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AN ANALYSIS OF THE PATENTABILITY OF AI-BASED INNOVATIONS WITH SPECIAL REFERENCE TO THE 'DABUS' CASE IN THE UNITED KINGDOM

Sanjana Shikhar[1]

ABSTRACT

The field of theoretical study for Artificial Intelligence (AI) has advanced. A number of concerns related to patent law arise from the fact that AI technologies allow machines to learn systematically from data and experience, think in concepts, and finally transform them into a source of innovative knowledge. AN important question which arises here is: Is it possible to list artificial intelligence as an inventor in patent applications? By rejecting patent applications with the AI called DABUS, named as the inventor by its programmer, Dr Thaler, the UK has maintained its stance and demonstrated that the court applied a strict interpretation of the statutory language. In order to give readers a complete picture of the situation, this paper discusses the topic of patentability of AI-based innovations with particular reference to the "DABUS" Case and analyses the decision, focusing on the justifications underlying the courts' arguments and implications of the same on future AI-based innovations. It also offers future challenges and suggestions.

Keywords: Artificial Intelligence, DABUS, Patent, Programmer

INTRODUCTION

The definition of intelligence is typically elusive. When twenty-four eminent theorists were asked to define the phrase, each of them provided an equal number of "slightly diverse" definitions. Similarly, defining AI is not a simple task. There isn't a set definition that everyone agrees upon. In general, the term "AI" is used to describe a variety of algorithms that roughly replicate the cognitive processes of the human brain. Modern Artificial Intelligence is capable of producing a wide variety of complex creative outputs, and it is increasingly helping inventors in their job. Consequently, the query is: Should AI be listed as an inventor in patent applications? Inventorship is still a matter of national discretion, despite the international

[1] B.A. L.L.B. (Hons.), Faculty of Law, Banaras Hindu University, Varanasi.

harmonisation of patent law. In this regard, the "Artificial Inventor Project"[2] was launched in 2019 by a group of academics, attorneys, and inventors. The project's goal is to submit patent applications globally with AI listed as the inventor, accepting AI Inventorship, in order to elicit reactions from significant IP offices. With only two exceptions—South Africa and Australia in the first instance—those patent applications are currently either pending or refused by most IP offices. But in April 2022, the Australian Court of Appeal overturned the ruling and disallowed patent protection, agreeing with judgements from other countries, such as the United Kingdom (UK).[3]

THE 'DABUS' CASE: GRANT OF PATENT TO AI- BASED INNOVATIONS AROUND THE WORLD

Historically, human inventors have been considered when developing patent law. Thus, the application of creative AI systems introduces a number of fresh difficulties that the current patent framework would find difficult to handle. These days, AI systems can test and solve some issues with little to no human input. As a result, the role of computers in the creative process can be understood as a continuum that progresses from inventions that are entirely human-made through inventions that are supported by computers and, finally, inventions that are generated by computers.[4] Predictably, the later end of this spectrum is the one that is most contentious in terms of patent law.

Two inventions (a "beverage container based on fractal geometry" and a "flickering light deviceto draw attention during search and rescue operations") that were the focus of patent applications in multiple nations were made possible by an AI technique known as "DABUS." The DABUS technology was created and even patented by a person, Mr. Thaler, but the aforementioned two ideas were purely machine-generated, with no human input.[5]

Since DABUS is not recognised as a person under Sections 2 and 6 of the Patents Act, 1970,[6] the Controller General of Patents in India stated objections in the Examination Report of Thaler's Indian patent application, claiming that the application could not pass formal and technical examination. As a result, it is not viable to recognise AI as patent holders under India's

[2] THE ARTIFICIAL INVENTOR PROJECT, https://artificialinventor.com/ (last visited Dec. 24, 2022).
[3] Oliver Bell and Vito Petretti, Australian Court Overturns AI Inventorship Ruling, JDSUPRA (Dec. 22, 2022, 8:46 AM), https://www.jdsupra.com/legalnews/australian-court-overturns-ai-1320594/.
[4] Michael McLaughlin, Computer-Generated Inventions, SSRN PAPERS (Dec. 21, 2022, 9:48 AM), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3097822.
[5] Jackie O'Brien and Isobel Taylor, The year that was for DABUS: The World's First AI Inventor, INSIDETECH LAW (Dec. 20, 2022, 7:36 AM), https://www.insidetechlaw.com/blog/the-year-that-was-for-dabus-the-worlds-first-ai-inventor.
[6] Patents Act, 1970, No. 39, Acts of Parliament, 1970 (India).

current statutory framework.

If we look at other countries, the UK Intellectual Property Office and the High Court both rejected Dr Thaler's application because they believed that a machine could not be consideredan inventor under the current rules of the UK Patent Act, 1977.[7] It is interesting to note, though, that the UK Supreme Court has granted the further appeal. This implies that they believe the case has significant ramifications, which may be related to the expanding usage ofAI systems in a variety of industries.[8]

The Australian Patent Office initially turned down Dr Thaler's patent application there. Interestingly, the Federal Court of Australia decided that AI might be recognised as an inventor under the Patents Act, 1990[9] when the case was brought before it since the Australian PatentsAct does not clearly prohibit an inventor from being a non-human AI. However, an expanded 5-judge appeal Bench of the Full Federal Court overturned this decision and brought Australia back in line with the stance adopted by other countries. The Full Court cited Section 15 of the Patents Act of 1990, which stipulates that only "a person who is an inventor" may receive a patent for an invention; as a result, a person is to be understood as a natural person.[10]

By discussing the entire timeline of the 'DABUS Case,' from the facts of the case, the issues, the arguments put forth by the parties, the court's reasoning and observations, to the UK Courtof Appeal's judgement, which was backed by the pertinent provisions of the UK Patents Act, 1977 and some significant precedents, this paper provides the readers with a comprehensive outline of the case.

ANALYSIS: THALER V. COMPTROLLER GENERAL OF PATENTS TRADEMARKS AND DESIGNS

A. APPLICATIONS TO THE UNITED KINGDOM INTELLECTUAL PROPERTY OFFICE

Stephen Thaler submitted two distinct patent applications via application forms dated17 October 2018 and 7 November 2018. The title of the first was "Food Container" and addressesthe design of specific food packaging components. The title of the second is "Flashing lights are one of the "Devices and Methods for Attracting Enhanced Attention" devices. On July 23, 2019, he subsequently submitted

[7] Patents Act, 1977, No. 27, Acts of Parliament, 1977 (United Kingdom).
[8] PINSENT MASONS, https://www.pinsentmasons.com/out-law/news/supreme-court-inventorship-dabus-patent-dispute (last visited Dec. 18, 2022).
[9] Patents Act, 1990, No. 83, Acts of Parliament, 1990 (Australia).
[10] Nayantara Sanyal and Simran Lobo, Inventions By Artificial Intelligence: Patentable Or Not?, MONDAQ (Dec. 23, 2022, 12:37 PM), https://www.mondaq.com/india/patent/1223510/inventions-by-artificial-Intelligence-patentable-or-not.

statements of inventorship and a completed right to grant patent forms. In the section for the family name of the inventor, he listed the name "DABUS" (Device for the Autonomous Bootstrapping of Unified Sentience), which is the name of Dr Thaler's AI machine. Dr Thaler checked the box asking him to explain how he was entitled to a patent and wrote, "By ownership of the creative machine "DABUS"". The IPO reacted on August 8 with the claim that Dr Thaler had disregarded S.13 (2) of the 1977 Act, which obliged him to name the inventor and explain how he had acquired his rights from them.

Asserting that "the applicant specified no individual or persons whom he considers to be an inventor as the invention was wholly and solely developed by DABUS", Dr Thaler submitted an amended form on August 28, 2019. The information that is currently accessible also makes it abundantly evident and without doubt that Dr Thaler not only founded DABUS but also set it up to create the challenged inventions.

The provisions in question were S.7 and S.13 of the Patents Act 1977.

Section 7 of the Act, 1977 states:

"(1) Any person may make an application for a patent either alone or jointly with another.

(2) A patent for an invention may be granted—

(a) Primarily to the inventor or joint inventors;

(b) in preference to the foregoing, to any person or persons who, by virtue of any enactment or rule of law, or any foreign law or treaty or international convention, or by virtue of an enforceable term of any agreement entered into with the inventor before the making of the invention, was or were at the time of the making of the invention entitled to the whole of the property in it (other than equitable interests) in the United Kingdom;

(c) in any event, to the successor or successors in title of any person or persons mentioned in paragraph (a) or (b) above or any person so mentioned and the successor or successors in title of another person so mentioned; and to no other person.

(3) In this Act 'inventor' in relation to an invention means the actual deviser of the invention and 'joint inventor' shall be construed accordingly.

(4) Except so far as the contrary is established, a person who makes an application for a patent shall be taken to be the person who is entitled under subsection (2) above to be granted a patent and two or more persons who make such an application jointly shall be taken to be the persons so entitled."

S.13 of the Act, 1977 states as follows:

"(1) The inventor or joint inventors of an invention shall have a right to be mentioned as such in any patent granted for the invention and shall also have a right to be so mentioned, if

possible, in any published application for a patent for the invention and, if not so mentioned, a right to be so mentioned in accordance with rules in a prescribed document.

(2) Unless he has already given the Patent Office the information hereinafter mentioned, an applicant for a patent shall within the prescribed period file with the Patent Office a statement—

(a) Identifying the person or persons whom he believes to be the inventor or inventors; and

(b) Where the applicant is not the sole inventor or the applicants are not the joint inventors, indicating the derivation of his or their right to be granted the patent; and, if he fails to do so, the application shall be taken to be withdrawn.

(3) Where a person has been mentioned as sole or joint inventor in pursuance of this section, any other person who alleges that the former ought not to have been so mentioned may at any time apply to the comptroller for a certificate to that effect, and the comptroller may issue such a certificate; and if he does so, he shall accordingly rectify any undistributed copies of the patent and of any documents prescribed for the purposes of subsection (1) above."

B. JUDGEMENT OF MR. HUW JONES: COMPTROLLER GENERAL OF PATENTS, DESIGNS AND TRADE MARKS

The hearing before Mr. Huw Jones took place on 14 November, 2019. He announced that he had decided against Dr Thaler and stated that, "I have found that DABUS is not a person as envisaged by S.7 and S.13 of the Act and so cannot be considered an inventor. However, even if I am wrong on this point, the applicant is still not entitled to apply for a patent simply by virtue of ownership of DABUS, because a satisfactory derivation of right has not been offered."[11]

Thus, the rejection was on two grounds that DABUS cannot be the inventor because he is not a person, and Dr Thaler is not qualified to submit a patent application.

Dr Thaler appealed this denial to the High Court on the grounds that (1) the hearing officer had predetermined the result, (2) he had taken the wrong tack in how he read the relevant statutes, and (3) he had illegally denied the applicant's rights by using the requirement in S.13 (2) of the Patents Act of 1977 that the inventor be identified. However, Marcus Smith J. denied the appeal in a ruling dated September 21, 2020.[12]

[11] Saransh Chaturvedi, The Curious Case of Dabus: Who should own the AI- Related inventions? SCC ONLINE (Dec. 23, 2022, 10:56 AM), https://www.scconline.com/blog/post/2020/12/26/the-curious-case-of-dabus-who-should-own-the-ai-related-inventions/.

[12] Amy Sandys, UK High Court rejects idea of invention by AI system Dabus, JUVE PATENT (Dec. 17, 2022,

C. REASONINGS AND OBSERVATIONS OF THE HIGH COURT

Dr Thaler had not established a claim to the invention, DABUS did not qualify as an inventor because it was not a person, and the hearing officer's finding that the applications were declared withdrawn in line with S.13 was accurate and all these led to the appeal's dismissal.

With regard to the first issue, the judge found that the natural interpretation of S.7 (3) was that the inventor seems to be a person. The judge stated that *Rhone-Poulenc Rorer International Holdings v. Yeda Research and Development Company Ltd*.,[13] addressed the meaning of this phrase. According to S.7 (3), an inventor is "the actual deviser of the invention." The term "actual" contrasts with a presumed or feigned deviser of the invention and refers to the natural person who came up with the creative thought, as stated by Laddie J in University of Southampton's Applications.[14]

Because the claims could contain non-patentable integers drawn from prior art, it is not sufficient that someone contributed to the claims.[15] In order for an invention to be considered inventive, it must not be evident to "a person skilled in the art" when taking into account the current state of the art. Therefore, inventions that are accessible to the typical expert in the field—who is "usually regarded" to be a human being—cannot be granted a patent. Laddie J added that the "contribution must relate to the creation of the inventive concept" in the University of Southampton Applications. To ascertain who the inventor is, it will be required to evaluate the information provided by the parties concerning the nature of the creative idea and who contributed to it.

With respect to the second issue, the judge determined that Dr. Thaler was not eligible to receive a patent under S.7(2)(b) or (c), as both sections needed that the inventor have reassigned the right to apply to the applicant, which was impossible because DABUS could not have done so because it is not a person.

On the third question, the judge rejected the applicant's claim that S.13 does not permit the Comptroller to deny a patent application by refusing to accept Dr Thaler statement of inventorship that accurately and honestly identifies Dr. Thaler as the invention's true inventor and details how Dr. Thaler came to be entitled to the patent. If S.7's provisions allowed a patent

8:34 PM), https://www.juve-patent.com/news-and-stories/cases/uk-high-court-rejects-idea-of-invention-by-ai-System-dabus/.

[13] Rhone-Poulenc Rorer International Holdings v. Yeda Research and Development Company Ltd., [2007] UKHL 43.

[14] University of Southampton's Applications, [2005] RPC 220, 234.

[15] Henry Brothers (Magherafelt) Ltd v. Ministry of Defence, [1999] RPC 442.

application to be awarded based solely on the applicant's sincere but unsupported conviction that they should be awarded a patent, then S.7's provisions would be rendered worthless. If the applicant cannot bring himself to fall within the parameters of S.7, the Comptroller is "justified—indeed compelled" to come to the conclusion that the application is unsatisfactory and liable to being presumed withdrawn.

D. ARGUMENTS BEFORE THE COURT OF APPEAL

When the case was heard by Lord Justice Arnold, Lady Justice Elisabeth Laing, and Lord Justice Birss in the Court of Appeal, it was reduced to three key questions: (i) Is the 1977 Act predicated on an individual's status as an inventor? (ii) What is S.13 of the 1977 Act's function, and what is its purpose? (iii) In accordance with S.13 (2), what is the appropriate response to the information Dr Thaler has provided?[16]

Dr. Thaler claims that the requirement that an inventor must be a living person is expressly excluded from the description of an inventor as the "actual deviser" of an invention. The fact that inventors are people was not and should not be a requirement of the legislation, even though it was clear at the time the Act was written.

However, the Comptroller's attorney argued that for the purposes of this appeal, the Comptroller didn't challenge three issues. First, the inventions were actually created by DABUS; second, they were patentable; and third, DABUS was established and owned by Dr Thaler, who also owned the company that produced the technologies in question. Due to the law's requirement that inventors be people, none of these qualified DABUS as the inventor. Furthermore, due to the requirement for a "transfer," as previously noted, Dr Thaler did not have the authority to be given these patents.

REGULATIONS AND RECOMMENDATIONS BEFORE THE ACT OF 1977

As none of the parties discussed the history of legislation before the act of 1977, it was necessary to deal with it in the present case. The Judge gave an overview of the same.

1. STATUTE OF MONOPOLIES, 1623

The issuance of patents "to the true and first inventor" was permitted by the Statute of

[16] Toby Bond and Katharine Stephens, UK Court of Appeal rejects DABUS patent application, BIRD & BIRD (Dec. 24, 2022, 9:47 PM), https://www.twobirds.com/en/insights/2021/uk/uk-court-of-appeal-rejects-dabus-patent-application.

Monopolies.[17] The Act prohibited a grant to anyone else, and it was difficult to transfer the right to obtain a patent until developments in the 20th century. It was also clear that when the term "true and first inventor" was used in the Statute of Monopolies, it referred to both true and first inventors as well as true and first importers into the industry.

2. PATENTS ACT, 1949

Under S.1 of the Patents Act of 1949,[18] only those claiming to be the true and first inventor or their assignee were permitted to submit applications. The Act of 1949 significantly altered the law in this regard. That Act made the right to a patent belonging to the actual and original inventor transferable. While there were no formalities necessary for a valid assignment, S.2(2) of the 1949 Act stipulated that when an application was made by an assignee, the true and original inventor must also have given his or her written consent to the application's making.

It is plausible to assume that the introduction of the idea of "mention of the inventor" by S.16 of the 1949 Act was one effect of the legal reform that allowed the grantee of a patent to now be an assignee.

"(1) if the comptroller is satisfied, upon a request or claim made in accordance with the provisions of this section— (a) that the person in respect of or by whom the request is made is the inventor of an invention in respect of which application for a patent has been made, or of a substantial part of that invention; and (b) that the application for the patent is a direct consequence of his being the inventor, the comptroller shall, subject to the provisions of this section, cause him to be mentioned as inventor in any patent granted in pursuance of the application, in the complete specification, and in the register of patents: Provided that the mention of any person as inventor under this section shall not confer or derogate from any rights under the patent."

"(2) For the purposes of this section the actual deviser of an invention or a part of an invention shall be deemed to be the inventor, notwithstanding that any other person is for any of the other purposes of this Act treated as the true and first inventor; and no person shall be deemed to be the inventor of an invention or a part of any invention by reason only that it was imported by him into the United Kingdom."

This has a number of consequences. First off, it is clear from the way this section is written that the actual deviser is a person because S.16 (2) reads "notwithstanding... any other person." Second, the word makes a contrast between the actual deviser and those who, according to the

[17] Statute of Monopolies, 1623, No. 3 21 Ja 1, Acts of Parliament, 1623 (United Kingdom).
[18] Patents Act, 1949, No. 87, Acts of Parliament, 1949 (United Kingdom).

law, are the "genuine and first innovators" but aren't the ones who actually came up with the innovation, such importers. Thirdly, enormous care has been taken to ensure that the real deviser's (or inventors) only legal claim under this clause is one of mention.

3. RECOMMENDATIONS OF THE BANKS COMMITTEE

In July 1970, the Banks Committee provided an assessment of the British patent system. The Committee stated at para. 526 that the phrase "true and first inventor" pertains to both the true inventor of the invention and anyone who introduces the innovation into the United Kingdom. The committee took notice of the need to submit an assent from the inventor in accordance with Section 2(2) of the 1949 Act at Paragraph 527.

The Committee had received complaints about this obligation, according to paragraph 528, that it was challenging to comply with because, frequently, the employers of the inventors may not be able to determine precisely whose assent is required.

The Committee recommended that the statute be streamlined in a number of ways at paragraph 530. Declarations of assent and inventorship ought to be eliminated. The approach to be taken should be that anyone purporting to be the inventor or to be authorized to receive the benefits of the patent when granted should have the right to submit an application.

The recommendations were as follows at paragraph 532:

1. The term "true and first inventor" should be replaced with the idea that the inventor is the one who actually devised the innovation.
2. Anyone asserting to be the inventor or to be entitled to receive the advantages of the patent when it is granted might very well apply for a patent, or in the case of an application asserting priority under the International Convention, anyone claiming to be that person's assignee or the person who filed the application abroad.
3. In no way should the submission of an application by someone other than the inventor be construed as the inventor's approval of the submission.
4. The applicants shall identify the persons they believe to be the inventors, and the inventors shall be recognized in the published specifications.
5. The Patents Act of 1949's requirement of declaration of assent in Section 2(2) should be removed.

E. ISSUES BEFORE THE COURT OF APPEAL

The judge next moved to the issues of this case.

i. Does the 1977 Act stipulate that inventors must be people?

The statement in S.7 (1) that "any individual" may submit an application for a patent without limitations has a purpose. The Banks Committee's recommendations included getting rid with the idea that anyone needed to fulfil any conditions before ever submitting a patent application. The legislation from the previous edition, which dates back to the Statute of Monopolies, was amended with the definition of "inventor" in S.7(3) in order to do away with the idea that an invention's actual and original inventor might not be the person who created it.

The concept of the actual creator of the invention has been a feature of British patent law since S.16 of the 1949 Act. The invention was made by the individual. That individual was being compared to people who had not yet done so and were considered to be the real and original creators, such as importers. Therefore, in the Yeda Case,[19] a distinction was made between the genuine deviser and a fictitious or assumed deviser.

The remainder of the 1977 Act is written assuming that the inventor is a person. Because it implicitly concedes that the law does not require that the real deviser of an invention be a person, the Comptroller's alleged submission that DABUS is the deviser of the innovations is incorrect and possibly unclear. Machines aren't people, either. Even if the machine was the thing that truly came up with these inventions, it has no business being credited as the creator.

ii. What is the purpose of and how does the 1977 Act's Section 13 function?

It is clear that this provision was created to implement the Banks Committee's recommendations for streamlining the application process. From the terms themselves, it appears that the only need for inventorship is that the petitioner names the person he believes to be the inventor. Even if the Comptroller can ask for a reason as to why the applicant failed to identify the person, they believed to be the inventor, the judge determined that the text of the section was satisfied. This interpretation of the wording is supported by the Banks Committee report, which shows that the legislation was to be changed from that under the 1949 Act, which placed an obligation demanding the identification of the actual and first inventor, along with a mandatory assent, among other things. Notably, the Banks Committee specifically allowed for situations when the inventor would not be able to be identified as acceptable.

[19] *Supra* note 13.

The Comptroller would have a right to be sceptical if the statement of inventorship contained an absurd justification for why the applicant was unable to identify the inventor. But it seems that S.13 (2)(a) has been fulfilled if the Comptroller was convinced that what the petitioner had supplied was their sincere view. Regarding S.13(2)(b), the judge also provided an illustration, speculating on what might occur if the applicant claimed that the inventor had granted them the right through a communication that was illegal. According to the judgement, the Comptroller would have cause to consider such a declaration to be insufficient.

In *Nippon Piston Ring Co.'s Application*,[20] it was decided that in order to comply with S.13 (2) (b), it was at least essential to specify which of S.7 (2) categories (b) or (c) the applicant fell under. Whitford J rejected counsel's argument that it was unnecessary to state whether of S.7(2)(b) or (c) an applicant fell under when the case was on appeal and stated that this is the least one needs to do, according to the ruling, and it is correct. Given that it is understood that one does not need to provide extensive details while indicating how he derives the title, one may reasonably wonder why this indication must be sent to the Patent Office. According to the Office, the phrase "by assignment" is sufficient to meet the criterion. There is no requirement that any documentation supporting the claim to the title be sent to the Office. The Office need not in any way be convinced that the assertion being presented is credible.

Therefore, it is safe to say that S.13 (2)(b) can be satisfied without requiring a lot of detail. To meet the Act's requirement, no document proving title needs to be submitted. The applicant's claim to title does not require the Comptroller to be "in any way satisfied" that it is valid.

Whitford J. claims that the purpose of S.13 (2) is to provide the Comptroller with information that will be made public. The section's goal is not to compel or make it easier to examine the applicant's alleged claim to the patent. The Comptroller must only demand that the applicant goes so far as to specify which portion of S.7 (2) he relies on.

iii. What is the appropriate response to Dr Thaler's declaration of inventorship in accordance with S.13 (2)?

Dr Thaler's statement begins with S.13 (2) (a), which names no specific person as the inventor because he doesn't think there is a human inventor. There is no implication that what he said wasn't an honest expression of what he believed. This case shows that not all inventions have a human who invented them simply because all inventors are persons. In certain cases, the Comptroller is not required to name anyone (or anything). Therefore, Dr Thaler has fulfilled

[20] Nippon Piston Ring Co's Application, [1987] RPC 120.

with his legal duties as set forth in S.13 (2) (a).

Dr Thaler argued that he is entitled to a patent for an invention produced by DABUS under S.7 (2)(b) because he invented, owns, and operated the machine. According to the law, this right to apply for and receive a patent for an invention produced by a machine belongs to the owner and operator of the machine. It was noted that Dr Thaler had met with requirement of S.13 (2) as well. He has provided evidence of how his claim to the invention came about. In light of this, it was decided that the applicant satisfied the conditions of S.13 (2) and (ii) the applications were not regarded as withdrawn.

F. JUDGEMENT

It was determined that an inventor must be a person in accordance with the relevant provisions of the 1977 Act. Persons alone can possess rights. Not a machine. A patent can only be issued "mainly to the inventor" and only under the conditions outlined in S.7 (2)(c) and (d). Before the innovation is created, only one individual may enter into an agreement that is legally binding and grants him full ownership of the invention's assets (other than equitable interests). As a result, DABUS cannot by law be considered an "inventor" for the purposes of S.7 in the absence of a statutory deeming clause. Furthermore, Dr Thaler has not cited any legal statute that grants him the right to that property. A person alone has the authority to claim inventorship. The sole part of the 1977 Act that grants the right to file for a patent is Section 7. It was determined that, under its appropriate interpretation, the law prohibits the issue of a patent where the inventor is a non-person. No one has the legal right to submit a patent application for a machine's inventions if the inventor is a machine rather than a person.

The reasons being that first, it is a statement that claims categorically that there is no such "person" and fails to name any pertinent "person" who the applicant believes to be the inventor. What is the appropriate response to Dr Thaler's declaration of inventorship in accordance with S.13 (2)? Second, it shows that the applicant does not have the right to submit a patent application under Section 7, both because it is categorically stated that the inventor is not a person and consequently, the inventor cannot have any property in the invention that could have belonged to the applicant or that could have become his property under Section 7(2)(c). It was noted that S.13 (2)(a) clearly requires the applicant to recognise the person he feels is the inventor, rather than only requiring the applicant to "assert their sincere belief regarding who the inventor was." A claim that the applicant honestly thinks the invention was created by a machine does not satisfy the criteria which is distinct. The appeal was therefore denied with

the majority of 2:1.

The three judges on the Court of Appeal's panel did not all agree with this conclusion. Lord Justice Birss, a newly appointed but well-known and highly respected patent judge, concurred that the creator had to be a human and not a machine. Nevertheless, this did not preclude Dr Thaler from receiving a patent in spite of this, according to him.[21]

In his opinion, the requirements of S.13 (2) were satisfied by merely delivering the requested information honestly. He disagreed with the other two judges on the panel and believed that this section's only goal was to provide the UK IPO with information that would later become public. Most people didn't concur.

According to Lord Justice Birss, it was not necessary to identify a person as an inventor in order for S.13 (2)(a) to be satisfied. It was sufficient for the petitioner to identify the inventor as they really believed them to be. The genuine identity of the creator was no longer important when deciding whether to grant a patent due to the history of UK patent law.

Lord Justice Birss also believed that because Dr Thaler had stated his justifications for requesting the patent, the conditions of S.13 (2)(b) had been satisfied. He believed that it was not necessary for the UK IPO to determine whether the basis was legally valid. The Patents Act provided tools for legitimate applicants to contest their eligibility for the patent. The stance taken by Birss LJ does have a logical foundation, and it may be argued that it reflects the realities of the real world in the early days of the AI era.[22]

IMPLICATIONS

An AI system cannot be named as an inventor under the current legal framework in the majority of countries, as this is contrary to the presumption that patents are invented by natural persons with human involvement, as demonstrated by the DABUS case, which tested the patentability of an AI invention in several jurisdictions. Is this method the best one? Simply put, when a human has in fact had little to no part in the creative process, the law basically promotes a falsehood. One could argue that patent offices should impose a requirement for applicants to be open and reveal the use of computers in the innovative process rather than unintentionally encourage dishonesty.[23] One could argue that patent offices should impose a requirement for

[21] Peter Dalton and Rachel Montagnon, UK Court of Appeal dismisses DABUS appeal on AI as patent inventor but dissenting judgement leaves room for possible Supreme Court appeal, HERBERT SMITH FREEHILLS (Dec. 22, 2022, 2:57 PM), https://hsfnotes.com/ip/2021/10/13/uk-court-of-appeal-dismisses-dabus-appeal-on-ai-as-patent-inventor-but-dissenting-judgment-leaves-room-for-possible-supreme-court-appeal/.

[22] OSBORNE CLARKE, https://www.osborneclarke.com/insights/court-appeals-dabus-decision-highlights-Debate-patents-ai-derived-inventions (last visited Dec. 19, 2022).

[23] Abbott, I Think, Therefore I Invent, 57 BCLR 1079, 1103 (2016).

applicants to be open and reveal the use of computers in the innovative process rather than unintentionally encourage dishonesty. Since it is doubtful that AI-invented patent applications will be granted, there is a chance that inventors may decide to rely on trade secrets instead, keeping the invention a secret and thereby weakening the concept of "patent bargain". The bargain theory of patent law is founded on the idea that an applicant should be given temporary exclusivity over an invention in exchange for disclosing it for the good of society.

However, as noted earlier, the UK Supreme Court has granted the further appeal. This implies that they believe the case has significant ramifications, which may be related to the expanding usage of AI systems in a variety of industries.[24]

G. FUTURE CHALLENGES AND SUGGESTIONS

AI systems are getting increasingly capable of independently creating inventions. However, as patent law has always been created with human actors in mind, many of its fundamental tenets do not sit well with machine invention. The author has explored this complex topic in this contribution and made an effort to provide readers with a comprehensive understanding of it in respect to the DAIBUS Case in the UK. The DABUS decision profoundly transforms how intellectual property is viewed, and it makes clear a problem that patent systems are now beginning to face: Can an AI-based invention be granted a patent?

One problem with this is that there would likely be a lot more candidates for ownership if machines were to be recognised as inventors in the future. These candidates would include the owner of the AI, the AI software's programmer, the user who specifies the tasks, the data source, and the initial observer of the result's relevance.[25]

The solution to this problem is obviously complex, therefore handling each situation individually may be the best course of action. This issue is only hypothetical at this time due to the fact that machines cannot be considered to be inventors.

Another problem is that AI systems might produce outputs using technology that has already been subject to patents; infringing conduct could result from some creative actions. Who should be held accountable when a machine employs patented technology to produce an output while functioning with a high degree of autonomy is the important question? Failure to hold those

[24] *Supra* note 8

[25] Dr. Noam Shemtov, A study on inventorship in inventions involving AI activity, EUROPEAN PATENT OFFICE (Dec. 24, 2022, 9:59 PM), http://documents.epo.org/projects/babylon/eponet.nsf/0/3918F57B010A3540C125841900280653/$File/Concept_of_Inventorshi p_in_Inventions_involving_AI_Activity_en.pdf.

responsible for such actions accountable would stimulate the use of AI systems for infringement.[26] On the other side, if liability for AI-induced infringement is upheld, several parties may be held accountable, including the machine's end user, the creator, and the AI system itself.[27] Future arguments will likely concentrate on deciding whether end users or developers should be held accountable because AI systems lack a legal personality.

It is now acceptable to say that a separate AI-IP theory has the benefit that it might be adjusted to meet the specific conditions in which AI invention emerges, as opposed to retrofitting old patent laws to accommodate emerging technology like AI.[28] But there will be consequences for recruiting investment in cutting-edge businesses if a framework for patenting AI-generated discoveries is not established. Finally, we can draw the conclusion that many intellectual property laws still use antiquated methods and thinking. These strategies must be developed further to guarantee that rules and regulations are updated to reflect the status of technology.

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[26] B. Watson, A Mind of Its Own — Direct Infringement by Users of Artificial Intelligence Systems, 58 IDEA 65, 70, (2017).

[27] World Economic Forum, https://www3.weforum.org/docs/WEF_48540_WP_End_of_Innovation_Protecting_Patent_Law.pdf (last visited Dec. 24, 2022).

[28] Amar Diwakar, Can invention enabled by artificial intelligence be patented?, TRT WORLD (Dec. 24, 2022, 3:59 PM), https://www.trtworld.com/magazine/can-an-invention-enabled-by-artificial-intelligence-be-patented-60299.