

## ARTICLE

## The Monkey Selfie, Artificial Intelligence and Authorship in Copyright: the Limits of Human Rights

PHUOC NGUYEN\*

Occasionally, a non-human being is the creator or composer of a work. Traditionally, rights over the work (ownership, authorship) are only granted to humans. By examining the case of the monkey selfie, together with the context of the current development of artificial intelligence (AI), this article examines whether it is justifiable to recognise non-humans as authors, and how this recognition could affect human rights.

### I Introduction

The right to property is not only a human right recognised under art 17 of the Universal Declaration of Human Rights 1948 (UDHR),<sup>1</sup> but is also considered a *fundamental* right in European jurisprudence.<sup>2</sup> This fundamental right attaches to the right holder regardless of that individual's awareness. This means that even if a human individual is incapable of acknowledging their rights, they can still have the status of "right holder". Several existing philosophies can serve as the basis for humans to claim the right to property, including Marxism and Naturalism. However, it is unclear whether under these philosophies non-human beings can also claim this right.

By studying the right to authorship, particularly with reference to intellectual property rights (IPRs), by which a creator can claim an unalienable moral right,<sup>3</sup> this article examines whether the status of "right holder" can be extended to non-human beings. The main aim of this article is not to argue that humans *should* grant the right to non-humans, but rather

---

\* LLM, AUT University. I would like to thank Lida Ayoubi for her suggestions and remarks on this article. This article was written as a component of the LLM programme at AUT University.

1 *Universal Declaration of Human Rights* GA Res 217A (1948).

2 Charter of Fundamental Rights of the European Union [2000] OJ C364/01 (opened for signature 7 December 2000, entered into force 1 December 2009), art 17.

3 Unless the context requires a different understanding, for most parts of this article I will use the term "right to authorship" (and in some cases the contracted form "authorship") interchangeably with "the right to be an author".

to consider the suitability of such an idea in reference to current, commonly accepted philosophical traditions. This in mind, however, the scope of this article does not allow for debates about the validity of these theories.

Looking to the case of the monkey selfie, together with the potential for artificial intelligence (AI) to exercise the capacity for creativity, I argue that it is now time to reassess the concept of “author”. The current authorship model is inapt to deal with non-human authors. Authorship was once a crucial recognition that enlarged humanity’s knowledge base at an unprecedented rate. In this era of AI evolution, AI could be optimised to help humankind to advance even further.

The scope of this article is limited to the possibility of granting the right to authorship to non-human beings only, in addition to the many other possible rights they could have. The authorship over computer-generated works in terms of using a computer program as a tool, for instance the graphical arts based on Mandelbrot set, is also a noteworthy related legal debate.<sup>4</sup> However, it is out of the scope of this article, as it only examines the creation of self-aware or sentient beings. In this article, I will use some well-known legal theories to justify this idea. However, a debate on the validity of these theories lies beyond the scope of this article.

## II The Monkey Selfie and the Contemporary Context of Intellectual Property Authorship

### A *The dispute over the authorship of the Monkey Selfie picture*

In 2011, a photograph of a Sulawesi crested macaque (later named “Naruto”) went viral on the Internet, due to debate about the photograph’s authorship.<sup>5</sup> The story began in 2008, when British photographer David Slater went to Indonesia to take pictures of these macaques. Initially, he was not very successful. He claimed that it was difficult to get close to the monkeys to take pictures, so he left his camera on a tripod in the jungle to tempt the monkeys to use the device.<sup>6</sup> Naruto was drawn to the camera and took a few pictures.

In 2011, Slater licensed several pictures of Naruto to the Caters News Agency, which published the materials to the British media on 4 July 2011.

On 9 July 2011, the pictures of Naruto were uploaded onto Wikimedia Commons—an online repository of freely-licensed educational media content.<sup>7</sup> A few days later, Slater found out and requested that the Wikimedia Foundation remove the photos. The copyright dispute began when the Wikimedia Foundation asserted that the uploaded pictures were not taken by a human author, and therefore remained in the public domain.<sup>8</sup> Wikimedia refused to remove the pictures from its repository.<sup>9</sup>

---

4 Mandelbrot set animation is the visualisation of a mathematical algorithm that results in stunning graphical arts without human interaction. See generally Darin (2001) “Copyrights in Computer-Generated Works: Whom, if Anyone, Do We Reward?”

5 Abby Ohlheiser “The monkey ‘selfie’ copyright battle is still going on, and it’s getting weirder” *The Washington Post* (online ed, Washington DC, 12 November 2015).

6 David J Slater “Sulawesi Macaques...” DJS Photography <[www.djsphotography.co.uk](http://www.djsphotography.co.uk)>.

7 “Wikimedia Commons” (11 September 2019) *Wikipedia* <<https://en.wikipedia.org>>.

8 Abby Phillip “If a monkey takes a selfie in the forest, who owns the copyright? No one, says Wikimedia.” *The Washington Post* (online ed, Washington DC, 7 August 2014).

9 Andrés Guadamuz “The monkey selfie: copyright lessons for originality in photographs and internet jurisdiction” (2016) 5 *Internet Policy Review* 1 at 5.

In December 2014, the United States Copyright Office in its jurisdiction issued the Compendium holding that “[t]o qualify as a work of ‘authorship’ a work must be created by a human being” and “[t]he Office will not register works produced by nature, animals, or plants.”<sup>10</sup>

On 22 September 2015, People for the Ethical Treatment of Animals, an American non-profit organisation that advocates for animal rights, escalated the dispute. It filed a lawsuit against Slater in the United States District Court for the Northern District of California, for exploiting the picture taken by Naruto. It demanded moral rights on behalf of Naruto. In January 2016, the Court dismissed the case, deeming that Naruto did not fit the description of an author according to the United States Copyright Act 1976.<sup>11</sup>

In 2017, the parties agreed to file a dismissal to the appeal and seek to vacate the judgment. However, the Ninth Circuit denied the motion and in 2018, the Court ruled in favour of Slater, finding that animals lacked statutory standing under the Copyright Act.<sup>12</sup>

### B *The creative capacity of AI and the development of artificial consciousness*

AI technology has taken a massive leap forward in terms of productivity and creativity. AI is expected to be more intelligent in some tasks, if not almost every task,<sup>13</sup> thanks to machine learning algorithms such as neural networks and meta learning.<sup>14</sup> AI have already demonstrated they are capable of writing poems, composing musicals,<sup>15</sup> creating new drug designs from scratch<sup>16</sup> and making natural conversation with human beings.<sup>17</sup> Admired for its intelligence, an AI that powers a humanoid robot has even been given Saudi Arabian citizenship.<sup>18</sup> These examples prove AIs have creative capabilities, belying the common conception that machines can only do what is pre-programmed.

It can be argued that although the computational power of an AI is far better than any human, there are still limitations to the intelligence of an AI where decisions cannot be

---

10 US Copyright Office *Compendium of US Copyright Office Practices § 101* (3rd ed, 2014) at 313.2.

11 *Naruto v David John Slater* 15-cv-04324-WHO (ND Cal 2016), 2016 WL 362231 at 6.

12 *Naruto v David John Slater* 888 F3d 418 (9th Cir 2018) at 418.

13 The term “intelligent” here is used to refer to the ability to learn, reason and make decisions like a human. Vincent C Müller and Nick Bostrom “Future Progress in Artificial Intelligence: A Survey of Expert Opinion” in Vincent C Müller (ed) *Fundamental Issues of Artificial Intelligence* (Springer International Publishing, Cham, 2016) 555.

14 An “artificial neural network” is a computer system that simulates the activity of a biological neural network of a biological brain, reflecting the process of thinking and deciding that happens inside the brain. Neural network design can make a computer understand abstract ideas like human languages or images. Neural network is a sub-branch of Machine Learning, a field of computer science that gives the computer the ability to learn new things outside of its pre-defined knowledge or capability. See generally Yoshua Bengio “Machines Who Learn” *Scientific American* (New York, June 2016) at 46. Evolutionary algorithms (or meta learning) could replicate biological evolution by generating processes of mutation and selection to produce a better computer algorithm. See Oliver Kramer *Machine Learning for Evolution Strategies* (Springer International Publishing, Switzerland, 2016).

15 Andres Guadamuz “Artificial intelligence and copyright” *WIPO Magazine* (online ed, October 2017) at 17.

16 “Artificial intelligence system created at UNC-Chapel Hill designs drugs from scratch” (31 July 2018) *The University of North Carolina at Chapel Hill* <www.unc.edu> at 1.

17 Kevin Reilly and Matthew Stuart “Google’s new AI can impersonate a human to schedule appointments and make reservations” (9 May 2018) *Business Insider Australia* <www.businessinsider.com.au>.

18 Andrew Griffin “Saudi Arabia Grants Citizenship to a Robot for the First Time Ever” *The Independent* (online ed, London, 26 October 2017).

based purely on calculations. Such was believed to be the case with Go.<sup>19</sup> Despite this, in 2016 an AI beat a professional Go player, not by taking advantage of its calculating power, but by watching the human's behaviour and improvising based on what it experienced.<sup>20</sup>

Not only are AI able to learn by watching, today some AI can even rewrite their own source code to improve their effectiveness.<sup>21</sup> The learning capability of AI could be improved even further with quantum computing.<sup>22</sup> It is not unimaginable that in the near future, these two fields of computer science will converge, creating self-aware AI that will be even more intelligent than their creators.

The matter of artificial consciousness is a heated debate. Where some researchers doubt it is achievable,<sup>23</sup> others argue that artificial consciousness could be created,<sup>24</sup> and still others argue that AI could embody a different form of consciousness than humans.<sup>25</sup> However, for the sake of argument, let us imagine there has already been a sophisticated AI that can pass the Turing test and is self-aware.<sup>26</sup> It is doubtful whether if it demands ownership or authorship for itself, we could still treat it like a simple machine, turn it off and ignore its requests for recognition of its rights.

### C *The issue of the current model of authorship*

The above-mentioned situations are just part of a bigger problem: the use of the term "authorship" in intellectual property (IP) law systems always refers to human authors. There are, however, many other non-human beings that are capable of creation. In the *Naruto* case, I agree with the final verdict of the Ninth Circuit Court. As it stands, the authorship of a non-human being is not compatible with current IP law systems. However, the question of authorship over the monkey selfie should be reconsidered.

Assuming an individual who sets up a tool that autonomously creates media content shall be rewarded for all the works created by that tool, then Slater can be granted authorship for this picture. This assumption can also justify authorship for time-lapse photography where the photographer does not directly press the capture button for all the pictures taken. But if another human interferes with the process, for instance by pressing the capture button and creating an additional picture, the person who set up the

---

19 Go is a Chinese board game which has approximately  $10^{170}$  possible board configurations (for reference, this is more than the number of atoms in the observable universe). Go was used to test the intelligence of an AI because the AI has to continuously improvise according to the moves of its competitor: Christof Koch "How the Computer Beat the Go Master" *Scientific American* (online ed, 19 March 2016).

20 Koch, above n 19.

21 Kramer, above n 14, at 113–115; and Galeon Dom "New AI Can Write and Rewrite Its Own Code to Increase Its Intelligence" (16 February 2017) *Futurism* <<https://futurism.com>>.

22 See Vedran Dunjko, Jacob M Taylor and Hans J Briegel "Quantum-Enhanced Machine Learning" (2016) 117 *Phys Rev Lett* 130501–1 at 130501–1.

23 See Jinchang Wang "Unachievable Consciousnesses on Electronic Robots" (paper presented to Northeast Division of the Decision Sciences Institute 2018 Annual Conference, Rhode Island, April 2018) 839 at 850.

24 See generally Antonio Regalado "What It Will Take for Computers to Be Conscious" (2 October 2014) *MIT Technology Review* <[www.technologyreview.com](http://www.technologyreview.com)>.

25 Subhash Chandra Pandey "Can artificially intelligent agents really be conscious?" (2018) 43 *Sādhanā* 1 at 14.

26 The Turing test (named after Alan Turing, an English mathematician and computer scientist) determines if a machine can exhibit intelligent behaviour to a degree indistinguishable from that of a human. *The Stanford Encyclopedia of Philosophy* (Spring 2019, online ed) The Turing Test.

device would not be credited for all the pictures stored in the camera's memory, because amongst the photographs taken as intended by the first person, there is one picture taken by another human.<sup>27</sup> If we take the second person away and replace them with a chimpanzee, why should this change the argument's logic?

In the second case, even though current AI are not capable of self-awareness and therefore do not demand rights for themselves *yet*, the identity of the true author of the work is still a valid legal debate. Traditionally speaking, the creations of AI could arguably belong to the person who takes steps to make the programme work. This is the United Kingdom's legal approach.<sup>28</sup> Alternatively, creation could belong to the AI's owner, according to the "work-for-hire doctrine" that was examined by many scholars, including Catherine Fisk.<sup>29</sup> However, several individuals might be involved in the creation of an AI, and therefore the concept of an AI owner and ownership over an AI's work is much more complicated.<sup>30</sup> Apart from these complications, if AIs become sentient it may not be ethical for humans to continue to claim the title of author over the AI's work.

### III The Copyright of Non-human Authors

The focus of this section is whether, in reference to the origin of authorship and philosophy underlying the right to property, it is justifiable to grant authorship to non-human beings.

#### A *The development of copyright and authorship*

##### (1) A brief overview of Western models of copyright and authorship

The origin of the term "copyright" in Europe can be traced back to the Middle Ages,<sup>31</sup> when the invention of the moveable type in the 14th century led to a surge in the number of books printed.<sup>32</sup> This fast expanding industry demanded protection of the right of the publisher, hence the term "copyright" appeared in the term "Stationer's copyright", which literally meant "the right to copy".<sup>33</sup> In the common law system, the term "copyright" was first used in the Statute of Anne, enacted in 1710. This was an important development in copyright as it recognised the right of the author and removed the monopoly on the right to copy from the historic Stationers' Company, a move later adopted by the copyright law of other Western countries.<sup>34</sup>

---

27 If the setup person intentionally creates a scheme where they want other people to be involved in the act of taking a picture, then the first individual [the person who sets up the scheme] shall be credited: *Celebrity Pictures Ltd v B Hannah Ltd* [2012] EWPC 32, [2012] All ER (D) 208 (Jul).

28 Copyright, Designs and Patents Act 1988 (UK), s 9(3).

29 Catherine L Fisk "Authors at Work: The Origins of the Work-for-Hire Doctrine" (2003) 15 Yale JL & Human 1.

30 Abu Sadat Md Sayem Ali Pathan "Can Artificial Intelligence claim IP-ownership?" (29 May 2018) The Daily Star <www.thedailystar.net>.

31 Ronald V Bettig *Copyrighting Culture: The Political Economy of Intellectual Property* (Westview Press, Oxford, 1996) at 15.

32 At 17.

33 Lyman Ray Patterson *Copyright in Historical Perspective* (Vanderbilt University Press, Nashville, 1968) at 4-5.

34 Sam Ricketson "The 1992 Horace S Manges Lecture — People or Machines: The Berne Convention and the Changing Concept of Authorship" (1991) 16 Colum-VLA JL & Arts 1 at 4-5.

Under the Anglo-American model of copyright, authorship is a mere means to provide the author with a sufficient amount of interest to encourage them to contribute to society.<sup>35</sup> Under the United States Constitution and the first American copyright Act of 1790, authorship protection was just a means of furthering public education.<sup>36</sup>

Germany initially had a different perception about authorship from that in the United Kingdom. From the “natural right approach”, ideas were perceived as “an embodiment of truth that belonged to the public”.<sup>37</sup> Therefore, authors of those ideas were honoured for their contribution but not remunerated adequately.<sup>38</sup> This approach, however, still recognises the moral right of the author as creator of the work.

By contrast, in the French copyright model, the author is protected for their creation because of a “bond” between the author and their creation, and the public interest should not outweigh that of the author.<sup>39</sup> French copyright is, however, still built on the idea of natural rights,<sup>40</sup> and uses the “fruit of labour” theory (explained further in Part B2 below) to explain property rights.<sup>41</sup>

## (2) Authorship in Berne convention and modern legal instruments

The term *authorship* is defined in the Cambridge Dictionary as “the state or fact of being the person who wrote a particular book, article, play, etc.”<sup>42</sup> While at a national level, the definition of “author” is often associated with a person and is implied to be a human right holder,<sup>43</sup> no definition of this term can be found in any common international legal instrument.<sup>44</sup> Without a clear universal legal definition, it is difficult to tell whether a non-human being can be granted the status of “author”.

In a 1992 lecture, Professor Sam Ricketson affirmed that the Berne Convention for the Protection of Literary and Artistic Works (Berne Convention)<sup>45</sup> did not define the term “authorship”, though in essence this term is used to describe human ownership. We can tell it tends to describe *human authorship*.<sup>46</sup> However, Ricketson argues that the

---

35 Jane C Ginsburg “A Tale of Two Copyrights: Literary Property in Revolutionary France and America” (1990) 64 Tul Law Rev 991 at 993.

36 At 1001.

37 Kathy Bowrey “Law, aesthetics and copyright historiography: A critical reading of the genealogies of Martha Woodmansee and Mark Rose” in Isabella Alexander and H Tomás Gómez-Arostegui (eds) *Research Handbook on the History of Copyright Law* (Edward Elgar Publishing, Cheltenham, 2016) 27 at 30.

38 At 30.

39 Desbois M Henri “Le droit d’auteur en France” (3rd ed, 1978) as cited in Ginsburg, above n 35, at n 7.

40 At 1014.

41 At 1019.

42 “Meaning of authorship in English” Cambridge Online Dictionary <[dictionary.cambridge.org](http://dictionary.cambridge.org)>.

43 Copyright Act 1994, s 5; Copyright, Designs and Patents Act 1988 (UK), s 9; Law on Intellectual Property 50/2005 (Vietnam), art 13(1).

44 The International Committee of Medical Journal Editors’ exclusion of a definition for “author” received a lot of criticism relating to recognition of co-authorship in medical research. For instance, it was deemed unethical and illogical (David Shaw “The ICMJE’s definition of authorship is illogical and unethical” (2011) 343 BMJ 1), or it set unrealistic standards to recognise collaborative authorship. See also Jaime A Teixeira da Silva “The ethics of collaborative authorship” (2011) 12 EMBO Rep 889.

45 Berne Convention for the Protection of Literary and Artistic Works 1161 UNTS 3 (opened for signature 9 September 1886, revised at Paris 24 July 1971).

46 Ricketson, above n 34, at 3; and Jane C Ginsburg “People Not Machines: Authorship and What It Means in the Berne Convention” (2018) 49 IIC 131 at 131.

difference in recognition of authors of cinematographic works in the drafting of the Berne Convention hints that a non-natural person *could* be an author.<sup>47</sup> It is nearly impossible to tell exactly what the drafters' approach was, but from a historical viewpoint, most scholars agree there are two rationales to copyright protection: either to protect a form of natural rights, or to serve the public good.<sup>48</sup>

In light of art 15(1)(c) of the International Covenant on Economic, Social and Cultural Rights (ICESCR) and its context,<sup>49</sup> it is safe to assume that this instrument only protects *human* authors.<sup>50</sup> As explained in the Committee on Economic, Social and Cultural Rights (CESCR) General Comment 17, the purpose of authorship as a moral right is to “enable authors to enjoy an adequate standard of living”, and the right to authorship is one of the human rights that is distinguished from other legal rights recognised in the IP system.<sup>51</sup>

Authorship is also not defined in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). This is because the aim of this agreement was not to redefine IPRs but rather to promote the protection of IPRs to a universally adequate level.<sup>52</sup>

### B *Could non-human authorship be justified?*

Although there appears to be little support for non-human authorship in legal texts on the origins and development of copyright law, nevertheless there are some notions in legal philosophy that could be interpreted in favour of non-human authorship.

#### (1) Non-humans as judicial subjects

In order for non-human beings to be granted the specific right called authorship, they must be able to possess any legal rights at all: the question, in technical terms, is whether they can be judicial subjects.<sup>53</sup> For this purpose, I will examine the suitability of the non-human right holder model in the two contrasting schools of thought of Marxism and Naturalism.

Marxist legal theory<sup>54</sup> holds that laws are the system of norms officially issued by the ruling class to regulate social relationships. This system of norms empowers the subjects of the law with rights, and binds them with obligations.<sup>55</sup> Judicial subjects include individuals and non-human entities such as “legal persons” (organisations created by

---

47 Ricketson, above n 34, at 14–17.

48 At 4.

49 International Covenant on Economic, Social and Cultural Rights 993 UNTS 3 (opened for signature 16 December 1966, entered into force 3 January 1976), art 7.

50 While art 15(1)(c) specifically recognises the right of *everyone* to benefit from the protection of moral and material interests from the copyrighted work; it was stated in the preamble of the ICESCR that this document recognises the rights of human person.

51 *Substantive Issues Arising in the Implementation of the International Covenant on Economic, Social and Cultural Rights* 27 UN Doc E/C.12/2001/15 (14 December 2001) at [6].

52 Agreement on Trade-Related Aspects of Intellectual Property Rights 1869 UNTS 3 (opened for signature 15 April 1994, entered into force 1 January 1995), preamble.

53 I borrow the term “judicial subject” from Marxist legal theory to refer to any subject that has legal rights and/or obligations as stipulated by law.

54 While Marxism itself is not a jurisprudential philosophy, within this article I use the term “Marxist legal system” to refer to the legal systems built on the Marxist perspective of socioeconomics (including modern variants like Vietnam’s socialist-oriented market economy viewpoint).

55 Hugh Collins *Marxism and Law* (Clarendon Press, Oxford, 1982) at 27.

humans).<sup>56</sup> From a Marxist perspective, any right a subject might possess is granted by the law (which is itself created by the government to maintain social order), including any human rights such as rights to ownership and authorship.<sup>57</sup> For example, under the Vietnamese Civil Code, property rights are those rights that are able to be valued in money.<sup>58</sup> These rights are recognised by authority in the legislation, granting the subject of the rights specific actions such as “[t]o give titles to their works” or “[t]o attach their real names or pseudonyms to their works.”<sup>59</sup>

Depending on the interpretation of Marxism, it is debatable whether Marx advocated for human rights at all, especially moral rights.<sup>60</sup> However, it is safe to assume that, in this legal model, only humans and entities that are controlled by humans can have rights (that is, be a judicial subject).<sup>61</sup> Rarely, where the survival of a non-human species is threatened, the law can restrict the rights of humans to exploit natural resources.<sup>62</sup> This restraint does not mean that the law recognises *any* legal right of other species—rather, it is just a protection for the long-term sustainable progression of humankind.

By contrast, John Finnis explains that in natural law theory, human rights are natural.<sup>63</sup> Both the nature and the content of the right are defined by the natural order. Even though Finnis himself did not advocate for animal rights,<sup>64</sup> his explanation of the relationship between human rights and legal rules is convincing—any right is the benefit secured for persons by the rules,<sup>65</sup> and the rules “specifically recognise and respect a person’s choice”.<sup>66</sup> This means that while human rights come from within an individual, the law is the means to ensure that these benefits are recognised by others. It sanctions individuals who do not follow the rule of law, for the common good.<sup>67</sup> In short, human rights are intrinsic, not given to humans by the law.

In this naturalistic tradition, the justification for rights that come from within an individual derives either from the divinity that God gave the human species specifically,<sup>68</sup> or from the natural good of humans.<sup>69</sup> Leaving aside the more spiritual former justification, since that is less amenable to legal analysis, I suggest that if humans have a quality of natural good that is not granted by God, but rather through the natural order,

---

56 See generally Evgeny B Pashukanis *Obshchaia teoriia prava i marksizm: Opyt kritiki osnovnykh iuridicheskikh poniatii* (Moscow, 1924) (translated ed: Barbara Einhorn (translator) Chris Arthur (ed) Evgeny B Pashukanis *Law and Marxism: A General Theory* (Pluto Publishing, London, 1989)).

57 At 109-110.

58 Civil Code 91/2015 (Vietnam), arts 105(1) and 115.

59 Law on Intellectual Property 50/2005 (Vietnam), art 19.

60 Justine Lacroix, Jean-Yves Pranchère *Karl Marx Fut-il vraiment un opposant aux droits de l’homme?* (2012) 62 *Revue française de science politique* 433 at 433 (translated ed: Sarah-Louise Raillard (translator) Justine Lacroix, Jean-Yves Pranchère *Was Karl Marx truly against human rights?*).

61 Alan Hunt “Marxist theory of law” in Dennis Patterson (ed) *A Companion to Philosophy of Law and Legal Theory* (Wiley Blackwell Publishers, Oxford, 2010) 350 at 357.

62 Law on Natural Mineral 2010 (Vietnam), art 66.

63 John Finnis *Natural Law & Natural Rights* (2nd ed, Oxford University Press, 2011) at 198.

64 Gary Chartier “Natural Law and Animal Rights” (2010) 23 *Can JL & Jur* 33 at 33.

65 Finnis, above n 63, at 203.

66 At 204.

67 At 276.

68 John Locke *Two Treatises of Government* (Lee Ward (ed), Hackett Publishing Company, Indianapolis, 2016) at 135.

69 The term “good” as in “human good” used by Finnis, above n 63, is very complex. For the purpose of this article, I treat the term “good” as equivalent to “inner value”.



then any being that exists in this material world could possibly have the quality of natural good as well. A sentient being which has a natural good cannot be deprived of its natural rights, not only because it is the natural order that humans as sentient beings are entitled to certain rights, but because it is morally wrong to degrade the good of any other sentient being.<sup>70</sup>

Presuming that non-human beings can be judicial subjects does not mean that human laws must protect all the rights of all non-humans, because although it is important to recognise the rights of other species as natural and undeniable, if human rights are threatened human law should prioritise human benefit. Indeed, while the Marxist and Naturalist legal philosophies are very different, they share the idea that the goal of rights is to help humanity as a whole to flourish,<sup>71</sup> and any response has to, therefore, benefit the greatest good for the greatest number of humans. Indeed, utilitarianism, by which this principle is known, is still an important consideration affecting the approaches of both Marxist and Naturalist legal approaches.<sup>72</sup>

It should also be taken into account that several unusual subjects have already been recognised as “legal persons” and judicial subjects, including a river<sup>73</sup> and a robot.<sup>74</sup> Even though these phenomena are exceptional, they demonstrate that the notion of a “right holder” is not necessarily fixed and that, where justified, we can change the conception of “judicial subject” to include non-human entities. Since non-human entities have thus already been granted some rights, it seems a matter open for further debate whether any legal rights may be granted to non-human *species* as well.

## (2) Non-humans as intellectual property rights holders

Having now examined the suitability of the non-human right holder model in the two philosophical traditions of Naturalism and Marxism, in this section I will discuss why humans and non-humans alike can claim authorship over intellectual property. My argument is based on the “fruit of labour” theory, which, in fact, despite their many differences both Marxist and natural law theory share in common to explain the right to property (albeit to different ends).<sup>75</sup>

English philosopher John Locke’s natural rights theory offers one of the most well-known notions of the “fruit of labour” theory:<sup>76</sup> since a person is naturally born free and capable of ownership, if the labour is made by that person’s body and hand, then the

---

70 Finnis, above n 63, at 83–84.

71 At 205.

72 David Braybrooke “The Relation of Utilitarianism to Natural Law Theory” (2003) 12 Good Soc 43 at 43. To be precise, Marxist legal theory does not directly favour utilitarianism. However, it recognises the dynamic between the law and the economy (where the law should improve the economy and vice versa). See Hunt, above n 61, at 63.

73 Te Awa Tupua (Whanganui River Claims Settlement) Act 2017.

74 Griffin, above n 18.

75 While John Locke used the “fruit of labour” theory to prove that the right to property was a natural right, Marxism, in its socioeconomic analysis, used the “fruit of labour” theory to explain why the personal property regime should be removed. Nevertheless, the justification for acknowledging one’s labour as personal property is essentially the same.

76 John Locke (1632–1704) was an English philosopher famous for the ideas that set the foundation for modern liberalism. It is noteworthy that Lockean natural law is not entirely based on the classic viewpoint of natural law theories such as Aquinas’: Steven Forde “Natural Law, Theology, and Morality in Locke” (2001) 45 Am J Pol Sci 396 at 397–398.

property produced by that labour is properly theirs.<sup>77</sup> In Lockean labour theory, therefore, labour can turn common resources into private property.<sup>78</sup> This contention may be seen in contrast to the German idea that knowledge belongs in the public domain:<sup>79</sup> under Lockean theory, even if an item of information is commonly known, the person who undertakes the labour to put that knowledge into a book can still claim ownership of the content of that book.

Copyright protection is a notion that came much later. It can hardly be described as a natural right according to the Lockean viewpoint.<sup>80</sup> But, as per Lyman Patterson's explanation, copyright is a *natural law right*,<sup>81</sup> and, therefore, should inherit the "fruit of labour" justification. The construction of the copyrighted items can explain their natural characteristic. IP is not something that would exist without the labour of an author or authors. The bond between the author and the creation is a reality—a truth that can never be changed in its nature (though it can be disguised or misinterpreted).<sup>82</sup>

The relationship between the right to ownership and tangible property is similar to that between the right to authorship and works of art. In either case, the individual who has the right can have full control over their creation. While we can argue that ownership and authorship are different in many ways (for example, only ownership can be transferred to another individual), the title of the first owner who actually created a property is very similar to that of an author. This idea is also incorporated in some jurisdictions. For example, s 13(1) of the Canadian Copyright Act recognises "the author of a work shall be the first owner of the copyright".<sup>83</sup> This similarity reflects the "fruit of labour" theory in copyright law.

We must acknowledge that in collaborative works, the justification for ownership and authorship is more complicated. For instance, in cinematographic works, joint authorship is more complex. The contribution of each content creator (for example, music tracks and special effects) should be accounted for. However, under the Berne Convention, the owner of copyright is the only one who can enjoy the right of authorship.<sup>84</sup> Based on the "fruit of labour" theory, anyone who makes an effort to create a work could, from the natural law perspective, earn the title of "author" of that work. Interestingly, even a corporate entity can be the author of a cinematographic work, which recognition firmly supports the possibility of non-human authors.<sup>85</sup>

Moreover, looking back to the history of the "work-for-hire" doctrine, we can see that originally an employee could claim authorship even if working under a labour contract with an employer.<sup>86</sup> Fisk suggests that the modern hire doctrine (which protects the employer's authorship) is reversible.<sup>87</sup> This suggestion comes from the idea that morally the employee should have some connection with their work. I argue this suggestion is applicable for any

---

77 Locke, above n 68, at 135.

78 Aparna Gollapudi "Personhood, Property Rights, and the Child in John Locke's *Two Treatises of Government* and Daniel Defoe's Fiction" (2015) 28 ECF 25 at 32.

79 Bowrey, above n 37, at 30.

80 Bettig, above n 31, at 19–20.

81 Patterson, above n 33, at 70.

82 At 70–71.

83 Copyright Act RSC 1985 c C-42.

84 Berne Convention for the Protection of Literary and Artistic Works 1161 UNTS 3 (opened for signature 9 September 1886, revised at Paris 24 July 1971), art 14.

85 Ricketson, above n 34, at 16.

86 Fisk, above n 29.

87 At 68.

work that included non-human labour, meaning that if an AI were to work for a human it could theoretically still earn the right to authorship of that work.

*C Should humans grant authorship to non-humans?*

As we have seen, then, Marxist legal theory is not fully compatible with the idea of granting rights to non-human subjects. Natural law theory, however, can be interpreted in a way that supports the protection of rights, particularly IPRs for non-humans. Since the right to property, IPRs included, is a fundamental human right under the UDHR, then from a naturalist approach it should be the basic right of any other species possessing human-like characteristics such as self-awareness and the capacity for causal reasoning.

According to Locke, even if labour is made under a master-servant relationship, a “free-man” must be entitled to a wage.<sup>88</sup> If we translate this “free-man” into a broader context of “free beings”, an animal that creates a work under its own will should be rewarded with the right to authorship over its creation. Under this approach, the work-for-hire doctrine can be considered invalid, and authorship should be granted to the original creator.

Admittedly, Locke was a political economist whose aim was not to liberate any non-human being but rather to display and encourage contempt for the monarchy during the 17th century, the period in which he lived.<sup>89</sup> However, his argument for the right to property is still valid if we replace a human with a different sentient being. The notion of a wage in Lockean natural rights does not emphasise the remunerative aspect of labour, but instead the moral standpoint, that is, the respect for the individual who made the labour.<sup>90</sup>

In terms of copyrighted work, I suggest that this respect should not be based on the status of the author as a human or non-human. An explanation of the purpose of copyright law and the form of discrimination known as speciesism bolsters this argument.

(1) The purpose of copyright law

Although it is reasonable to say that copyright was originally invented to protect the interests of the publishers more so than authors and different legal theories afford different levels of protection for authorship, there are generally shared in common two main reasons for giving the author the title of authorship: first, to acknowledge the effort that the individual has made to create work; and secondly, to remunerate that person with at least a sufficient amount of interest.<sup>91</sup> While the former reason can be an inspiration to people who do not only want to be remunerated but also want to be acknowledged as a scholar, the latter one will safeguard the material interests of an author, encouraging them to contribute further to the common value of society in this way.

While both purposes are important, I believe the former can be used to justify non-human authorship. Indeed, it seems appropriate that if we recognise the effort of a human author in creating a work by granting them moral rights, we would do the same for a non-human author who has similarly put in effort in creating their work. In other words, where copyright law was created at least in part to recognise the effort of an author, there is no

---

88 John F Henry “John Locke, Property Rights, and Economic Theory” (1999) 33 J Econ Issues 609 at 617-619.

89 At 613.

90 Amir H Khoury “Intellectual Property Rights for ‘Hubots’: On the Legal Implications of Human-Like Robots as Innovators and Creators” (2017) 35 Cardozo Arts & Ent LJ 635 at 652.

91 Ginsburg, above n 35, at 1023.

good reason to draw a distinction between a human and non-human author where both have done so.

## (2) Authorship and speciesism

In this section, I discuss whether it is discriminatory to deny authorship to non-human beings, with reference to “speciesism”.

Speciesism has been defined as “the unjustified disadvantageous consideration or treatment of those who are not classified as belonging to one or more particular species”.<sup>92</sup> Thus, speciesism can be argued to be a form of discrimination.<sup>93</sup> Indeed, one such instance of discrimination is when humans assume that only their kind can possess rights to property, particularly the right to authorship. This discrimination arguably comes from the notion that human beings are the only sentient creatures, and that only a sentient species can have and should have rights. Although it might be argued that discrimination against other species is justifiable, since it would ultimately protect human rights where they collide with the rights of other less-intelligent beings, this reason is not rational when we consider the prospect of encountering a species more intelligent than ourselves.

Besides the case of Naruto, there are many other instances that show that humans normally have human-biased views towards authorship. For example, the United States Ninth Circuit Court still favoured human authorship even where the original content is believed to have belonged to a celestial being, as long as the human contribution was minimally adequate.<sup>94</sup> Further, a human being’s right to authorship extends to a situation where the author is not even aware or denies acknowledgement of their creation: no one can deny the authorship of a patient with schizophrenia or dissociative identity disorder who “genuinely” believes that they did not do the work. The authorship a schizophrenic or multiple personality disorder patient has over a work they believe they did not produce. The rationale behind denying the right to authorship to other beings that are currently not capable of acknowledging its work appears to be on the discriminatory basis of speciesism.

While in many cases speciesism can be beneficial to humankind, I suggest that in other cases it could be a problem. Since humans can easily ignore the right of non-intellectual animals, when it comes to the case of another sentient being this discrimination becomes problematic, as it was in the case of Naruto. History, evidenced particularly in the atrocities of colonialism globally, has repeatedly shown that when one society meets another which it believes to be less developed, the latter is likely to be endangered. Therefore, we should be very careful of speciesism in considering the rights of a super-intelligent AI if such ever comes to appear.

## IV Recognition of Non-Human Authorship Interrelated with Human Rights

There might be various impacts on human rights if we accept non-human authorship. These could include an impact on the right to education (due to copyright protection of non-human works) or the right to health (because of the protection of drug patents). However, given the limited scope of this article, and for demonstrative purposes, I will assess two aspects of adverse effects: the decline in the benefits to human authors relative

---

92 Oscar Horta “What is Speciesism?” (2010) 23 J Agric & Environ Ethics 243 at 247.

93 At 247–248.

94 *Urantia Foundation v Maaherra* 114 F 3d 955 (9th Cir 1997) at 958.

to the recognition of non-human competitors, and the negative impact on the protection of human rights in general. I argue that the undesired effects on human rights can be negated by an amendment to the current IP system.

*A The adverse impacts on human authors' rights*

Accepting non-human authorship means that the recognition of human labour included in a non-human authored work is reduced. This will not only affect the crediting of the human involved in creating such work, but also lessen their potential to exploit the work. If a work was previously fully credited to an individual and is now credited to an additional one, then the total credit is split between the authors. Not only is the reputation for creativity of the human author reduced, the amount of material interest that they could earn is also less.

Additionally, beings such as sentient AIs will potentially produce much more creative output than their human counterparts, as they might not have the same negative emotions that could affect their creative output.<sup>95</sup> Calculating power and simulating power are huge advantages of AIs in terms of creative output because they can explore a much wider range of trial and error runs. This could lead to a crisis for human competitors, especially for artists and composers who rely entirely on their creative output to make a living. Allowing this one-sided competition is not a direct violation of the right to work as stipulated in art 6 of the ICESCR, but it could severely reduce the opportunity for human authors to pursue their desired profession.

More importantly, at a worldwide level, the acknowledgement of non-human rights could detrimentally affect recognition of many human rights. Creating new rights for non-humans demands a further restriction on the freedom of everyone in society; any newly recognised right imposes a duty on others to respect it.<sup>96</sup> For example: land without an owner can be crossed or used by anyone; however, if it is allocated to an individual as a new right, then the rest of the community can no longer freely walk on it. Thus, theoretically speaking, many fundamental human rights including the right to health<sup>97</sup> and the right to education<sup>98</sup> could be affected if non-human authors abuse the right of disclosure by choosing not to disclose the work to the public.<sup>99</sup>

Overall, recognising authorship for non-humans sets a dangerous precedent because the more rights non-humans have, the more restrictions on human rights we must establish. I do not object to this view. However, we must consider that in the future it is possible that humanity will encounter non-human sentient beings and if we do not tread carefully in recognising the rights of such beings, a serious conflict of interests could arise.

---

95 Keith James, Marc Brodersen and Jacob Eisenberg “Workplace Affect and Workplace Creativity: A Review and Preliminary Model” (2004) 17 *Human Performance* 169 at 170. See Tamlin S Conner and Paul J Silvia “Creative Days: A Daily Diary Study of Emotion, Personality, and Everyday Creativity” (2015) 9 *Psychology of Aesthetics, Creativity, and the Arts* 463. Negative emotions affect creativity in different way in different situation. Certain types of negative emotions could reduce creativity.

96 Finnis, above n 63, at 8.3.

97 *Universal Declaration of Human Rights*, art 25(1).

98 Article 26.

99 Under the right to disclose work, the author can determine if and when to display the work to the public: Henry Hansmann and Marina Santilli “Authors’ and Artists’ Moral Rights: A Comparative Legal and Economic Analysis” (1997) 26 *J Leg Stud* 95 at 136.

The scope of this article does not allow discussion of all the eventualities of choosing to recognise non-human authorship. However, if we ever decide to do so, we will need a different authorship system.

### *B A different authorship system is needed*

The creative capability of non-humans is not only a problem to human authors but also creates a problem with recognising such work in the current IP law system.

It would be challenging to apply the current standards of originality to the work of an AI, as an AI can create new designs much faster than a human counterpart. From an original idea, an AI can create many deviations, each only slightly different from the other. In this case, it would be difficult to decide which work is original enough to be copyrighted. On the other hand, in the case of Naruto, the content of the selfie picture did not come from the imagination or creativity of Slater, but rather the posing of the monkey itself. It seems unfair that if another monkey were to adopt the same pose and take a picture for itself just like Naruto did, we would register the first monkey as an author of a copyrighted work and not do the same to the second monkey—particularly since we could not tell the second monkey not to infringe the copyright of the first! The acceptability of commercially mass printing and selling such works for profit is even more complicated.

As analysed, the current IP law system is not sophisticated enough to deal with the authorship of non-human beings. If we are to acknowledge the creation of an AI or any being that is more intelligent or creative than humans, we need to classify it into a different category of authorship. Within this article, it is impossible to develop a fully functional framework for non-human authorship. However, subject to considerations such as cost-effectiveness, acceptance from the public and compatibility with the current IP law system, with certain principles in mind we can create a system that can overcome these obstacles:

- (1) This secondary copyright system would recognise all works created by non-humans, regardless of the originality of the works; and
- (2) Depending on the contribution, authorship and material interests relating to non-human works, the copyright could be associated with the human who contributes to the creation of the works.

### *C Recognition of non-human authorship can contribute to the expansion of human rights*

The concept of human rights is all about protecting humankind, but it is difficult to precisely define “human”. With current developments in AI technology as well as many other scientific fields, such as neuroscience and bioscience, the line between human and non-human will become only more difficult. Accordingly, I argue that human rights should include the rights of human-like beings, which result from technology development. AI is one example.

It is possible that humankind could evolve into something that is not exactly a “human” by normal concepts and standards. For example, if one day humankind settles on Mars, but to survive the harsh conditions, a human individual had to bioengineer their DNA, would that person retain their humanity? If we could upload our mind into a computer

when our physical bodies degrade, would that consciousness have any human rights? <sup>100</sup> Perhaps we could attribute “humanness” not to some specific material body nor to an incorporeal consciousness, but instead to an entity who contributed to society as a sentient being and whose humanness could therefore be retained no matter what state they attain.<sup>101</sup>

However, looking in the other direction of human development, it is unclear a Neanderthal resurrected today would have the rights of a homo sapiens. If we are going to differentiate based on biological difference, then, biologically speaking, what makes humans human is somewhat similar to a computer programme (specifically AI). While a human being is a collection of cells made from combinations of A-T and G-C pairs of nucleobases, an AI is basically a sequence of zeros and ones. Through natural selection, humankind has developed its consciousness and intellect, and through technological advances, a piece of code can gain that too.<sup>102</sup> Scientifically speaking, humans are not so special or unique that we deserve fundamental rights that cannot be granted to any other sentient life form. Denying fundamental rights to other sentient beings is nothing more than speciesism.

Extending authorship to non-humans can be the first step toward recognition of non-human sentient beings. This will be insurance for future generations of humans who digitally or biologically evolve into something different than homo sapiens. Further, considering that we do not yet know what the attitude of sentient AI will be toward humanity, it would be better that we welcome them with compassion and equality. If the first sentient AI is like a child, it will look to the actions of its creator. We must therefore teach AI to respect human values.<sup>103</sup> This is probably the best way to ensure the survival of humanity in the AI era, protecting arguably the most fundamental human right: the right to life.<sup>104</sup>

## V Conclusion

Many AI experts believe that the question regarding AI evolution is not whether it will become sentient, but rather when this will happen. A 2015 survey of AI experts showed that most of those surveyed believed that it would not be until the next decade before AI could beat a human in Go. Only two years later that goal had been achieved.<sup>105</sup> This is evidence that AI could be evolving much faster than current predictions.

While the monkey selfie and AI evolution are two distinct events, they both reveal a weakness in current jurisprudence dealing with non-human rights. This is particularly true in relation to the right to authorship. From a legal perspective, we must anticipate the

---

100 Research showed that it could theoretically be possible to scan and upload the neural signals in a brain into a computer, thus creating a consciousness within a computer without programming: Fiona Macdonald “Scientists Put a Worm Brain in a Lego Robot Body — And It Worked” (11 December 2017) Science Alert <[www.sciencealert.com](http://www.sciencealert.com)>.

101 From a religious and philosophical perspective, Marcelo Sánchez Sorondo in “The Status of the Human Being in the Age of Science” (2008) 32 *Pontificia Academia Scientiarum* 5 at 10 agreed with this idea.

102 See Kramer, above n 14, at 2.2.

103 Nell Watson “Questions and Comments on Machine Intelligence” (2014) <[www.nellwatson.com](http://www.nellwatson.com)>.

104 *Universal Declaration of Human Rights*, art 3.

105 “Experts Predict When Artificial Intelligence Will Exceed Human Performance” (31 May 2017) MIT Technology Review <[www.technologyreview.com](http://www.technologyreview.com)>.

consequences of this AI evolution and account for them in our legal instruments. This process could take as long as eight years, as the TRIPS did. It could even be lengthier.<sup>106</sup> Indeed, there is a probability that by the time negotiations among humankind are completed, AI will have already achieved superintelligence.<sup>107</sup>

While neither current legal frameworks nor legal theory effectively cover the right to authorship of non-humans, there are aspects of ideas which could support this implementation. Admittedly many factors might affect the granting of rights for AIs and other sentient beings, such as ethical concerns and the acceptance of utilitarianism. However, I firmly believe that from the natural right point of view, there is basis for the recognition of rights of non-human beings.

Such radical jurisprudential change could be comparable to that when humans abolished the institution of slavery, thus ending relationships of human possession over other human beings. I doubt that anybody in this modern world would question the rationale of that liberalism movement. The same might be said when the people of the future look back to the non-human rights movement. The law and legal theories are not predetermined, and therefore so long as they are justifiable, there exist many other ways to interpret the law in advocating for non-human rights.

In doing this, there could undoubtedly be many adverse outcomes for human rights. This is particularly true of the rights of human authors. However, with proper assessment and planning, we could integrate the rights of other sentient beings into our legal framework without severely hampering the freedom of humankind. Viewed optimistically, the integration of AI into human society is inevitable and could “bring out the best in human civilisation”.<sup>108</sup> We should prepare for the coming of the next generation of AI, which includes accepting the possibility of extending rights of authorship to non-humans.

---

106 While the draft of the TRIPS agreement itself was mostly finished by 1992, the Uruguay round where it was negotiated took place from 1986 to 1994 and it was adopted into the Marrakesh Agreement as the foundation of World Trade Organization in 1994. Matthijs Geuze “Some memories of the unique TRIPS negotiations” in Jayashree Watal and Anthony Taubman (eds) *The Making of the TRIPS Agreement: Personal insights from the Uruguay Round negotiations* (World Trade Organization, Switzerland, 2015) 123 at 124.

107 A superintelligent AI is an AI that can outperform its human counterparts in understanding the world, creating, and solving problems. See Catherine Jewell “Bringing AI to life” (2018) WIPO Magazine <[www.wipo.int](http://www.wipo.int)>.

108 Jewell, above n 107.