuals will be given by humanoids (Torta, Werner, Johnson, Juola, Cuijpers, Bazzani, Oberzaucher, Lemberger, Lewy and Bregman, 2014; Beran, Ramirez-Serrano, Vanderkooi, and Kuhn, 2015; Prescott and Caleb-Solly, 2017). Indeed, even today, there are countries where these humanoids are used in the field of elderly welfare. Japan, which has the highest elderly rate and lowest birth rate in the world, is the leading country in this regard. The Japanese government aims to use humanoids for elderly welfare to meet the growing need for nurses in parallel to the growing elderly population. In this context, by the end of 2020, it is planned to send a humanoid to 4 or 5 elderly individuals' homes to provide care services (Whyatt, 2014). Within the scope of the project, it is aimed that humanoids, which will take care of the elderly, will also be friends for the elderly living alone. These humanoids will be sent free of charge and they will chat with the elderly, give them advice and recipes for healthy nutrition. Moreover, they will check blood pressure, sugar and fever; then provide information to the emergency department or call an ambulance when necessary. Upon the request of the elderly, they will also provide up-to-date information about weather, television programs, arts and sports events. Briefly, they will accomplish many things expected from a homo sapien providing care service (Roy, Baltus, Fox, Gemperle, Goetz, Hirsch, Margaritis, Montemerlo, Pineau, Schulte and Thrun, 2000; Tsuno and Homma, 2009). Moreover, Japan is not the only country in the provision of these care services provided by humanoids. Similar studies were carried out in Germany (Klein, 2016). In terms of the future of social work, this functionality of homo roboticus may be effective on provision of service from bio-psycho-social aspects. Who will provide care services for social work in such a

future? What should social workers do to keep this care within their services areas? For the future of social work these questions should be discussed.

On the other hand, as mentioned above, may post-human or homo roboticus need care or support of social work in the future? In such a situation, what kind of intervention plan at micro, mezzo and macro levels could social work offer to these potential clients? For example can social, psychological, cultural or economic support services be provided for these potential clients? What kind of services can be offered? Is it possible to provide the services such as language development, emotional acquisition, energy consumption, learning transfer or body change? It is crucial to address all these questions within the light of the aforementioned issues. Indeed, it should not be forgotten that even if the future is far away, it will definitely come.

CONCLUSION

In this study, the predictions about the future of the social work profession and discipline are discussed within the framework of the futurism movement. In this context, first of all, the idea of transhumanism was reviewed. It is discussed how the post-human, which was put forward with the idea of transhumanism, might have an impact on the future of social work practices. Then, gamification efforts which have been developed due to the technological advancements and spread of computer games in recent years are mentioned. The way that gamification affects human life and what level it may reach in the future are discussed and also examined how social experiments carried out in China may turn into a tool of management, pressure and control in the following years. Finally, it is stated how the existence of homo roboticus, which emerged due to the rapid technological advancements in the field of robotics, can lead to social work profession and discipline. Based on homo roboticus, it is also mentioned how the care services may differ in the future. Thus, in accordance with the purpose stated in the introduction, it has been attempted to show how developments and changes in other disciplines (social, natural, health sciences and technology) will affect and shape the future of social work discipline and profession.

All of these three issues will also raise some ethical debates in the social work agenda. For example, if post-human exists, what will be the identity of human? When it is possible to move from one body to another, what will be personality, psychological identity or individual feelings in today's context? Who will be the true self at a time when people can have the bodies they want? These questions touch upon very important issues that should be answered by social work for the future, which is likely to come one day. Social workers have important responsibilities for this. First of all, social workers need to update themselves, as in all fields and professions in order to adapt to future developments. This update should be in the dimensions of knowledge and skills as well as the value dimension mentioned in the ethical discussions above. In the coming years, social workers are expected to be futurists, autodidact (self-learning and self-taught) foresight, blended and suppliers, unlike today. Therefore, social work training programs should be revised to include technology,

digitalization, artificial intelligence and design. Social policies and social work practices should be updated to include new developments. For example, it is recommended to carry out the necessary infrastructure studies for the active use of artificial intelligence in protective-preventive and risk management studies, which are very important for both social policy and social service practices. Various suggestions can be made on similar issues; even a road map for each area can be created. Since this is an introductory study, it has raised many questions in need of further studies.

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