

INVENTIONS BY ARTIFICIAL INTELLIGENCE, SHOULD THEY BE GRANTED PATENTS

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Abstract

Artificial intelligence is a set of coding that is designed to do productive thinking and work for the better and efficient functioning of human works in order to comfort human lives. Artificial intelligence technology is new to humankind and recent developments in the technology made it a point of attraction for humans when humans knew that something could be made by the way of coding which could learn things on their own like humans. This article will discuss upon whether artificial intelligence can be provided a patent right? Presently we are not at a stage where artificial intelligence got developed enough to a level where it would start making something new of their own, but we cannot deny the possibility of happening same in the future considering the recent developments in the field of artificial intelligence. There is an uncertainty as to whether artificial intelligence will be capable of getting patents if it produces something new and unique on its own. Simultaneously, what would be the grounds on which artificial intelligence can be denied a patent right if it acquires citizenship of a country and stands at equal footing as humans with respect to constitutional rights. Sophia (humanoid) has been given citizenship of Saudi Arabia, which in a way specifies that she has rights which cannot be taken away from her. Now, can she be granted patent if she develops something new because as a citizen of Saudi Arabia she has a freedom to exercise her rights similar to other citizens? Now, present patent laws as well as constitutional laws doesn't discuss about this problem because few years later no one had even a tetchiest of idea as this could also happen and such questions started arising only after Sophia got citizenship. Surely, if artificial intelligence of future would be capable of thinking then would also be capable of breaking laws as a result of same thinking abilities. In the end the article proposes that for solving this problem a new idea or set of laws from scratch has to be brought which could solve all the problems.

Introduction

Artificial intelligence is a system of computer program that is designed to think in a way in which normal person thinks and automatically learn from their previous mistakes. This programming system is a new concept and is in the developmental phases across the world. It is supposed that its continuous development would lead the world towards a better future where such artificial intelligence would help humans in solving their problems¹. Now the question comes is whether artificial intelligence can be provided a patent right. As of now we don't have such artificial intelligence which is involved in finding something new, but if in future artificial intelligence invents something unique then should that artificial intelligence be provided a patent right. On what basis an artificial intelligence can be denied a patent right if it has really invented something unique in the future, as a result of scientist's upcoming developments regarding thinking capacity of a humanoid artificial intelligence. Sophia is a humanoid robot which is designed by a Hong Kong based company and is capable to see, sustain eye contact, speak, think before responding, answer questions, understands others feelings by facial recognition and can also show her own feeling, all by computer algorithms². Also she has been given citizenship of Saudi Arabia, which in a way specifies that she has rights which cannot be taken away from her. Now, can she be granted patent if she develops something new because as a citizen of Saudi Arabia she has a freedom to exercise her rights which in a way is related to the right of having a patent on the basis of quality? Can she be deprived from some of her rights even after getting citizenship and being capable of performing human like functions? Artificial intelligence of future, if would be capable of thinking then would also be capable of breaking laws. Now if they break laws relating to patents or constitution then what could be done, can they be punished for the wrongs done by them? Punishment is a method of deterring others from doing same wrong but such deterrence doesn't seem to work against artificial intelligence because of its robotic and arithmetic software nature and inability to feel pain and suffering like humans.

Unique Relation of Artificial Intelligence and Inventions in Future

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¹ Clocksin & William F, *Artificial Intelligence and the Future* 361 PTMES. 1809, 1721 (2003), www.jstor.org/stable/3559219.

²Michael Greshko, *Meet Sophia, the Robot That Looks Almost Human*, NATIONALGEOGRAPHIC (Oct. 25, 2019), <https://www.nationalgeographic.com/photography/proof/2018/05/sophia-robot-artificial-intelligence-science/>.

According to Oxford dictionaries Artificial Intelligence means “The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.”³ Artificial intelligence in today’s world is seen as an invention which can be patented. In today’s world technological advancements of artificial intelligence is in its early phase of development. Artificial intelligence in modern world is evolving as an alternative to productive thinking and efficient working manner in different kinds of industries, which are in a way helping industries in better and cost effective functioning.⁴ Surely at some time in the future, artificial intelligence doing smart works and also inventing something new from the scratch won’t be a farfetched reality, considering the developments in the particular field in recent years where artificial intelligence incepted learning things on their own and helping humans in solving problems as well as pioneering interactions with humans in a same way as humans do with each other all because of the newly developed humanoid technology. Till now 3,40,000 Artificial intelligence related patent applications have been filed out of which 40% of all artificial intelligence patent mentions machine learning which is incredibly growing at the rate of 28% every year, along with this the mentions of deep learning in the patents is astonishingly increasing at the rate of 175% annually.⁵ Section 2(1) (m) of the Indian Patent Act, 1970 defines patent as “patent means a patent for any invention granted under this Act.”⁶ Concept of giving patent arose from an intention of giving some exclusive rights to the one who has invented something different, new and useful. A patent gives a sense of belongingness and ownership to the inventor with respect to their invention considering arduous efforts involved in the process of invention. Having a sense of ownership, inventor can also earn money by using his invention in a legitimate manner as prescribed by law. The culture of presenting patents appreciates and awards the inventor of a particular invention with an aim to encourage inventions in the society.⁷ Encapsulating the same in a simpler manner, why would anyone invent something without

³ *Artificial intelligence*, OXFORD DICTIONARIES (Oct. 27, 2019), https://en.oxforddictionaries.com/definition/artificial_intelligence.

⁴ Rossi Francesca, *Building Trust in Artificial Intelligence*, 72.1, JOURNAL OF INTERNATIONAL AFFAIRS. 127, 134, (Oct. 27, 2019), www.jstor.org/stable/26588348.

⁵ Francis, *The Story of AI in Patents*, WIPO (Oct. 28, 2019), https://www.wipo.int/tech_trends/en/artificial_intelligence/story.html.

⁶ The Patent Act, 1970, § 2, No.39, Acts of Parliament, 1970 (India).

⁷ Kremer Michael, *Patent Buyouts: A Mechanism for Encouraging Innovation*, 4 THE QUARTERLY JOURNAL OF ECONOMICS 1137,1167, (Oct. 21, 2019) , www.jstor.org/stable/2586977.

getting any benefit out of the same for his hard work? What if in the future artificial intelligence starts thinking more creatively and as a result of it starts inventing something new which could fit into the category of inventive step and fulfills all the criteria that are needed for terming something eligible of patents? Artificial intelligence is built to think and do something innovative or to learn from present things and correct its mistakes in the future; in simple words it could be a copy of human mind and could imitate the things which a human mind is capable of in the coming times⁸. Even though it's not a reality but we cannot deny the fast developmental steps taken by technicians and scientists in recent years to show that developing a robot which can think and behave like humans is not a farfetched reality. When in the future such artificial intelligence technology would develop, one of the problems that ensue will be related to the issue of intellectual property rights. New inventions by artificial intelligence may bring a lot of inventions and discoveries unknown to the humans, which would enable artificial intelligence as a contender for demanding patent(s) of their invention(s). The stumble of artificial intelligence technology seems impossible in the future because of their benefits to the human race rather we need to take measures to face upcoming problems due to rise in artificial intelligence technology and their constantly developing thinking ability.

Right of Artificial Intelligence to Demand Rights

Robots having enough artificial intelligence to behave like humans would automatically develop an instinct to have rights. We can't say whether it would be similar to human rights or not but consciousness of being alive like all other humans would certainly emerge into need of rights for survival, equal and fair treatment. Should artificial intelligence be given rights, is a major issue because providing rights to someone according to the concept of Jural Relations of jurisprudence enlightens us that rights also brings certain kind of duties with it and there must be a person who understands its duties towards other being in order to lead a proper society.⁹ Rights are hard to be given to someone who has not yet proved or can never prove that one is obliged to someone else and would perform its duty towards others in a same way as human do. Sophia is a humanoid and is a part of artificial intelligence system. "Sophia is structured like humans, can make number of facial expressions, can see hear and analyze activities around it and more

⁸ Kurzweil Raymond, *What Is Artificial Intelligence Anyway? As the Techniques of Computing Grow More Sophisticated, Machines Are Beginning to Appear Intelligent—but Can They Actually Think*, 73 (3) AMERICAN SCIENTIST 258, 264 (Oct. 25, 2019), www.jstor.org/stable/27853237.

⁹Corbin Arthur L, *Jural Relations and Their Classification*, 30 (3) THE YALE LAW JOURNAL. 226, 238 (Oct. 19, 2019), www.jstor.org/stable/786527.

importantly it is designed to improve with time and can learn things from the surroundings.”¹⁰ Sophia is a step towards more such humanoids which would be much more capable than Sophia. Sophia recently got citizenship of Saudi Arabia, which means that something new has been done for the first time in the history which could have unascertained consequences in the future if other countries also start giving such citizenships to the humanoids.¹¹ Whether Sophia has rights or not or whether she would be treated as normal citizens of Saudi Arabia, remains an unanswered question till now. In coming times if other countries also start giving citizenship to humanoids then the humanoids like Sophia will demand all the rights that a normal human being has because if a humanoid is given a citizenship then according to the constitutions of most of the countries humanoids must also be given rights guaranteed by the constitution of that country.¹² If we take example of India, then in the preamble of the constitution itself it is written that “We, the people of India, having solemnly resolved to constitute India into a sovereign socialist secular democratic republic and to secure to all its “citizens”- justice, liberty, equality, fraternity.”¹³ Now after getting citizenship it is responsibility of the government to follow what is written in the constitution and it becomes responsibility of the constitution to protect everyone who has citizenship. Now subsequent question comes, Can someone be denied of certain rights or be given some extra privileges after getting citizenship? The answer lies behind the concept of exceptions to certain rights; this can be seen clearly in our constitution too in the form of certain privileges or extended rights like in the cases of parliamentary privileges or special provisions to north east states under Article 371.¹⁴ Also the rights and freedom of people can be restricted to a certain extent by imposing curfew, emergency etc or by having reasonable restriction on using rights to an extent where it infringes someone else rights e.g. Defamation. But for extending or restricting rights, one must necessarily have strong reasoning behind it, as constitutional rights cannot be fully denied and especially when something is clearly mentioned in the preamble itself which is known as heart and soul of any constitution. Artificial intelligence after getting

¹⁰ *About Sophia*, HANSON ROBOTICS (Oct. 19, 2019), <https://www.hansonrobotics.com/sophia/>.

¹¹ Zara Stone, *Everything You Need To Know About Sophia the World's First Robot Citizen*, FORBES (Oct. 24, 2019), <https://www.forbes.com/sites/zarastone/2017/11/07/everything-you-need-to-know-about-sophia-the-worlds-first-robot-citizen/#1ac5137b46fa>.

¹² Cygan Adam, *Citizenship and Fundamental Rights*, 58(4) THE INTERNATIONAL AND COMPARATIVE LAW QUARTERLY 1002, 1012 (Oct. 28, 2019), www.jstor.org/stable/25622254.

¹³ IND. CONST. Preamble.

¹⁴ Nirmalendu Bikash Rakshit, *Parliamentary Privileges and Fundamental Rights*, 39(13) ECONOMIC AND POLITICAL WEEKLY 1379, 1383 (Oct. 26, 2019), www.jstor.org/stable/4414828.

citizenship, according to constitution must have right to equality same as it is applied for normal human beings and must be free from any kind of discrimination. This sense of anti-discriminatory nature will come from the sole nature of human like behavior of humanoid and presenting citizenship to humanoids would automatically enable humanoids from being treated indifferently.¹⁵ Whenever artificial intelligence or humanoids would apply for patents in the future then would they be eligible to get patents? According to law they must be treated equally like any other national of that country without any discrimination and should be given patents, but will it really serve the purpose of getting patents? Patents encourage inventions and gives financial support to that inventor along with a sense of belonging to that invention. Do humanoids really need money and perquisites to encourage research in the same way as humans need? I think they don't need all of these money and perquisites because money is needed to fulfill daily human needs and comfort. Sense of belongingness is a natural instinct of a human that cannot be separated but humanoids don't need all these to work, humanoids are like machines and even if they get human like senses, human like desires and comfort wouldn't be of any use for them because ultimately they are robots with intelligence achieved with the help of coding and not humans who needs money and comfort for survival and use it as a tool of personal encouragement for continue doing the work. Till humanoids don't have human like intelligence, we can restrict humanoids from getting patents but we can't do it when they will start having intelligence to a level where they would know rights and have desire to be treated equally like humans. Even though it seems as a farfetched reality but in science and technology you never know about the pace of future scientific developments which exists only to make impossible tasks possible. Providing patents to humanoids won't do any good as it doesn't fulfill the actual core cause of giving patents which acts as an encouragement for humans to work further with passion. The further question arises as whether present constitution can be applied on the humanoids? The answer is of course not because the intent of the constitutional committee while drafting the constitution was to give equal rights to the citizens which were humans and never thought about giving citizenship to humanoid or anyone other than humans. The application of preamble and constitution on one who was never in the mind of constitutional committee seems a bit unfair. Simultaneously, it was never thought before that humanoids can

¹⁵ Robert, *Democracy and Equality*, 603 THE ANNALS OF THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE 24, 36 (Oct. 23, 2019), www.jstor.org/stable/25097755.

also be given citizenship where the concept of being a citizen only applied to humans and no one else earlier.

Infringement of Patents and Its Consequences

Infringement is a term that explains wrong done or law not followed in a way in which it is meant to be followed and such act of infringement of laws lead to the further consequences in terms of punishment.¹⁶ The concept of punishment existed in the society since humans had consciousness of committing something wrong or analyzing that something wrong needs to be corrected. The concept of punishment in ancient period was seen as a concept of eye for an eye¹⁷ and later in other periods of time it gradually developed into the concept of deterrence used not only to punish the person for its crime but also deter others so that other people won't do such act in the future and the balance between what is wrong and what is right would be maintained in the society.¹⁸ Main essence of the concept of punishment is some kind of suffering and showing others that such thing can happen if you do or abstain from doing the same thing in the future. The core concept of punishment cannot be applied on humanoids as effectively as on humans because human feels pain, suffering and a sense of loosing freedom and that instinct of suffering stops a person to do something against the law which can't be induced in an artificial intelligence. Humanoids cannot have a sense of pain or suffering because their body is robotic, which could surely sense the damage done to the body but cannot feel pain or suffering of any kind even though they can have a sense of confinement in prison but confinement without any suffering or pain won't serve the ultimate purpose of punishment, also in the era of internet it would be difficult to cut humanoids off their internet access which is their actual freedom completely different from human freedom. Along with this the whole artificial intelligence is just a set of codes which cannot in any way be punished till some changes are made in those codes or disabling such codes, which would lead us to another question as whether life of a citizen be taken for serving the purpose of punishment which is considered as hardest form of punishment considering the fact that capital punishment is also banned in a lot of counties.¹⁹ If sometime in future humanoids start breaching the patent laws then there is no effective measure to stop them

¹⁶ Ferguson Pamela R, *In Breach of the Peace*, EDINBURGH UNIVERSITY PRESS 23, 64 (Oct. 20, 2019), www.jstor.org/stable/10.3366/j.ctt1g09xxm.8.

¹⁷ Rowan Brian, *Eye for an Eye*, 8 FORTNIGHT 322 (Oct. 22, 2019), www.jstor.org/stable/25554277.

¹⁸ Viscusi & Kip, *the Risks and Rewards of Criminal Activity: A Comprehensive Test of Criminal Deterrence*, 4(3) JOURNAL OF LABOR ECONOMICS 317, 340 (Oct. 27, 2019), www.jstor.org/stable/2535056.

¹⁹ *Death Penalty*, AMNESTY INTERNATIONAL, (Oct. 26, 2019) <https://www.amnesty.org/en/what-we-do/death-penalty/>.

from doing this because humanoids can't be treated and punished like humans. We have to admit the fact that if patent rights are given to humanoids then they are capable of breaching the existing laws just like humans, without any fear or lesser fear of being punished for the same.²⁰ We can't give patents to humanoids because patent laws are not designed to be given to anyone other than humans according to the core concept of giving intellectual property rights to an individual discussed in Para 6. Also, legislative intent must also be kept in consideration as the patent laws were made by legislature having in mind humans and not humanoids which are completely different from humans. It is also not feasible to have patents in the name of artificial intelligence which would make it difficult for laws to be applied on them and against whom we don't have any method of deterrence.

Is there anything wrong in the Concept of Patents

Whenever the laws are made, they take care of the present situation of the society and gives solution to the problems of that particular time when the laws are enacted. Laws cannot foresee the changes in the society with growing period of time.²¹ For such kind of changes in society laws give an option to amend the present laws according the changing society and its acceptability²² e.g. Acceptability of homosexuals in society.²³ But in the case of giving patents to artificial intelligence the whole concept of patents looks a bit inappropriate because it was designed for humans and not humanoids. Humanoids are capable of inventing something which can be patented but the concept of giving patents to humanoids doesn't fit according to present patent laws. The amendments in the present law doesn't seem to solve the future problems because patent laws were made for humans to support them financially, encourage more inventions and to provide inventor with sense of belongingness to his own invention in its core concept by giving some rights upon that invention. Now after this, another question arises as to whether the person or company who created that humanoid will be able to get patent? Now this is a matter of debate because by this a person or company without doing anything can have

²⁰ Meyer Joel, *Reflections on Some Theories of Punishment*, 59 (4) The Journal of Criminal Law, Criminology, and Police Science 595, 599 (Oct. 24, 2019), www.jstor.org/stable/1141839.

²¹ Horváth Attila, *Tradition and Modernization: Educational Consequences of Changes in Hungarian Society*, 36 (2) INTERNATIONAL REVIEW OF EDUCATION 207, 217 (Oct. 19, 2019), www.jstor.org/stable/3444561.

²² Manfredi Christopher, *Why Do Formal Amendments Fail? An Institutional Design Analysis*, 50 (3), WORLD POLITICS 377, 400 (Oct. 28, 2019), www.jstor.org/stable/25054046.

²³ Misra Geetanjali, *Decriminalizing Homosexuality in India*, 17 (34) REPRODUCTIVE HEALTH MATTERS 20, 28 (Oct. 23, 2019), www.jstor.org/stable/40647442.

number of patents in its name which is in a way against concept of patents because patents gives all rights and privileges to one who have invested its sweat in the particular invention.²⁴

One cannot and should not get any patent without doing anything productive, making humanoid which can invent something new should not make the person or company who made that humanoid capable of getting patents on that invention done by humanoid because if a person build something which can do inventions for them would make people to get endless source of income without making any efforts. Simultaneously, the humanoid which company or a person designed from his efforts can get patent on that particular invention of humanoid only and not on the inventions done by such humanoid. The concept of giving rights to the artificial intelligence comes into picture with the concept of providing citizenship to artificial intelligence. Once citizenship is given, constitution comes to the rescue of that citizen and causes problems as the same concept could not be made applicable on humanoids in the case of patents because it breaches its core concept intellectual property rights. For solving this problem a new idea or law from scratch has to be brought which could solve all the problems, one of which could be a ban on citizenship given to humanoids which seems to cause majority of problems discussed in the article. By banning the process of providing citizenship to humanoids, we can develop an environment for intellectual property laws to go hand in hand with existing constitutional laws and further be able to think on laws fit to deal with the situation in future according to the changing time and technology particularly in the field of artificial intelligence.

Conclusion

Artificial intelligence is growing at a rapid rate in the present society. In recent years we have done a lot of growth in this particular sector and produced humanoids like Sophia, which can walk, talk, show expressions and most importantly learn from past experiences. Sophia in particular got citizenship of Saudi Arabia and got all the rights that a citizen must get. In future if humanoids like Sophia will claim patents on the basis of their right to be treated equally with respect to other citizens of the country, then this situation would cause a lot of problems because of the fact that neither the constitution nor the patent rights were enacted keeping in mind anyone other than humans, application of present laws on humanoids would be like applying laws on one which were not even thought about while enacting the laws and is completely against the concept

²⁴ Hall Bronwyn Hetal, *Recent Research on the Economics of Patents*, 4 ANNUAL REVIEW OF ECONOMICS 541, 565 (Oct. 24, 2019), www.jstor.org/stable/42949948.

of legislative intent. Even if humanoids invent something, they won't become eligible to get patents because the core purpose of providing patent to inventions gets defeated as the law of patents is made for humans and not humanoids. Another thing is that the humanoids can't be punished after any kind of patent laws infringement because the concept of suffering and pain can't be applied on humanoids, simultaneously the deterrence techniques might not work as effectively as it works on humans. Therefore, there would be a need in future to frame new set of laws from scratch regarding patent rights, constitution and all other related laws which could apply on both humans and humanoids because the present laws are not capable enough to deal with problems which would arise after the further advancements in artificial intelligence. It is necessary to change the policy of giving citizenships to humanoids or restrict other countries from doing as what Saudi Arabia did because citizenship automatically brings a lot of rights with it and the concept of citizenship is solely for humans because when concept of citizenship was formed humans were the only species for whom it was made and who understands one's rights and duties towards each other according to the constitution and follow the same with a fear of being punished on the failure of the same. Present set of laws are not capable of handling the future problems because earlier problems were never thought from such perspective which is needed to be thought in coming future. For sure at some time in future we will face such problem, therefore we need be prepared as to what needs to be done when such problem will occur.