LOST IN AMBIVALENCE: PATENTABILITY OF WORKS BY ARTIFICIAL INTELLIGENT SYSTEMS

Navaneeth SS, B.A. LL.B (Hons.) Student at The National University Of Advanced Legal Studies

"A computer would deserve to be called intelligent if it could deceive a

Human into believing that it was Human." - Alan Turing[1]

The earliest recognized model of patents was the *statute of monopolies* by Queen Elizabeth of England in May 1624.[2] Which was later codified under common law jurisdiction. As a consequence of this, the origin of Intellectual Property Rights, initially known as 'intellectual objects' merely provided monopoly rights. Advancing 400 years, today, some machines mimic cognitive human functions. Specifically, speech, perception, vision, and even decision making. While Artificial Intelligence is merely a pre-programmed system with a set of instructions that significantly lacks intelligence,[3] there are AI systems that continue to create better, improved pieces of work such as inventions, music, art, poems, and so on. Which urges the need to consider an adaptation in public policy on the IP front. Which begs the question: Has the time come, to reinvent the concepts of the Intellectual Property considering the rise of an inhuman species, who have imparted perhaps greater intelligence than humankind themselves. Because regardless of the evolution of IP since its inception, it was still tailored and developed across jurisdictions considering only humans, and the founders of the discipline themselves could not have fathomed the radical changes yet to come, let alone AI. Two recent attempts to attain IPRs for such works that the AI had created, had been refused so far.[4] This comment discusses the Patentability of the Creative Work Products of Artificial Intelligence in the field of Computer Science.

---

[1] Alan M. Turing in his 1950 definition of the Turing Test.
Cyber Heroes of the Past: Alan Mathison Turing,
available at http://wvegter.hivemind.net/abacus/CyberHeroes/Turing.htm
(Alan M. Turing was an English mathematician, cryptoanalyst and computer scientist who played a crucial role in World War II to break the German Enigma codes. He is considered by many to be the father of modern computer science.)
[2] Susan Sell and Christopher May, Moments in Law: Contestation and Settlement in the History of Intellectual Property , Review of International Political Economy , Autumn, 2001, Vol. 8, No. 3 (Autumn, 2001), pp. 467-500
[3] *Russell, Stuart J.; Norvig, Peter (2009). Artificial Intelligence: A Modern Approach (3rd ed.). Upper Saddle River, New Jersey: Prentice Hall. ISBN 978-0-13-604259-4.*
[4] Epo.org. 2022. EPO - EPO refuses DABUS patent applications designating a machine inventor. [online] Available at: <https://www.epo.org/news-events/news/2019/20191220.html> [Accessed 5 June 2022].

I.   INTRODUCTION

On 12 May 1997, one of the all-time greatest chess champions, Gary Kasparov witnessed the worst defeat of his career. He lost a match to a computer, 'Deeper Blue' in 19 moves. Kasparov had never lost a match in under 20 moves to a single human in his entire career.[5] This was, arguably one of the events in the history of Artificial Intelligence that resuscitated the way to a better, clear understanding of the discipline and gave hope for an age-old dream of sentient, conscious and self-evolving machines. Even so, a rather realistic approach to the field indicates that nothing of the sort needs to be expected in the foreseeable future.[6] For the time being, one can only expect even the smartest of computers to do what they've (it's) been told or programmed to do. The fact that humans are pretending to be chatbots, personal assistants, and concierges is a mere reflection of the reality of artificial intelligence.[7] That is, it still has a long way to go. But in contrast, the innovations, in the field of IP and the nearly 340,000 AI-related inventions since the 1950s are not to be disregarded.[8]

The United States Patent and Trademark Office(USPTO) recently requested the World Intellectual Property Organisation(WIPO) comment on Patenting Artificial Intelligence inventions.[9] To which the WIPO responded with an issues paper[10] on AI and IP policy. The paper primarily focuses on AI issues in Patents, Copyright, Data, Designs, and so forth. The focus throughout the paper[11] and USPTO's request for comments is whether the IP policy status quo is competent enough for the new and rising challenges put forth by the prevailing as well as forthcoming AI inventions and cater to its advancement.[12]

II.   TECHNICALITIES
A. Artificial Neural Networks

---

[5] https://www.theguardian.com/uk/the-northerner/2012/may/14/alan-turing-gary-kasparov-computer
[6] Philip Boucher, How artificial intelligence works, Panel for the Future of Science and Technology, European Parliamentary Research Service
[7] Ellen Huet, The Humans Hiding Behind the Chatbots, https://www.bloomberg.com/news/articles/2016-04-18/the-humans-hiding-behind-the-chatbots
[8] WIPO (2019). WIPO Technology Trends 2019: Artificial Intelligence. Geneva: World Intellectual Property Organization.
[9] https://www.govinfo.gov/content/pkg/FR-2019-08-27/pdf/2019-18443.pdf
[10] Draft Issues Paper on Intellectual Property Policy and Artificial Intelligence prepared by the WIPO Secretariat, WIPO Conversation on Intellectual Property (IP) and Artificial Intelligence (AI), WIPO/IP/AI/2/GE/20/1
[11] Ibid
[12] Jennifer B. Maisel, World Intellectual Property Organization Weighs in on Artificial Intelligence and Intellectual Property, https://www.lexology.com/library/detail.aspx?g=5423cc1c-c232-44b0-900a-dd6ef334db36

The DABUS was created employing the technology of Artificial Neural Systems or Artificial Neural Networks. Neural networks are a family of models which are loosely based on the structure of neurons in the brain. They are made up of simple processing units which are linked by weighted connections to form structures that can learn relationships between sets of variables.[13] It is in essence a mechanism that mimics the working of the actual human brain to come up with ideas and innovations based on the data that is needed for it. This obligatory process of feeding data and the candid absence of consciousness in these artificial neural networks(systems) are what is holding it back from attaining the recognition for its work product

B. Algorithms

In Gottschalk v. Benson[14] the US Supreme Court ruled that an algorithm is essentially an abstract idea. The patent application in question was a method of converting decimal numbers to binary numbers. The patent was refused as it was essentially an algorithm or a mathematical formula and was, therefore, an abstract element. Ergo, a rather broad mathematical formula implemented through a computer is not under the purview of patent protection.[15] In *Alice* v. *CLS Bank,*[16] the US Supreme Court said 'abstract ideas' are ineligible for a patent unless an elusive concrete component is added. The court found four financial trading systems to be ineligible under patent protection. However, the problem with *Alice* was more than mere abstraction. The reason cited by the court was that there was nothing new with reducing settlement risk by using escrow accounts. The main grounds for refusal was that the claim was rather routine and conventional. And mere use of a computer to carry it out will not change the subject matter of the patent application. This usage of relating software to their functions, in turn being connected to their constituent algorithms has caused American judges to accord the same meaning to the terms 'algorithms' and 'computer programs'.[17] When they are in fact very different.

    i.   Mathematical Modelling

---

[13] Cheng, Bing, and D. M. Titterington. "Neural Networks: A Review from a Statistical Perspective." *Statistical Science*, vol. 9, no. 1, 1994, pp. 2–30. *JSTOR*, www.jstor.org/stable/2246275. Accessed 23 July 2020.
[14] Gottschalk v Benson 409 U.S. 63, 175 U.S.P.Q. 673 (1972)
[15] P. Samuelson, Benson Revisited: The Case Against Patent Protection for algorithms and other computer program-related inventions (1990) 39 Emory L.J. 1025.
[16] Alice v. CLS Bank 573 U.S. 208 (2014)
[17] *Id* at 15.

Over the last few years, there has been a significant rise in the use of mathematical modeling techniques across a wide variety of disciplines. From picking out what stocks to buy[18] to facilitating business models and operational research,[19] these mathematical models have advanced to the point where they design and *create* novel inventions. Which are in fact, patent-worthy but are, however, overlooked for the fact that its curator, isn't a natural person. This conjecture in reality is contradictive of the principal ideals of inventorship itself.[20] Be that as it may, this onset is justified as the existing concept of inventor/inventorship was definitive of the recognition of *natural persons* for their works. This duality appeals to the exigency to either rethink a new class of intellectual property rights or redesign the existing concept on an inclusive basis comprehensive of the works of AI.

III.   THE PHILOSOPHY
A. DIFFERENCE IN VIEWS (EPO, USPTO)

There is no globally accepted standard on the patentability of AI Inventions. The USPTO follows the general eligibility framework under 35 U.S.C. § 101.[21] Japan, China, and Korea (KIPO), all have a hardware-centric policy while granting patents to AI inventions. These state that computer programs per se cannot be patented. However, when coupled with hardware resources or when in conjunction with technical characteristics is patentable.[22] The European Patent Office (EPO) has specified that AI and Machine Learning (ML) patents with applications in technical fields of endeavor are patent-eligible.[23] The EPO has taken a stance that AI and ML are mathematical and algorithmic methods and are not under the purview of patents. However, when coupled with a technical application, it would seem otherwise. En masse, the new eligibility framework may prove

---

[18] Kryzanowski, Lawrence, et al. "Using Artificial Neural Networks to Pick Stocks." *Financial Analysts Journal*, vol. 49, no. 4, 1993, pp. 21–27. *JSTOR*, www.jstor.org/stable/4479664. Accessed 23 July 2020.

[19] *Id* at 13

[20] S. 7(3), Patents Act 1977 (c. 37) , (uk)
https://www.legislation.gov.uk/ukpga/1977/37/part/I/crossheading/right-to-apply-for-and-obtain-a-patent-and-be-mentioned-as-inventor/data.xht?view=snippet&wrap=true

[21] 35 U.S. Code § 101 (requiring "invention" or "discovery"), § 102(g) (requiring "conception" and "reduction to practice" of invention).
Inventions patentable, available at https://www.law.cornell.edu/uscode/text/35/101

[22] Jennifer B. Maisel, USPTO Requests Comments on Patenting Artificial Intelligence Inventions, available at https://www.ptablaw.com/2019/09/10/uspto-requests-comments-on-patenting-artificial-intelligence-inventions/

[23] Artificial intelligence and machine learning, Guidelines for Examination, available at
https://www.epo.org/law-practice/legal-texts/html/guidelines2018/e/g_ii_3_3_1.htm

to be a beneficial step for AI in terms of IP.[24] It is imperative to understand that an AI invention, unlike traditional patents, comprises a combination of several inventions. This is because an AI invention at its grassroots level is essentially mathematical computations or a unique set of algorithms or a combination of both.[25] Therefore, the question of capturing the invention in its entirety and sophisticated nature in a patent claim is not as simple and the scope of protection under its purview is not very assuring either.

i.   Arguments For

According to the European Patent Office(EPO): "The expression "computer-implemented inventions" (CII) covers claims which involve computers, computer networks or other programmable apparatus, whereby at least one feature is realized utilizing a program."[26] In simpler terms, all inventions involving a step performed by a computer program can be considered a Computer-Implemented Invention(CII).[27] Article 27 of TRIPS states that inventions are patentable in all fields of technology, provided that they are new, involve an inventive step, and are capable of industrial application[28]. However, the inventions that are purely abstract must remain excluded since only technical inventions should be protected by patents.[29]

The AIPPI Sydney resolution recognized that Computer-Implemented Inventions that facilitate in a field of technology are eligible for a patent. The resolution stated that:

> As a question of principle clearly reflected in the TRIPS Agreement, and taking into account other reasons of a legal, economic and practical nature, patents should be available, and patent rights enjoyable, without discrimination for inventions in all fields of technology, including CIIs.[30]

Beyond the frontline arguments, there are three major justifications for modern-day IP: Personality theory explains IP as the extension of an Individual, the Utilitarian View states that IP facilitates holistic innovation in the society and the Lockean View is directed to justify hard

---

[24] Jennifer B. Maisel and Eric D. Blatt, New EU Patent Guidelines May Affect Companies' AI Strategy, available at https://www.rothwellfigg.com/publications/new-eu-patent-guidelines-may-affect-companies-ai-strategy

[25] Lynn Lazaro, Artificial Intelligence in the world of Intellectual Property,
available at https://www.mondaq.com/india/patent/892134/artificial-intelligence-in-the-world-of-ip

[26] Section 3.9, chapter 4 –claims, part F – the European patent application
Available at, https://www.epo.org/law-practice/legal-texts/html/guidelines/e/f_iv_3_9.htm

[27] Matthieu Dhenne, The AIPPI and the Computer-Implemented Inventions, European Intellectual Property Review, E.I.P.R. 2019, 41(10), 621-627

[28] Patentable Subject Matter Article 27(1), TRIPS

[29] *Id* at 15.

[30] 2017 AIPPI World Congress – Sydney, Adopted Resolution, October 17, 2017

work and effort.[31] All three of these justifications hold good for providing IPRs to the work created by Artificial Intelligence.

ii.   Arguments Against

The reasoning behind the argument that AI cannot be construed as an inventor and that only a natural person can be is this: AI cannot possess Intangible Rights and cannot be held accountable for the same.[32] This attribute a sense of power and powerlessness at the same time to AI. But, considering the developing field of AI, it is only a matter of time until AI produces works without a direct input of data and instructions by humans.[33] This begs the question, will the current definition of the inventor that is restricted to merely natural persons be sufficient when the time comes. In Fiers v. Revel,[34] the U.S Court of Appeals said that the decisive factor in determining inventorship is who conceived the invention. More specifically, the idea that facilitated the invention or the person whose idea it was are quite irrelevant. Projecting the logic onto AI inventions, Since the initial data is the only thing inputted to AI systems, and the end-product is the result of the work of AI and AI only, AI should be given the inventorship and recognition for its work. But as mentioned before, owing to the inaccessibility of AI in Intangible Rights and at the same time being an *independent* inventor there is no place for AI Inventions. This calls for a new segment of Intellectual Property Rights that is not in the present spectrum to ensure recognition of AI systems. Donald Chisum in his treatise on patent law explains:

> "[I]t would be morally offensive to allow one to harvest what another has sown. The requirement bars a patent even if the true inventor does not complain or if the true inventor is not known, as, for example, when a person discovers and imports for the first time into the United States a device in common use in a foreign country. The originality requirement limits patent monopolies to those who actually expend inventive effort successfully."[35]

One of the fundamental principles of Patent Law is that the actual deviser of the invention must be indicated as the inventor in the patent application.[36] Concomitantly, during the review of the DABUS patent applications, EPO interpreted Article 81, Rule 19(1) of the European Patent Conventions(EPC)

---

[31] *Moore, Adam (2014). "Intellectual Property". Stanford Encyclopedia of Philosophy. Metaphysics Research Lab, Stanford University*
[32] Id at 25.
[33] Id at 4.
[34] Fiers v. Revel, 984 F.2d 1164, United States Court of Appeals, Federal Circuit.
[35] 1-2 Donald Chisum, Chisum on Patents § 2.
[36] *Id* at 20.

that, in a European patent application the inventor must be a natural person.[37] This conflict indicates that the EPO has failed to address the works of AI and undermined the recognition for its works. DABUS or *Device for the Autonomous Bootstrapping of Unified Sentience* was the prodigal son who had two patent applications filed in the EPO concerning a beverage container (EP 18275163) and a flashing device (EP 18275174). Both were denied because DABUS does not have a legal personality and only natural persons can be construed as inventors. The applicant had argued that the subject matter was developed without any human intervention. And that the invention was a result of the machine recognizing the novelty of the idea behind the invention before a natural person did. Therefore, the machine(DABUS) should be recognized as the inventor, and the applicant should be given ownership of the inventions of the machine. However, the EPO had replied that since EPO does not verify the origin of subject matter, it was irrelevant and that giving inventorship to a non-natural person was not in accordance with the generally accepted practice across jurisdictions that inventorship is only attributed to human inventors.

This conflict in law between s. 7(3) of the Patents Act, 1977 and the interpretation of Article 81 testify to the design of inventorship, which very well failed to account for the possibility of inventions devised by inhuman entities. This calls attention to reconsider inventorship in an attempt to recognize the works of AI.

B. Prevailing System in India

In India, there is a direct ban on mathematical methods, computer programs, and algorithms[38] unless justified with significant technical background. And even so, if the inventor is specified as AI, the patentability in question cease to exist. Alternatively, to protect such algorithms, the algorithm could be incorporated into the code of the program and brought under the protection of Copyright Law.[39] But this is not an effective method since the algorithm itself is an inventive step[40] and inventive steps are not given protection under Copyright Law. Copyright was never designed to effectively protect such technical achievements. Furthermore, if we argue patentability based on the algorithm being an inventive step, Section 2(1)(ja), The Patents Act, 1970 also states that to establish an inventive step, *the invention must not obvious to a person skilled in the art*. As for AI, which has the capability to predict foreseeable outcomes in this regard, all algorithms are obvious and therefore none of them are

---

[37] Id at 6.
[38] S. 3(k), The Patents Act, 1970
[39] Id at 25.
[40] S. 2(1)(ja), The Patents Act, 1970

inventive steps. This ambivalence is what makes the patentability of algorithms and computer programs, let alone AI inventions difficult in India.

IV.   INVENTORSHIP

Inventorship is not limited to mere recognition. It is moreover, a way of asserting property rights to prevent and defend against infringement.[41] While the question of what AI can *reap from its sows* stands unanswered, its subservience is not reason enough to overlook the works of AI which have as much merit as the works curated by humans. An inventor is a person who has contributed to the conceiving of the subject matter in the patent application. However, if another person while doing a particular work for the conceiver of the idea comes across a significant improvement, and if that improvement is mentioned in the patent application by the conceiver, then they should be listed as an inventor as well. Projecting this logic unto AI inventions, the roles are reversed. The person who feeds data into the system has no contribution whatsoever to the end result. Whatever the output product may be, it is the sole creation and work product of the machine that came up with it. But rather than adhering to the previously mentioned practice, the inventorship of the work that the system had curated, is not awarded to it. But rather, it goes to either the creator of the system or the person who had inputted the data into the system.

Inventorship consists of two major elements : (1) conception and (2) reduction to practice.[42] Unlike human inventions, which are sculpted by a variety of stimulations, AI inventions are typically made by the same process, Algorithms. What varies in each output and novel invention is merely the changes in that particular algorithm. Essentially, all inventions by AI systems are created in three major steps: input, processing, and output. Here a patentable invention's *conception* and its modeling to facilitate *practical application* are made possible by AI alone. The only requisite is inputting the raw mainstream data that is used by the machine to come up with the inventions. And since the initial designs at the conception stage need not be presented in the patent application,[43] that doesn't restrict patentability either.

---

[41] 35 U.S.C. § 261 ("[P]atents shall have the attributes of personal property."); § 262 ("In the absence of any agreement to the contrary, each of the joint owners of a patent may make, use, offer to sell, or sell the patented invention .. . without the consent of and without accounting to the other owners.")

[42] 35 U.S.C. § 102 (2006)

[43] Burroughs Wellcome, 40 F.3d at 1228 (citing Applegate v. Scherer, 332 F.2d 571, 573 (C.C.P.A. 1964)). Establishing the efficacy of the invention falls under the reduction to practice prong of inventorship

Although the data input step isn't as important from a legal standpoint, the developments in AI are only so advanced(limited) that it is quite an imperative step in facilitating AI Inventions. This prompts us to introspect the Patentability of AI inventions from a co-inventorship or joint inventorship angle. On the one hand, as a viable candidate for joint inventorship, we may consider the creator of the AI system. And on the other hand, we cannot discard the person feeding the data into the system, without which there will be no invention.

A. Joint Inventorship

The doctrine of joint inventorship is arguable, one of the most ambiguous concepts in patent law.[44] Since there can only be one inventor named in the patent, courts often face the dilemma of ascertaining who that is.[45] Before 1984, § 118 was a provision pertaining to joint inventorship.[46] But it was rarely used as there were no necessary measures taken to facilitate or even acknowledge the occurrence of joint inventions.[47] In 1984, Inter alia, the definition of Joint Inventorship itself was amended by the United States Congress under §116.[48] In *Monsanto Co.* v Kamp[49] justified joint inventorship in an interference proceeding:

> "It is not necessary that joint inventors physically work together on a project, and it is permissible for one inventor to "take a step at one time, the other an approach at different times."

After September 16, 2012, 35 U.S.C § 116 was refined so as to include and provide for the venue for joint inventions even if the inventors hadn't worked together at the same time nor had they

---

[44] Mueller Brass Co. v. Reading Indus., Inc., 352 F. Supp. 1357, 1372 (E.D 1972)

[45] Clear as Mud: An Empirical Analysis of the Developing Law of Joint Inventorship in the Federal Circuit, Eric Cohen, Berkeley Technology Law Journal, 2013, Vol. 28, pp. 383-415

[46] 35 U.S.C. § 116 (1982). The original version of § 116 provided:
> When an invention is made by two or more persons jointly, they shall apply for patent jointly and each sign the application and make the required oath ....
>   If a joint inventor refuses to join in an application for patent or cannot be found or reached after diligent effort, the application may be made by the other inventor on behalf of himself and the omitted inventor....
>   Whenever through error a person is named in an application for patent as the inventor, or through error an inventor is not named in an application, and such error arose without any deceptive intention on his part, the Commissioner may permit the application to be amended accordingly, under such terms as he prescribes.
Ibid.

[47] *See* W. Fritz Fasse, The Muddy Metaphysics of joint Inventorship: Cleaning Up after the 1984 Amendments to 35 U.S.C § 116, 5 HARV. J.L. & TECH. 153, 156 n.19 (1992)

[48] Patent Law Amendments Act of 1984, Pub. L. No. 98-622, § 104(a), 98 Stat. 3383, 3384-85.

[49] Monsanto Co. v. Kamp, 269 F. Supp. 818, 824, 154 USPQ 259, 262 (D.D.C. 1967)

made the same amount of contribution to the invention.[50] The amended provision in fact implicitly enables patentability for AI inventions under the joint inventorship approach.

> The complication in the patentability of creative work products of AI is not ascribed to the quality or merit of the AI work/invention. But rather because the invention is curated by an inhuman entity and since the inventor listed in patent applications is not a natural person. This calls for the possibility of joint inventorship between man and machine. If not sole inventorship, implementing joint inventorship to AI inventions and conceding the credit for the works of AI would be a cardinal stratagem towards a future where AI inventions and work products are given creditable remembrance.

Considering AI inventions today, we see computer programs inventing inventions that are not only concrete, and rather useful for mankind. But interestingly, even though all criteria for patentability is fulfilled, the age-old mandate of the inventor being a natural person hinders from obtaining patents. In all actuality, a provision was never brought about considering the possibility of inventions being curated by an inhuman entity in patent law and the need for the same is rather imminent.

V.   IMMINENCE OF A NEW REGIME
A. A Realistic Approach

"Before today's teenagers finish college, computers will interpret changes in tax law and

plan tax strategies for business." – The New York Times on October 16, 1983[51]

There is a consistent loop of cheer and disappointment around the topic of predicting the future of AI. The above quote is from a newspaper article from the New York Times in the year 1983. But in a sense, this never-ending hype surrounding AI has fuelled its progress. Despite the hypes surrounding AI being a bit far-fetched, there have been significant developments in the discipline in

---

[50] 35 U.S.C § 116 (a) explains :
        Inventors may apply for a patent jointly even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not make a contribution to the subject matter of every claim of the patent.
[51] *The New York Times* on October 16, 1983, Section 3, Page 3, available at
https://www.nytimes.com/1983/10/16/business/business-forum-the-only-source-of-patient-capital.html

the past few decades. This calls for a policy on the IP front that recognize the work product AI systems.

Although the field of AI had progressed exponentially over the years, these "machines are still remote from achieving a level of intelligence comparable in complexity to human thought".[52] And even though there are several AI systems programmed dedicatedly to play chess, checkers, backgammon, or other games, which intend to employ AI techniques to simulate human behavior,[53] they are still miles afar from actual stimulation of human behavior. An elegant model to elucidate this is the incident where the computer "Deeper Blue" had defeated Gary Kasparov in a chess match in under 20 moves.[54] While Deeper Blue analyses millions of viable moves, Kasparov, a grandmaster in chess, will disregard over 80 percent of those moves as they are too obvious or deplorable towards winning the game. This ability to identify these unwanted moves is still to be developed in the AI regime. And quite realistically, it may be a very long way off in the future.[55]

B. Developing a Legally Compliant AI

But let us consider a scenario where the Artificial Intelligent system in fact bypasses the undesirable obvious moves or outcomes. For that, the AI must cease to follow the programmed algorithm. When that happens, the algorithm is no more. Because an algorithm is composed of a finite set of steps, each of which may require one or more operations.[56]And what might follow when the algorithm is not followed, could be the dawn of machine consciousness.

> David Hume, the Scottish philosopher, conceives of reason as the slave of the passions, which implies that human reason has predetermined objectives it cannot question. An essential element of an algorithm running on a computational machine (or Logical Computing Machine, as Alan Turing calls it) is it is having a predetermined purpose: an algorithm cannot question its purpose, because it would cease to be an algorithm.[57]

---

[52] Firschein, Forecasting and Assessing the Impact of Artificial Intelligence onSociety, Third International Joint Conference on Artificial Intelligence: Advance Pa-pers of the Conference (August 20-23, 1973) (Stanford University).

[53] See generally Berliner, A Chronology of Computer Chess and its Literature, 10ARTIFICIAL INTELLIGENCE 201 (1978).

[54] *Id* at 5.

[55] *Id* at 4.

[56] S*ee* Ellis Horowitz, Fundamentals of Computer Algorithms, 1 (1984).

[57] Gonzalo Génova & Quintanilla Navarro, Are human beings humean robots? , Journal of Experimental & Theoretical Artificial Intelligence, pg no. 177 - 186, Vol 30, Issue 1,
Available at https://doi.org/10.1080/0952813X.2017.1409279

While this invisible veil of algorithmic hindrance holds back AI systems from conferred inventorship and much more, David's postulation on *reason being the slave of passions*[58] and the philosophy of humans being humean robots put forth a possibilistic approach that AI systems cannot cease to follow or question the algorithm upon which it is built, in the same vein that humans have predetermined objectives that they cannot question.

---

[58] *Ibid*