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CREATION, COMMERCE, CONFLICT, & CONSCIENCE: AI'S DISRUPTION ON EXISTING IP FRAMEWORKS IN THE UNITED STATES AND CANADA

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ABSTRACT

In the United States and Canada, the legal framework for defining and protecting intellectual property (IP) rights has largely fallen under copyright, trademark, and patent legislation. Traditionally, the requisite requirement for IP protection was that a human contributed to creating the IP. However, the advent of artificial intelligence (AI) disrupts the existing IP frameworks. AI and machine learning systems create original IP by analyzing vast quantities of data. From there, data sets are combined, forming new IP. Without a human's contribution to the final product, the existing IP legal frameworks are inadequate to provide copyright protection to AI-generated creativity, trademark protection to AI-driven brand development, or patent protection to AI-built inventions. The gaps in legislation thus leaves room for uncertainty and exploitation of the IP. Without a legal framework, courts lack power to render consistent interpretations in the event of conflict resolution. The lack of reliable enforcement can thus impact ethical application of IP, since accountability safeguards are non-existent.

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Introduction

A superintelligent AI will be extremely good at accomplishing its goals,
and if those goals aren't aligned with ours, we're in trouble.

Stephen Hawking[1]

Perhaps the simplest and most popular definition of Artificial Intelligence (AI) is that it is a computer that can think, act, and create like a human. This appealing concept is the premise of box office cautionary tales with both utopian and dystopian spins. For example, Isaac Asimov's 1950 science fiction novel *I, Robot* was the premise of the eponymous 2004 film [2] in which robots with AI-like capabilities are integrated into society to serve humans. The darkness of the human–robot relationship is explored in the *Terminator* franchise,[3] in which machines have evolved such sophisticated intelligence that they seek to exterminate their only threat: humans.

Still, to define AI as humanlike is unsatisfactory. After all, how is humanity defined within concepts of creativity, commerce, conflict, and conscience? If this question was posed to a jurist, a philosopher, an anthropologist, an artist, a sociologist, a psychologist, a politician, a policy maker, an economist, and an algorithm developer, they would not reach a consensus. Even though the world lacks a clear standard for what it is to be human, we naïvely expect AI to produce humanlike results.

This Article thus explores how the Canadian and American intellectual property (IP) frameworks can elucidate the relationship between AI and humans. Human creativity and commerce are captured under the IP doctrines of copyrights, trademarks, and patents. Copyrights protect an author's creative expressions from being unlawfully used by others.[4] The emphasis on creativity introduces many points of discussion in the context of AI. Trademarks protect the commercial use of distinct identifiers so consumers are not

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[1] Stephen Hawking, *Science AMA Series*, REDDIT (Oct. 8, 2015), https://www.reddit.com/r/science/comments/3nyn5i/scienceama_series_stephen_hawking_ama_answers/.

[2] I, ROBOT (Twentieth Century Fox 2004).

[3] THE TERMINATOR (Orion Pictures 1984); TERMINATOR 2: JUDGMENT DAY (TriStar Pictures 1991); TERMINATOR 3: RISE OF THE MACHINES (Warner Bros. Pictures 2003); TERMINATOR SALVATION (The Halcyon Company 2009); TERMINATOR GENISYS (Skydance Productions 2015); TERMINATOR: DARK FATE (Paramount Pictures et al. 2019).

[4] *See* discussion *infra* Section III.

confused as to the source of goods or services.[5] Patents promote healthy competition by granting monopolies over new and useful inventions in exchange for full public disclosure about how to make and use those inventions.[6] Additionally, patents focus on the critically essential—yet distinct—roles of the inventor and the patent owner. These legal principles highlight aspects of what it means to be human and, moreover, to participate in modern society: contributing to creative discourse, participating in commerce, identifying and resolving conflicts, and aligning our conscience with the prevailing moral fabric. Yet AI challenges the meaning of these IP doctrines in the U.S. and Canada.

In exploring how AI creation can fit into the IP landscapes in the U.S. and Canada, this Article will dissect jurists' attempts to identify and define aspects of humanity. Without legal definitions, courts lack direction and authority to enforce IP rights. But defining AI humanity is difficult because the law cannot keep up with the rapid developments in innovation. Even when the law is credited for keeping pace with rapid developments in fields such as health care, it is said that, "the law marche[s] with medicine, 'but in the rear and limping little.'"[7] To illustrate the chasm between law and innovation, this Article predicts how an inventor will fare in a challenge against decades-old laws.

Suppose that AI achieves its full potential: It creates new and original works; it contributes to commerce; it makes decisions with moral, ethical, and social implications. Does AI have legal rights? To what obligations must AI adhere? Can AI be held accountable? If so, what are the mechanics of accountability? And if not, what of the aggrieved? It would be foolish to presume that a newcomer to human society—with the potential to make historical impacts on IP—would not affect the conscience of Canadian and American courts as they preside over conflicts.

But Canadian and American laws have not adapted for AI's arrival. In Part I, this Article begins with an introduction to AI, explaining how AI fits into, and conflicts with, Canadian and American IP frameworks. In Parts II through V, the shortcomings of the IP landscape reveal why courts lack authority when interpreting the laws in such a manner that the resolution is reasonable, equitable, and practical to society. In Part VI, this Article then considers how humans and non-humans are consequently vulnerable to exploitation

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[5] *See* discussion *infra* Section IV.

[6] *See* discussion *infra* Section V.

[7] Zelman Cowen, *In the Rear and Limping a Little: Some Reflections on Medicine, Biotechnology, and the Law: the Roscoe Pound Lectures,* 64 NEB. L. REV. 548, 550 (1985).

under the current IP legal framework Understanding these two countries' legislative history and current judicial interpretations in IP lays the foundation for integrating AI creation into existing IP principles. Overall, this Article will state what appears to be obvious: AI is not "human" and is not to be treated as such under American or Canadian jurisprudence. Still, IP law needs to account for AI's potential to contribute to the quintessentially human concepts of creation, commerce, conflict, and conscience.

I. History and Evolution of AI

AI has a long and rich history. Adrienne Mayor, a classics scholar and science historian at Stanford's School of Humanities and Sciences, proposes that the Greeks imagined AI at least 2700 years ago: "[T]he myth of Pandora is actually more appropriate than many realize, not for what it says about naïve curiosity, but for what it tells us about humankind's relationship with technology."[8] Pandora was an artificial, humanlike creation of the gods, whose mission was to unleash miseries in the human world.[9] Mayor further warns that once artificial humanlike beings interact with humans, "we get chaos and destruction."[10]

The late 1930s, 1940s, and early 1950s saw a number of scientific breakthroughs that uncovered the theoretical possibility of achieving AI. Neurology research revealed that the brain is a network of neurons that fires pulses on a binary,[11] meaning that pulses did not vary in size, intensity, or duration; they either fired or they did not.[12] Claude Shannon explained in 1948 that digital signals were also binary, all-or-nothing signals.[13] In 1950, Alan Turing's theory of computation contemplated the possibility of creating

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[8] Adrienne Mayor, *An AI Wake-Up Call from Ancient Greece*, PROJECT SYNDICATE (Oct. 15, 2018), https://www.project-syndicate.org/commentary/artificial-intelligence-pandoras-box-by-adrienne-mayor-2018-10?

[9] *Id.*

[10] Alex Shashkevich, *Stanford Researcher Examines Earliest Concepts of Artificial Intelligence, Robots in Ancient Myths*, STAN.NEWS (Feb. 28, 2019), https://news.stanford.edu/2019/02/28/ancient-myths-reveal-early-fantasies-artificial-life/.

[11] *See* Pamela McCorduck, MACHINES WHO THINK 63–64 (2nd ed. 2004); Daniel Crevier, AI: THE TUMULTUOUS HISTORY OF THE SEARCH FOR ARTIFICIAL INTELLIGENCE, 22–24 (1993).

[12] *See* Tim Newman, *All You Need to Know About Neurons*, MED. NEWS TODAY (Dec. 7, 2017), https://www.medicalnewstoday.com/articles/320289

[13] *See* Claude E. Shannon, *A Mathematical Theory of Communication*, 27 BELL SYS. TECH. J. 379 (1948).

machines that could think, based on the idea that any form of computation could be described digitally. Specifically, Turing's groundbreaking paper, *Computing Machinery and Intelligence*, confronted the question "can machines think?" by distilling that inquiry to more clearly articulate the question, "can machines act indistinguishably from humans?" [14] Scholars considered these questions, and preemptively named the answer "Artificial Intelligence."[15]

In the decades that followed, developments in AI fluctuated with economic shifts, political climates, academic interests, societal demands, and other influences. Occasionally, AI made headlines, as when an IBM computer, Deep Blue, defeated the world's reigning chess grandmaster, Garry Kasparov.[16] Some said that the 1997 chess match put the weight of humanity on Kasparov's shoulders, and that his historic loss symbolized the end of the era when man dominated machines.[17]

The world's increasing demand for data has marked the dawn of the 21st century as the "Information Age," characterized by a rapid shift from the tangible industries of the Industrial Revolution to an economy driven by digital information.[18] That is, data (and its components, processes, and supporting systems) became a commodity. Just as humans need oxygen, water, and food, AI requires vast amounts of data, which it uses to verify the accuracy of its previous results—and theoretically—to produce better results.[19]

Without parameters, regulations, or definitions for AI, the Information Age could very well be followed by the Age of Reckoning.[20] That is, despite AI's technological benefits, AI might bring out the loneliness, ruthlessness, and despair that

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[14] *See* Alan M. Turing, *Computing Machinery and Intelligence*, 59 MIND Q. REV. PSYCH. & PHIL. 433 (1950).

[15] MCCORDUCK, *supra* note 9, at 529.

[16] History.com Eds., *Deep Blue Defeats Garry Kasparov in Chess Match*, HIST. (Nov. 16 2009), https://www.history.com/this-day-in-history/deep-blue-defeats-garry-kasparov-in-chess-match.

[17] Chess.com, *Kasparov vs. Deep Blue: The Match that Changed History*, CHESS (Oct. 12, 2018, 1:45 AM), https://www.chess.com/article/view/deep-blue-kasparov-chess.

[18] *See* Brian Bi, *What Will Come After the Information Age?*, FORBES (Jan. 16, 2019, 3:20 PM), https://www.forbes.com/sites/quora/2019/01/16/what-will-come-after-the-information-age/#64b590c83d7d.

[19] *See* Willem Sundblad, *Data is the Foundation for Artificial Intelligence and Machine Learning*, FORBES (Oct. 18, 2018, 10:30 AM), https://www.forbes.com/sites/willemsundbladeurope/2018/10/18/data-is-the-foundation-for-artificial-intelligence-and-machine-learning/#7d5992f751b4.

[20] Bi, *supra* note 18.

is rooted in human nature.[21] A framework must be established to not only amplify the best of humankind and minimize the worst, but also to set forth kill switches to prevent the machines from overtaking man.

While AI has vast applications and can produce useful information, the focus of this discussion is on IP and the legal implications of these results. Who owns AI's creations? Is AI an "author" or "inventor"? With its results, can AI contribute to commerce, or is it still under the directing mind of humans? Considerations that follow can include accountability for AI's results, and how accountability is enforced. Even if there were answers to these questions, however, it is said that it "takes a hundred years to make a law, and after the law has done its work, it takes a hundred years to get rid of it."[22] It has been just over seventy years since Turing's *Computing Machinery and Intelligence*.[23] and we now have such technology as autonomously driving vehicles. The law has hardly a decade to develop AI legislation, much less the requisite century.

II. Creativity: Perform as a Human Should, Without Rights as a Human Would

AI has the capacity to create and thus possesses many of the features typically associated with creativity. With this creative capacity, this Part addresses whether nonhuman creators should have legal rights.

In 1955, computer scientists—John McCarthy, Marvin L. Minsky, Nathaniel Rochester, and Claude E. Shannon—proposed a two-month, ten-man study "on the basis of the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it," for the Dartmouth Summer Research Project.[24] If the ideas of the 1930s, 1940s, and early 1950s are the metaphorical moments of AI's conception, the Dartmouth Conference of 1956 is when AI was born.[25]

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[21] *Id.*

[22] William Drysdale, PROVERBS FROM PLYMOUTH PULPIT 63 (1887).

[23] Turing, A.M., 1950. Computing Machinery and Intelligence. *Mind*, 59(236), pp.433-460.

[24] John McCarthy et al., A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence (Aug. 31, 1955) (Summer Research Project, Dartmouth College) (on archive with Dartmouth College and Stanford University).

[25] Dartmouth College displays a commemorative plaque at Dartmouth Hall, where the Conference took place, which states, "In this building during the summer of 1956…first use of the term 'Artificial Intelligence',

Professors of Marketing at the École Supérieure de Commerce de Paris (ESCP) Business School, Andreas Kaplan and Michael Haenlein, set out to isolate the difference between the most sophisticated form of AI and human intelligence. They identified four general indicators of human intelligence: (1) cognitive intelligence; (2) emotional intelligence; (3) social intelligence; and (4) artistic creativity.[26] In the figure below, they summarized three types of AI systems that lay between expert systems at the low end and human beings on the high end of intelligence level.

	Expert Systems	Analytical AI	Human-Inspired AI	Humanized AI	Human Beings
Cognitive Intelligence	×	✓	✓	✓	✓
Emotional Intelligence	×	×	✓	✓	✓
Social Intelligence	×	×	×	✓	✓
Artistic Creativity	×	×	×	×	✓
		Supervised Learning, Unsupervised Learning, Reinforcement Learning			

Figure 1. Kaplan and Haenlein's summary of AI system types[27]

As demonstrated in the figure above, Kaplan and Haenlein suggest that each of these AI systems can replicate varying forms of intelligence. Even so, they conclude that none of these systems can replicate artistic creativity and thus the difference between man and machine is creativity.

AI also raises questions beyond the debate over creativity: There is considerable controversy about whether AI's creations are ethical, particularly when people cannot distinguish a human product from that of a machine.

Although it is not commonplace to see humanoid machines living among people today, the technology for that possibility is perhaps not far off. AI currently has the ability to create, make business decisions, and contemplate moral issues. As will be further explored, the U.S. and Canada have robust laws pertaining to IP, commerce, and conflict resolution, all of which rely on the premise that people are at the helm and can be held accountable. Given that AI's ultimate objective is to imitate humans, can AI be credited, compensated, and held accountable for its actions, the way a human can be?

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founding of Artificial Intelligence as a research discipline." Stephanie Dick, Artificial Intelligence, HARV. DATA SCIENCE REV., (Oct. 4, 2019). , https://hdsr.mitpress.mit.edu/pub/0aytgrau/release/2.

[26] Andreas Kaplan & Michael Haenlein, *Siri, Siri, in my Hand: Who's the Fairest in the Land? On the Interpretations, Illustrations, and Implications of Artificial Intelligence*, 62 BUS. HORIZONS 15, 17–19 (2019).

[27] *Id.* at 18.

AI's potential to create and interact with humanlike originality disrupts many traditional aspects of society. The legal framework is no exception. In the context of IP law, AI simply does not fit in, though society presumes that it does. To illustrate, a London theater presented classical music enthusiasts with some music that Bach composed, and with other music composed by AI that was "inspired" by Bach.[28] The audience voted on whether a piece was authentically Bach or AI's Bach-like composition.[29] The "quite shocking" result was that there were moments when the audience failed to distinguish the human composer's music from AI's.[30] The audience was comprised of members of the public who purchased tickets; although the conclusions have been drawn from an entertaining social experiment rather than a formal academic study,[31] this kind of AI does not map neatly onto existing IP law, and it raises many legal questions: If a human musician's Bach-inspired composition was eligible for copyright protection, can the same be said for AI's Bach-like music? If AI could independently engage in commerce, could it own the trademarks it develops, to distinguish itself from its competitors? If AI aims to innovate, will it be considered the inventor of novel and useful devices?

Although currently the answers to the above questions are no, getting to yes requires considerations beyond just equitable attribution, or the right to be identified as the author of your work. We must shift away from the prevailing requirement of human contribution. If the expectation of AI is that it must create as a human should, why is it not given rights as a human would? The granting of rights presupposes notions of both protection and obligation. While lawmakers, courts, and policymakers may not find it palatable to grant rights to nonhumans, humans might benefit if AI had to uphold obligations as a condition of enjoying the same rights as a human would.

Giving legal status to nonhuman entities is not a foreign concept, although it is a modern one. Business entities' legal personhood is a traditional example. Less traditionally in the common law system, New Zealand

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[28] Sigal Samuel, *Artificial Intelligence Can Now Make Art. Artists, Don't Panic.*, VOX (May 17, 2019, 9:16 AM), https://www.vox.com/2019/5/10/18529009/ai-art-marcus-du-sautoy-math-music-painting-literature.

[29] *Id.*

[30] *Id.*

[31] The City of London Corp., *The Eternal Golden Braid: Gödel Escher Bach*, BARBICAN (Mar. 9, 2019), https://www.barbican.org.uk/whats-on/2019/event/the-eternal-golden-braid-godel-escher-bach.

granted legal personhood to the Whanganui River in 2017.[32] The following year, the High Court in the Indian state of Uttarakhand declared that the entire animal kingdom was a legal entity, "having a distinct persona with corresponding rights, duties and liabilities of a living person."[33] But with the guarantee of rights comes obligations in a "give-and-take social contract."[34]

The following Parts explore copyright, trademark, and patent laws in the U.S. and Canada. Both countries loath to grant IP rights to nonhumans as authors, owners, and inventors. Although granting AI these rights may seem superfluous, the consequences of not doing so will eventually be even more disruptive to society. This is especially so in the case of disputes over proprietorship, novelty, unfair competition, and tortious or unethical content.

III. Creation: Copyrights

Although AI is creative, it is not human. Therefore, AI is not eligible for copyright registration in the U.S. or Canada.

In the U.S., the Copyright Act protects "original works of authorship fixed in any tangible medium of expression."[35] Subject matter that qualifies for copyright protection includes virtually every product that AI could produce.[36] The copyright owner has the exclusive right to do, and to authorize others to do, the following:

- Make copies of, or otherwise reproduce the work;
- "[p]repare derivative works";
- Publicly distribute, sell, or transfer ownership of the work;
- Publicly perform or display the work; and
- Digitally transmit sound recordings.[37]

The Canadian Copyright Act largely reflects the same rights and authorizations.[38]

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[32] Te Awa Tupua (Whanganui River Claims Settlement) Act 2017, pt 2, s 14(1) (N.Z.).

[33] Narayan Dutt Bhatt v. Union of India(India, 2018) SCC Online Utt 645, para. 99(A) (India).

[34] Sophie Wrobel, *Towards Granting Animals Legal Personhood in the UK*, MEDIUM, (May 28, 2019), https://medium.com/@webmage/towards-granting-animals-legal-personhood-in-the-uk-17c2903ef5ff.

[35] 17 U.S.C. § 102(a).

[36] Section 102(a) specifically lists such qualifying works to include literary works, musical works, dramatic works, graphic works, sculptural works, sound recordings, audiovisual works, and architectural works. *Id.*

[37] 17 U.S.C. § 106.

[38] Copyright Act, R.S.C. 1985, c C-42, s 3(1) (Can.).

Across both countries, originality is a condition of copyright protection. The U.S. Supreme Court expressly articulates that originality is "the bedrock principle of copyright."[39] To qualify for copyright protection, "a work must be original to the author," such that it was "independently created by the author," and possesses "at least some minimal degree of creativity."[40] Interestingly, there is no novelty requirement in either U.S. or Canadian copyright law because originality is premised on whether one author copied another.[41] Even if two authors created identical works, as long as they did not copy each other, each is entitled to independent copyright protections.[42]

The concept of originality is so persistent in U.S. and Canadian copyright law that courts rarely consider whether a work is creative: even a "slight amount"[43] of creativity can suffice. This standard is so low, in fact, that "[t]he vast majority of works make the grade quite easily, as they possess some creative spark, 'no matter how crude, humble or obvious' it might be."[44]

At its core, copyrights allow a creator of new and original work to prevent others from exploiting the creation. The discourse involving AI-generated works has largely revolved around whether a machine can be creative. But while creativity is a fundamental part of copyright law, the law pays greater heed to AI's humanity: For instance, the Supreme Court of Canada suggested that the skill and judgment necessary to invoke copyright protections may only exist for works of human authorship, and further, that this skill and judgment "must not be so trivial that it could be characterized as a purely mechanical exercise."[45].

A. "Creativity": The Least of AI's Concerns in Copyright

As Harvard philosophy professor Sean Dorrance Kelly says of AI's contributions to art and creativity:

> So what about the highest level of human achievement—creative innovation? Are our most

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[39] Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 347 (1991).
[40] *Id.* at 345.
[41] *Id.*; CCH Can. Ltd. v. Law Society of Upper Can., [2004] 1 S.C.R. 339, para. 24.
[42] U.S. COPYRIGHT OFF., COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 308.1 (3d ed. 2021) (citing *Feist*, 499 U.S. at 345).
[43] *Feist*, 499 U.S. at 345.
[44] *Id.* (quoting 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT §1.08[C][1] (1990)).
[45] *CCH Canadian Ltd. v. Law Society of Upper Canada*, at para. 16, *supra* note 17.

> creative artists and thinkers about to be massively surpassed by machines?
>
> No.
>
> Human creative achievement, because of the way it is socially embedded, will not succumb to advances in artificial intelligence. To say otherwise is to misunderstand both what human beings are and what our creativity amounts to.
>
> This claim is not absolute: it depends on the norms that we allow to govern our culture and our expectations of technology. Human beings have, in the past, attributed great power and genius even to lifeless totems. It is entirely possible that we will come to treat artificially intelligent machines as so vastly superior to us that we will naturally attribute creativity to them. Should that happen, it will not be because machines have outstripped us. It will be because we will have denigrated ourselves.[46]

Kelly thinks creativity is a uniquely human trait, and he implores mankind not to relinquish this exclusive talent to machines. The law supports Kelly's latter point, but advancing technological trends may disappoint him on the former.

First, consider the many technological trends that approximate human creativity. In 2018, for example, Google introduced Duplex, a fully autonomous AI chatbot that converses like a human.[47] Duplex's imitation of the tics, rhythms, and pauses inherent of human speech—including words like "um," "uh," and "mm-hm"—disconcerted the audience by convincing people into believing that they were engaging with a human.[48]

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[46] Sean Dorrance Kelly, *A Philosopher Argues That an AI Can't Be an Artist*, MIT TECH. REV. (Feb. 21, 2019),https://www.technologyreview.com/s/612913/a-philosopher-argues-that-an-ai-can-never-be-an-artist/.

[47] Yaniv Leviathan & Yossi Matias, *Google Duplex: An AI System for Accomplishing Real-World Tasks Over the Phone*, GOOGLE AI BLOG (May 8, 2018), https://ai.googleblog.com/2018/05/duplex-ai-system-for-natural-conversation.html.

[48] Laurel Wamsley, *Google's New Voice Bot Sounds, Um, Maybe Too Real*, NPR (May 9, 2018, 4:31 PM), https://www.npr.org/sections/thetwo-way/2018/05/09/609820627/googles-new-voice-bot-sounds-um-maybe-too-real.

Duplex is not an isolated instance. In fact, it is not even today's most advanced AI technology. AI can create works of art that look man-made.[49] As mentioned, many music lovers cannot distinguish Bach music from AI compositions that imitate Bach.[50] AI text generators can write passages that match any given style and subject.[51] This technology leads to concerns about fake news[52] and so-called "deep fakes," AI-manipulated videos that depict fabricated events and statements.[53]

Worryingly, humans are mistaking machine-generated content for manmade products. Although this raises ethical dilemmas, the more important point from a copyright law perspective is that AI-generated content contains at least the same creative value as human-generated content, such that the two are indistinguishable. If AI- and human-generated content can both be creative, why do Canadian and American laws resist granting copyright authorship status to AI? In short, it is because the statutes impose a "person only" requirement for copyrights.[54] Absent that requirement, AI's products would likely qualify for copyright rights in Canada and the U.S.. Algorithms that analyze vast quantities of data to generate a new work would probably satisfy the originality requirement, because AI does not just copy a past result: It uses information to generate a new result via cognitive, emotional, or social intelligence, as Kaplan and Haenlein describe.[55]

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[49] See, for example, the Creative Adversarial Network described in Katy Evans, *AI Creates Art that Critics Can't Distinguish From Human Created Work*, IFLSCIENCE (June 30, June 2017, 5:23 PM), https://www.iflscience.com/technology/ai-creates-rather-wonderful-art-that-fools-critics-its-not-humanmade/ and AICAN described in Ahmed Elgammal, *75% of People Think This AI Artist Is Human*, FAST CO. (Oct. 19, 2018), https://www.fastcompany.com/90253470/75-of-people-think-this-ai-artist-is-human.

[50] *See* Samuel, *supra* note 29.

[51] See, for example, OpenAI's GPT2, as described in Alex Hern, *New AI Fake Text Generator May Be Too Dangerous to Release, Say Creators*, THE GUARDIAN (Feb. 14, 2019, 12:00 PM), https://www.theguardian.com/technology/2019/feb/14/elon-musk-backed-ai-writes-convincing-news-fiction.

[52] *See*, *e.g.*, Jennifer Allen, 'Evaluating the fake news problem at the scale of the information ecosystem' [2020] Science: Science Advances, v.6, No. 14

[53] *See*, *e.g.*, Benjamin Goggin, *From Porn to 'Game of Thrones': How Deepfakes and Realistic-looking Fake Videos Hit It Big*, BUS. INSIDER (June 23, 2019, 7:45 AM), https://www.businessinsider.com/deepfakes-explained-the-rise-of-fake-realistic-videos-online-2019-6.

[54] *See infra* note 58; Copyright Act, R.S.C., 1985, c C-42, s 5(1)(a) (2019) (Can.).

[55] *See* Kaplan & Haenlein, *supra* note 26 and accompanying text.

Despite the moral repugnancy of fake news and deep fakes, this autonomously generated content is original. Further, popular interest in these videos supports the proposition that the content is creative. Likewise, as AI writing moves toward production of fully formed works, it runs the risk of becoming so creative that humans begin plagiarizing the works.[56] In those instances, who is to hold plagiarists accountable for misappropriated works? If only a creator has standing to enforce creative rights, and AI—being a non-person—is not considered a creator, no one has standing to prevent such plagiarism.

So, can AI be afforded legal copyright protections? In the U.S., absolutely not. In Canada, perhaps. These conclusions come not from the eligibility of the subject matter, but instead from the characteristics of the author. The next two Parts explain these divergent aspects of U.S. and Canadian law.

B. Eligible Subject Matter and the Human Creator Requirement: The American Perspective

"Author" is not defined in the U.S. Copyright Act. The term is notably missing from the definitions codified under 17 U.S.C. § 101,[57] although the legislation mentions "authors" elsewhere in its text.[58] The law's reference to authors is perhaps acceptably abstract, because copyright protections exist not only for the creator's benefit, but also largely for the public's benefit:

> The primary purpose of copyright is to stimulate the creation and dissemination of intellectual works, thus advancing "the progress of science and useful arts."…

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[56] *See* Jonathan Bailey, *How AI Will Change Authorship and Plagiarism*, PLAGIARISM TODAY (Feb. 12, 2019), https://www.plagiarismtoday.com/2019/02/12/how-ai-will-change-plagiarism.

[57] 17 U.S.C. § 101.

[58] For instance, "author" is used in the U.S. Copyright Act's definition of Initial Ownership: "Copyright in a work protected under this title vests initially in the author or authors of the work. The authors of a joint work are coowners of a copyright in the work." 17 U.S.C. § 201(a). Also, Works Made for Hire is defined as the following: "In the case of a work made for hire, the employer or other person for whom the work was prepared is considered the author for purposes of this title . . . ." 17 U.S.C. § 201(b).

> Within limits, the author's interests coincide with those of the public. Where they conflict, the public interest must prevail…[59]

These two purposes are closely related. Many authors could not devote themselves to creative work without the prospect of remuneration. By giving authors a way to secure the economic reward afforded by the market, copyright stimulates their creation and dissemination of intellectual works.[60]

In his treatise on copyright law, William Patry not only echoed this sentiment, but further demoted the role of authors and owners of creative works, arguing that "[t]he public has no inherent interest in who owns the copyright so long as works are placed into the marketplace."[61] This perspective is, however, psychologically shortsighted, as the European Union argues in its Information Society Directive (which aims to motivate authors to continue creating):

> If authors or performers are to continue their creative and artistic work, they have to receive an appropriate reward for the use of their work, as must producers in order to be able to finance this work. . . Adequate legal protection of intellectual property rights is necessary in order to guarantee the availability of such a reward and provide the opportunity for satisfactory returns on this investment.[62]

Remuneration issues aside, interpreting "authorship" requires deference to the courts. In *Goldstein v. California* (1973), the U.S. Supreme Court found constitutional authority to grant Congress the power to protect the writings of an "author." Interpreting Article 1, section 8 of the Constitution, the Court followed its own precedent from *Burrow-Giles Lithographic Co. v. Sarony* (1884) and defined the term "author" to mean "originator."[63]

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[59] STAFF H. COMM. ON THE JUDICIARY, 87TH CONG., REP. ON THE GENERAL REVISION OF THE U.S. COPYRIGHT LAW 6 (Comm. Print 1961)..
[60] *Id.*
[61] WILLIAM F. PATRY, 2 PATRY ON COPYRIGHT § 3:19 (2019).
[62] Council Directive 2001/29, 2001 O.J. (L 167) 10, 11 (EC).
[63] Goldstein v. California, 412 U.S. 546, 561 (1973) (citing Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53, 58 (1884)).

The 1884 *Sarony* case came before the Supreme Court in the midst of America's Second Industrial Revolution,[64] which introduced technologies such as photography,[65] the phonograph, motion pictures, and the electric generator.[66] The dispute involved the Burrow-Giles Lithographic Company and a photographer, Napoleon Sarony, who was commissioned to photograph the infamous Oscar Wilde. After arranging factors such as draperies, lighting, accessories, and even Wilde's costume and pose, Sarony obtained a copyright for the photograph he took, which he named *Oscar Wilde No. 18*.[67] Notwithstanding Sarony's copyright, Burrow-Giles marketed lithographs of the photograph. When Sarony sued for copyright infringement, Burrow-Giles defended on the premise that photographs did not qualify as a writing or as a work under production of an author, because photography was merely a mechanical process.[68]

Justice Miller, writing for a unanimous court, borrowed the definition of "author" from *Nottage v. Jackson* (1883)[69] and adopted the rationale that copyright protections should indeed extend to photographs:

> [I]t is the person who effectively is as near as he can be the cause of the picture which is produced; that is, the person who has superintended the arrangement, who has actually formed the picture by putting the persons in position, and arranging the place where the people are to be-the man who is the effective cause of that. . . . [A]uthor involves originating, making, producing, as the inventive or master mind, the thing which is to be protected, whether it be a drawing, or a painting, or a photograph . . . . [P]hotography is to be treated for the

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[64] The first U.S. copyright statute was enacted in 1790 and underwent landmark revisions in 1831, 1870, 1909, and 1976. These revisions often occurred in the wake of technological advances that changed business relations: In the mid-1970s, for example, Congress revised the 1909 U.S. Copyright Act to contemplate TV, movies, audio recordings, and radio technology: *See id.*; H.R. REP. NO. 94-1476 (1976).

[65] *See The Invention of Photography*, MAISON NICÉPHORE NIÉPCE, https://photo-museum.org/niepce-invention-photography/ (last visited July 7, 2019) (explaining that photography was invented sometime between 1824-1829).

[66] *See* Ryan Engelman, *The Second Industrial Revolution, 1870-1914*, U.S. HISTORY SCENE, http://ushistoryscene.com/article/second-industrial-revolution/ (last visited June 30 2019) (explaining that the phonograph, motion pictures, and the electric generator are inventions from the 1890s).

[67] *Sarony* , 111 U.S. at 55.

[68] *Id.* at 59.

[69] Nottage v. Jackson, (1883) 11 Q.B.D. 627 (UK).

> purpose of the act [of Congress] as an art, and the author is the man who really represents, creates, or gives effect to the idea, fancy, or imagination.[70]

The *Sarony* Court thereby determined that photographs can be an original intellectual invention, the author of which deserves copyright protection.[71]

Notwithstanding the common law definition of "author," the U.S. Copyright Office uses an interpretation that excludes nonhumans from authorship. It says:

> The U.S. Copyright Office will not register works produced by nature, animals, or plants. Likewise, the Office cannot register a work purportedly created by divine or supernatural beings, although the Office may register a work where the application or the deposit copy(ies) state that the work was inspired by a divine spirit.[72]

The U.S. Copyright Office further cites *Sarony* for the proposition that a work of authorship must be created by a human being.[73] But the U.S. Copyright Office quotes *Sarony* out of context, in an attempt to justify its hardline approach to authorship. A thoughtful analysis of *Sarony* reveals that the Court's intention was not to restrict the definition of "author" or even copyrightable subject matter. Rather, the *Sarony* opinion criticizes strict reliance on literal definitions that ignore the innovation of new copyrightable subject matter:

> The only reason why photographs were not included in the extended list in the act of 1802 is, probably, that they did not exist, as photography, as an art, was then unknown, and the scientific principle on which it rests, and the chemicals and machinery by which it is operated, have all been discovered long since that statute was enacted.[74]

A dissection of *Sarony*'s intention would be remiss if one neglected to recognize the case's emphasis on distinguishing innovation from the existing paradigms. For instance, Justice Miller investigated whether photographs

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[70] *Sarony*, 111 U.S. at 61 (citation omitted).
[71] *Id.*
[72] U.S. COPYRIGHT OFF., *supra* note 43, § 313.2.
[73] *Id.* at § 306 (citing *Sarony*, 111 U.S. at 58).
[74] *Sarony*, 111 U.S. at 58.

were distinguishable from other acceptable forms of copyrightable subject matter:

> Unless, therefore, photographs can be distinguished in the classification of this point from the maps, charts, designs, engravings, etchings, cuts and other prints, it is difficult to see why congress cannot make them the subject of copyright as well as the others. These statutes certainly answer the objection that books only, or writing, in the limited sense of a book and its author, are within the constitutional provision. Both these words are susceptible of a more enlarged definition than this.[75]

In this light, it appears that the U.S. Copyright Office's reliance on *Sarony* to limit authorship to humans is misplaced. *Sarony* expressly invites enlarging the definition of authorship if a new author cannot be distinguished from those in the existing framework.

When distinguishing the old from the new, the *Sarony* Court emphasized not *who* could be an author, but *how elements are selected and arranged when creating an original product*. The Court stated, "[a]n author in that sense is 'he to whom anything owes its origin; originator; maker; one who completes a work of science or literature.'"[76]

The Court then explained why *Oscar Wilde No. 18* was a product of "original mental conception."[77] Justice Miller characterized authorship by reciting the elements of Sarony's creative exercise: His manner of posing Wilde for the photograph; his selection and arrangement of details such as the draperies, accessories, and Wilde's costume; his manipulation of lighting, shading, and outlines; and his suggestion and evocation of a desired expression.[78] In light of these creative decisions, the Court recognized *Oscar Wilde No. 18* as an original work of art, thus challenging the presumption that the mechanical processes inherent in the photography process rendered photographers ineligible to be authors.[79] Accordingly, the Court awarded Sarony the exclusive right to use, publish, and sell the product of his photography.[80]

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[75] *Id.* at 57.
[76] *Id.* at 57–58 (citation omitted).
[77] *Id.* at 60.
[78] *Id.*
[79] *Id.*
[80] *Id.*

AI algorithms with a large data pool could make aesthetic choices in the same way Sarony did, combining elements such as lighting, subject framing, and outlines into a single work. The AI in this example fulfills most of Justice Miller's criteria for creativity, because it would have selected and arranged elements of the composition in a unique way.

It is unclear why the U.S. Copyright Office interprets *Sarony*[81] as the authority for excluding nonhumans from authorship. It cites *Sarony* out of context, mistakenly citing the phrase, "original intellectual conceptions of the author"[82] to support the proposition that "the Office will refuse to register a claim if it determines that a human being did not create the work."[83] And the U.S. Copyright Office wrongly relies on *Sarony* when it lists examples of works that lack human authorship:

> *Examples:*
>
> - A photograph taken by a monkey.
> - A mural painted by an elephant.
> - A claim based on the appearance of actual animal skin.
> - A claim based on driftwood that has been shaped and smoothed by the ocean.
> - A claim based on cut marks, defects, and other qualities found in natural stone.
> - An application for a song naming the Holy Spirit as the author of the work.[84]

Surprisingly, no scholar, practitioner, or court has challenged the Office's interpretation of *Sarony* as requiring human authorship.

The U.S. Copyright Office also uses erroneous logic, based on its interpretation of *Sarony*, to exclude from copyright registration most works produced by machines, as well as mere mechanical processes that operate randomly or automatically without any creative input or intervention from a human author. The examples provided by the U.S. Copyright Office of works that do not meet the human authorship requirement reveal their error in relying on *Sarony*:

> *Examples:*
>
> - Reducing or enlarging the size of a preexisting work of authorship.

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[81] In particular, pinpointing *Sarony* at 58.
[82] *Sarony*, 111 U.S. at 58.
[83] U.S. COPYRIGHT OFF., *supra* note 41, § 306 (citing *Sarony*, 111 U.S. at 58).
[84] *Id.* § 313.2 (citing *Sarony*, 111 U.S. at 58).

- Making changes to a preexisting work of authorship that are dictated by manufacturing or materials requirements.
- Converting a work from analog to digital format, such as transferring a motion picture from VHS to DVD.
- Declicking or reducing the noise in a preexisting sound recording or converting a sound recording from monaural to stereo sound
- Transposing a song from B major to C major.
- Medical imaging produced by x-rays, ultrasounds, magnetic resonance imaging, or other diagnostic equipment.
- A claim based on a mechanical weaving process that randomly produces irregular shapes in the fabric without any discernible pattern.[85]

The unjustified reliance on Sarony to support these examples begs the question as to whether there exists any rational basis to exclude nonhuman creators from authorship status. In fact, *Sarony*'s analysis stands for an even broader proposition—one that makes it a far more powerful decision than the holding for which it is already known. The decision acknowledged that photographs were not included in the extended list of copyrightable subject matter. Even so, Justice Miller said that when the latest version of the Copyright Act was revised, photography "did not exist . . . as an art, was then unknown, and the scientific principle on which it rests, and the chemicals and machinery by which it is operated, have all been discovered long since."[86] Thus, *Sarony* grants license to embrace innovation in spite of its disruption to existing legislative interpretations.

Justice Miller's progressive position on new technology in *Sarony* should guide the decision whether to award copyright protection to new technologies. According to that reasoning, AI should not be excluded from copyright protection simply because AI did not exist when the Constitution's Framers contemplated the definition of "author." Just as photography expanded the parameters of copyright law, the current definition of authorship can expand to accommodate the AI technology that is giving rise to new works.

Despite the foundation laid by Justice Miller, "American copyright scholars continue to debate the ideal

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[85] *Id.*

[86] *Sarony*, 111 U.S. at 58.

approach to authorship of computer-generated works"[87] and offer no satisfying conclusions on the subject. Since American jurisprudence depends so heavily on the U.S. Copyright Office's erroneous interpretation of *Sarony*, it is useful to examine Canada's copyright law on this topic. Though Canada's definition of authorship is somewhat more liberal than in the U.S., its treatises make similar errors in construing courts' decisions.

C. Eligible Subject Matter and the Human Creator Requirement: The Canadian Perspective

Canadian jurisprudence does not explicitly restrict authorship to humans. Still, human creation is implied in a number of contexts, including in the information solicited from authors in copyright applications, the calculation of copyright registration expiration upon the author's date of death, and in moral rights legislation.

i. "Author"

The Canadian Copyright Act was first passed in 1921.[88] It is younger than its American counterpart by 131 years. Considering, however, that the U.S. declared independence from Great Britain in 1776[89] and Canada's Confederation and sovereignty took place nearly a century thereafter,[90] the establishment of copyright legislation in these countries both reflects early appreciation for protecting their citizens' creations. Canada did not turn to its neighbor for direction in crafting its copyright law. Instead, Canada modeled its 1921 Act after the U.K. Copyright Act of 1911, which positioned Canada to better comply with the Berne Convention for the Protection of Literary and Artistic Works.[91] This historical insight explains why Canada's laws do not always echo the sentiments of its American counterparts, as might be expected.

The Canadian Intellectual Property Office (CIPO) is a special operating agency under the federal government that is tasked with the administration and processing of applications for copyright registration in Canada. CIPO does not make the same bold-faced exclusionary statement about nonhuman creators that the U.S. Copyright Office does. Still,

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[87] Shyamkrishna Balganesh, *Causing Copyright*, 117 COLUM. L. REV. 1, 73 (2017).
[88] The Copyright Act, (S.C. 1921),, 11–12 George V, c. 24. (Can.).
[89] THE DECLARATION OF INDEPENDENCE (U.S. 1776).
[90] The Constitution Act, 1867, 30 & 31 Victoria, c. 3 (U.K.).
[91] DAVID VAVER, INTELLECTUAL PROPERTY LAW: COPYRIGHT, PATENTS, TRADE-MARKS 55 (2d ed. 2011).

CIPO strongly suggests that humans are the only entities eligible for copyright registration. In its Guide to Copyright, CIPO explains what Canadian copyright is, how to register for a copyright, and the benefits of registration. The Guide does not specifically define "author"; rather, it sets characteristically human—but not necessarily human—parameters:

> **Author**
>
> You must include the name of the author of the work. The individual who created the work should be named as author, except in the case of a photograph created prior to November 7, 2012, where the author can be an individual or some other legal entity.
>
> The complete mailing address of the author is optional. If there is more than one author, you can include additional names and addresses.
>
> If the author is deceased, you should provide the date of death, if it is known.[92]

CIPO thus considers an author to have a name, a mailing address, and a date of death. Broadly read, an animal or any other living organism could be an author, since they may have a date of death—as long as they have a mailing address. Corporate entities could also arguably have a name, mailing address, and date of "death" upon corporate dissolution. Although that interpretation may seem like a stretch, corporations do receive some copyright protection in Canada. Prior to November 7, 2012, only the commissioners of a photograph—not the actual photographer—were considered authors, meaning that corporate entities could have copyright rights, even to the exclusion of the human photographers who were commissioned to take the photos.[93] Considering that Canada's copyright regime has historically included nonhuman authors and had to be expanded to include human authors, this suggests that there could be room for AI copyright ownership in Canada.

In spite of the legislation's broad definition of "author", Canada's courts have been unforgiving. The courts' judicial activism has also infected treatises, which have

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[92] *A Guide to Copyright*, CANADIAN INTELL. PROP. OFF., http://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/eng/h_wr02281.html (last modified Aug. 27, 2019).

[93] Copyright Modernization Act, S.C. 2012, c. 20, § 59(2) (Can.).

narrowed the definition of "author" beyond CIPO's intent. At the top of this slippery slope is the 2007 Ontario Federal Court decision, *Setana Sport Ltd.*.[94] The plaintiff, Setana Sport Limited, sought to restrain the defendants' sports bars from displaying European soccer matches on its television sets, alleging violation of the plaintiff's broadcast rights, which arise with copyright registration.[95] The issue in *Setana Sport* was narrow and clear: Whether the defendants should be prohibited from displaying those soccer matches.[96] Within this parameter, the court did not have latitude to examine the integrity of the copyright registrations themselves.[97] Indeed, when a registration must be changed, the Registrar of Copyrights or any interested person must request that the Federal Court of Canada orders a rectification of the Register.[98] The *Setana Sport* decision mentioned no such request.

Even so, instead of examining the propriety of the defendants' conduct, Justice Roger Hughes unilaterally overreached into the Register to decide on the deficiency of the copyright registrations. Specifically, Justice Hughes legislated from the bench when requiring human authorship, and he overstepped the province of the court to determine the authorship of the works in question:

> The Plaintiff relies on a number of certificates of registration of copyright. On their face, those certificates are defective. First, they all refer to the works in which copyright is said to subsist as dramatic works of which "Setana Sport Limited" is the "author." An author must be a human being or a group of human beings. Copyright endures for the lifetime of an author plus fifty (50) years (Copyright Act, R.S.C. 1985, c. C-42, section 6). Provision is made where there are several authors to deal with the death of one before the other (section 9). A corporation such as Setana has no "lifetime." Where the Copyright Act contemplates some non-human entity as being the original party to acquire rights, such as a "broadcaster" or a "maker" or the "owner of a negative" of a photograph, it does so explicitly.[99]

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[94] Setana Sport Ltd. v. 2049630 Ontario Inc., [2007] F.C. 899 (Can.).
[95] *Id.* para. 1.
[96] *Id.* para. 1, 4.
[97] *Id.* para. 4–8.
[98] CANADIAN INTELL. PROP. OFF., *supra* note 95.
[99] *Setana Sport*, [2007] F.C. 899, para. 4.

Justice Hughes continued to trespass upon the province of the Registrar of Copyrights when he determined the ineligibility of the subject works for copyright registration on the grounds that the works were not yet in existence at the time of registration.[100] Such a decision requires a request from the Registrar or an interested party,[101] but none was made.

One can only speculate why the plaintiff's counsel did not object to such impudent judicial activism or why this decision was not appealed. But paragraph nine of the decision suggests a reason: "Failure of the Plaintiff to prove its case has previously been pointed out to Counsel in *1395047 Ontario Inc. v. New Atlantico Café and Restaurante Inc.*, 2005 FC 1358. Counsel should be sensitive to these issues."[102]

The Court clearly seized an opportunity to publicly admonish plaintiff's counsel. The court's cold reception to the plaintiff's counsel could very well be why Justice Hughes' overreaching decision was not challenged.

One of Canada's most comprehensive treatises,[103] *Halsbury's Laws of Canada*, says *Setana Sport* stands for the proposition that "[t]he author of a work must be a natural person, not a corporate entity."[104]

It was not until 2016 that Canada reevaluated the human authorship requirement and considered whether AI's creations may qualify under copyright law. The Court of Queen's Bench in the Province of Alberta heard plaintiff Geophysical Service Inc.'s (GSI) claim of copyright ownership over seismic data it collected.[105] Justice Kristine Eidsvik rejected the proffered defense that "copyright does not subsist in a work which is created by a computer with little if any human input"[106] and the dicta from *Setana Sport.* Instead, she refines the requirement of human authorship, stating that authorship may exist if there is sufficient human input.[107]

Still, Justice Eidsvik qualified her definition of authorship by stating, "[c]learly a human author is required to create an original work".[108] In doing so, her definition may exclude AI. She distinguished her findings from *Telstra*

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[100] *Id.* para. 6.
[101] CANADIAN INTELL. PROP. OFF., *supra* note 77.
[102] *Setana Sport*, [2007] F.C. 899, para. 9.
[103] CATHERINE BEST ET AL, THE CANADIAN LEGAL RESEARCH AND WRITING GUIDE §3.2.3 (2018).
[104] ROGER T. HUGHES & SUSAN J. PEACOCK (contributors), HALSBURY'S LAWS OF CANADA (2019).
[105] Geophysical Serv. Inc. v. Encana Corp., 2016 ABQB 230 (Can.).
[106] *Id.* para. 88 (quoting Defendants' brief para. 102).
[107] *Id.* paras. 88–91.
[108] *Id.* para. 88.

Corporation Limited v. Phone Directories Company PTY Ltd.,[109] an Australian case which found that the production of a phone book using automated processes did not attract copyright protection,[110] because although "technical instruments are used in the production of seismic data," this data still requires "human intervention."[111]

The allure of AI is that computers will take over decisions involving skill and judgment. If AI blurs the lines of authorship such that humanand machine-engineered creations are indistinguishable, AI still cannot meet Justice Eidsvik's criteria for authorship.

ii. Canada's Implied Human Creator Requirement: The Case of Moral Rights

The requirement for copyrighted work to originate from a human is firmly entrenched in Canadian copyright law. Unlike the American laws that explicitly hold firm on this requirement, Canadian legislation implies the same through various doctrines, the most compelling example of such being moral rights.

Moral rights are inalienable and stay with the artist their entire lives.[112] As with copyrights, moral rights are inheritable.[113] Codified in the Copyright Act, moral rights provide that an author of a work has the right to the integrity of the work and to be credited as its author.[114] An act or omission contrary to the author's moral rights is deemed infringement.[115] The Supreme Court of Canada explained that the legislative intent of the moral rights doctrine is to "treat the artist's oeuvre as an extension of his or her personality, possessing a dignity which is deserving of protection."[116] The legislative intent to protect the fundamentally human attributes captured in creative works is evident from the definition of the doctrine adorned with words such as "integrity," "personality," and "dignity."[117] Because nonhuman creators cannot be offended or otherwise have

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[109] Telstra Corp. Ltd v. Phone Directories Co. PTY Ltd., [2010] FCAFC 149 (AustlAus.).
[110] *Id*. paras. 7–8.
[111] Geophysical Serv. Inc. v. Encana Corp., 2016 ABQB 230 (Can.) at para. 91.
[112] *Supra* note 39, § 14.1.
[113] *Id.* § 14.2(2).
[114] *Id*. § 14.1
[115] *Id.* § 28.1
[116] Galerie d'Art du Petit Champlain Inc. v. Théberge, [2002] 2 S.C.R. 336, 348 (Can.).
[117] *Id.* at 348.

their sensitivities intruded upon, they are not entitled to moral rights. As a result, their works are vulnerable to moral trespass, because there is no system to hold trespassers accountable.

An iconic and relatable illustration of moral rights infringement involves the Toronto Eaton Centre, one of Canada's largest shopping centres, [118] whose atrium architecture [119] features a skylit galleria distinctive of the Eaton's Centres' motif.[120] In the late 1970s, the Eaton Centre developers commissioned Michael Snow to provide a permanent artwork to hang in the skylit galleria. The Toronto native artist paid homage to Eaton's Canadian history by creating a sculpture incorporating a symbol of national pride—the Canada goose. The 1979 piece, entitled *Flight Stop*, is comprised of 60 fibreglass geese. The geese, individually suspended from the ceiling, appear to break their flight formation to land in the Eaton Centre's south entrance.[121]

During the Christmas season of 1981, the Eaton Centre placed red ribbons around the necks of the geese. [122] Snow sued, seeking an injunction to have the ribbons removed on grounds that the ribbons offended the integrity of, and distorted, his work. [123] In its decision in Snow's favor, the Ontario High Court of Justice reiterated his position: "The plaintiff is adamant in his belief that his naturalistic

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[118] *Eaton Centre*, WIKIPEDIA, https://en.wikipedia.org/wiki/Eaton_Centre (last visited July 10, 2019 04:08 GMT).

[119] Michael McMordie, *Eaton Centre*, THE CANADIAN ENCYCLOPEDIA, (Mar. 4, 2015).

[120] T. Eaton Co. Ltd., previously one of Canada's largest department stores, developed a number of Canada's largest shopping centres, with the malls themselves carrying the Eaton name. As the Eaton chain closed in 1999, many of these centres were rebranded under different names. However, centres in major Canadian cities, such as Toronto, Calgary, Montreal, and Ottawa, the nation's capital, retained the distinctive skylit gallerias that allow natural sunlight to illuminate its balconied open concept, multi-level shopping centres; *CF Toronto Eaton Centre*, CADILLAC FAIRVEW, https://shops.cadillacfairview.com/property/cf-toronto-eaton-centre (last visited Jul. 30, 2021); Lee Rivett, *Retail Profile: The CORE Shopping Centre in Downtown Calgary (Spring 2021*), RETAIL INSIDER, (Apr.April 18, 2021), https://retail-insider.com/mall-tours/2021/04/retail-profile-the-core-shopping-centre-in-downtown-calgary-spring-2021/; *Centre Eaton de Montréal*, TOURISME MONTRÉAL, https://www.mtl.org/en/what-to-do/shopping/montreal-eaton-centre (last visited Jul. 30, 2021); *CF Rideau Centre*, CADILLAC FAIRVEW, https://shops.cadillacfairview.com/property/cf-rideau-centre (last visited Jul. 30, 2021).

[121] Martha Langford, *Flight Stop 1979*, ART CANADA INSTITUTE, https://www.aci-iac.ca/art-books/michael-snow/key-works/flight-stop (last visited Aug. 3, 2019).

[122] Snow v. The Eaton Centre Ltd., [1982] 70 C.P.R. (2d) 105, 106 (Can.)..)

[123] *Id.* at 105-106.

composition has been made to look ridiculous by the addition of ribbons and suggests it is not unlike dangling earrings from the Venus de Milo."[124]

U.S. law provides limited moral rights protections for works of visual art under the Visual Artists Rights Act of 1990[125] (VARA); similarly, the Canadian counterpart[126] is of particular significance because it implies that copyright law definitively requires a human author. For example, since intestacy is a moot issue for AI, the inheritability characteristic of moral rights suggests that copyright is an exclusively human entitlement.[127] Additionally, because AI lacks human traits such as integrity, personality, and dignity, AI theoretically cannot have its morals offended. This exposes its creations to moral compromise. Moreover, AI currently lacks the capacity to understand the impropriety of tying bows upon the necks of naturalistic geese or of adorning the Venus de Milo with earrings. Though AI's creations may satisfy the threshold of originality,[128] moral rights, among other copyright law doctrines, makes it almost insurmountably complex to grant AI authorship status.

D. Accountability and Transparency in AI-Generated Works: An Opportunity for Growth in Copyright Law

There may exist other reasons to extend authorship status to AI, though. For instance, there is a growing concern that AI has the potential of generating voluminous content, without regard for accuracy, conscience, or conflict.[129] Authorship within the copyright framework could promote AI's accountability.

Accountability is a clear acknowledgment and assumption of responsibility for actions, decisions, and products.[130] In the context of AI, transparency is a related, but

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[124] *Id.* at 106.

[125] Visual Artists Right Act of 1990, 17 U.S.C. § 106A.

[126] Copyright Act, R.S.C., 1985, c. C-42 § 3(1) (2019) (Can.) § 14.2 (2).

[127] *Id.*

[128] In that the work is not copied from another and requires more than trivial or mechanical intellectual effort. *See* Vaver, *supra* note 94, at 100; CCH Canadian Ltd. v. Law Society of Upper Canada, [2004] 1 S.C.R. 339, 352 (Can.) (noting that the exercise of skill and judgment requires intellectual effort which "must not be so trivial that it could be characterized as a purely mechanical exercise.").

[129] *See* Jason Millar et al., *Theme 3: Accountability In AI: Promoting Greater Societal Trust*, G7 MULTISTAKEHOLDER CONFERENCE ON ARTIFICIAL INTELLIGENCE (Dec. 6, 2018)),[hereinafter G7 DISCUSSION PAPER].

[130] *Id.* at 5.

narrower, concept within the accountability principle, because it allows for scrutiny of an AI system, but does not necessarily improve accountability.[131]

Both concepts are tied to trust. Harms flow when people under-trust or over-trust AI's products. Accusations of AI generating fake news and deep fakes appeal to the public conscience by suggesting the validity of mistrusting media content. Undermining trust in AI potentially limits its benefits.[132] For example, using facial recognition AI outputs for law enforcement purposes is deemed to be "socially acceptable", while use of the same technology in another context, such as retail strategy for developing real time, personalized advertising, is less so.[133] Taking a nap behind the wheel of an autonomous vehicle[134] also illustrates how over-trust in AI can have deleterious societal effects.

Canada and the U.S have introduced regulations geared toward ethical development and use of AI. These include the Government of Canada's Directive on Automated Decision-Making,[135] which took effect on April 1, 2019, and the New York City Automated Decision Systems Task Force Local Law 49[136] of January 11, 2018. But these initiatives are limited in their respective jurisdictions, and only concern government applications of AI technology.

What, then, of the private sector?

The articulated cornerstones in copyright law—namely, public benefit and authors' rights—can shift to include accommodations that minimize the shortcomings of AI accountability and transparency. Indeed, the 2018 G7 Multistakeholder Conference on Artificial Intelligence in Montréal, Canada introduced this idea,[137] though not reflected in the conference summary report.[138]

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[131] *Id.* at 6.
[132] *Id.* at 4.
[133] Beena Ammanath, *Why Is Solving for Trust in AI so Challenging?*, Forbes (May 16, 2022), https://www.forbes.com/sites/forbesbusinesscouncil/2022/05/16/why-is-solving-for-trust-in-ai-so-challenging/
[134] Alex Davies, *A Sleeping Tesla Driver Highlights Autopilot's Biggest Flaw*, WIRED (Dec. 3, 2018, 08:27 PM), https://www.wired.com/story/tesla-sleeping-driver-dui-arrest-autopilot/.
[135] Directive on Automated Decision-Making, 2019 (Can.).
[136] N.Y.C., N.Y., LOCAL LAW No. 49 Int. No. 1696-A (2018).
[137] G7 Discussion Paper, *supra* note 135, at 12.
[138] GOV'T OF CAN., FINAL SUMMARY REPORT: G7 MULTISTAKEHOLDER CONFERENCE ON ARTIFICIAL INTELLIGENCE (2018).

Consider that copyright serves as notice to the public on various aspects of the work and the author.[139] The function can improve the transparency and credibility of AI-generated works because it would notify the public that the work was not created by a human, if human authorship was a material consideration.

The first step towards transparency in this direction would require AI to have a place in copyright law. The current copyright application process separates subject matter by category.[140,141] Just as visual arts, literary works, and performing arts are distinct categories because of their characteristics, AI-generated product should have a category of its own. An even more liberal approach would simply include AI as a type of author. The AI author can then distinguish its identity from its "contemporaries" and proceed with a copyright application process tailored to this type of author. The AI author would then display its copyright notice on its work.

This solution requires consideration of mechanics and practicality. For example, AI would need to identify itself distinctively as the author, so the consuming public could recognize it. If another AI system attempted to identify itself in a confusingly similar manner, however, the original AI system would be tasked with enforcing its identity, which may trigger a number of other IP and litigation protocols. Undertaking enforcement, though, presumes that an original AI system possesses the requisite awareness that the uniqueness of its identity could be compromised. From there, the original AI system may be limited to remedies under copyright concepts, unless the original AI system is, for example, involved in commerce, which is a prerequisite to avenues of relief under other laws, such as those relating to trademarks or unfair competition.

Further, it is cost-prohibitive for AI to pay a separate application fee for the registration of each work. Although registration is unnecessary to trigger copyright ownership rights,[142] an application to either the Canadian Intellectual Property Office or the U.S. Library of Congress is required to

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[139] U.S. COPYRIGHT OFFICE, CIRCULAR 3: COPYRIGHT NOTICE (2021); Benedict O'Mahoney, *Protecting your Website*, COPYRIGHT WEBSITE, https://www.benedict.com/digital/web/webprotect (last visited May 21, 2020).

[140] CANADIAN INTELLECTUAL PROPERTY OFFICE, APPLICATION FOR REGISTRATION OF A COPYRIGHT IN A WORK,(2021).

[141] *Which Form Should I Use*, COPYRIGHT.GOV, https://www.copyright.gov/help/faq/faq-forms.html (last visited May 21, 2020).

[142] *See Canadian Copyright Law*, UNIV. OF ALTA., (last visited Sept. 22, 2019); 17 U.S.C. § 102(a).

be entered into the respective registrars' copyright database. This would perfect the AI author's rights and the courts could then recognize the AI author as the rightful creator. If AI is tasked with generating volumes of work, the burden of copyright application filing fees will grow accordingly and will likely be prejudicial to the ultimate objective of public benefit.

Finally, this proposal raises public policy concerns. For instance, does an AI work's ineligibility for copyright registration suggest to the public that the content is any less legitimate or credible, notwithstanding that copyright is independent from these analyses? Does a system that places higher value on human-generated works denigrate all AI products by implying that they require scrutiny? Will this scrutiny lead to a practice of cross-referencing different jurisdictions' copyright registries and bolster copyright offices' decisions to register AI-generated works? And if so, will this bolstering impose heightened obligations on copyright offices to scrutinize AI's copyright applications in order to protect the public? What hazards does this introduce, when heightened scrutiny can manifest in the form of censorship, lobbying, favoritism, or other forms of bias?

These hurdles do not necessarily present fatal flaws to the idea that copyright registration of AI-generated content can promote transparency. Transparency is a pressing and growing need, particularly when online information has the power to influence public opinions, academic discussions, political directions, and cultural norms. Although increased transparency does not necessarily enhance accountability, the latter is addressed in Part VII below dedicated to conflict resolution in the litigation arena. Before that exploration, however, it is worthwhile to examine how the "human only" restriction extends into other facets of IP law and further demonstrates that the current Canadian and American framework is not prepared for the advent of AI and its creations.

IV. Creation: Patents

A hallmark of United States and Canadian patents is that they apply to new, useful, and non-obvious technology.[143] Patents in the United States and Canada are commonly misunderstood to grant the right to make, use, or sell an invention.[144] Instead, patents grant a de facto monopoly by allowing a holder to exclude others from making, using,

[143] Patent Act, R.S.C 1985, c P-4, s. 2 (Can.) (2021); 35 U.S.C. §§ 101-103.
[144] Herman v. Youngstown Car Mfg. Co., 191 F. 579, 584–85 (6th Cir. 1911).

selling, offering for sale, or importing the claimed invention for the term of the patent.[145] This exclusivity serves as an incentive and reward for ingenuity.

As discussed above, the human creator requirement in Canadian copyright law appears to be an arbitrary assignment. It initially appears that this arbitrary standard is echoed in patent contexts, where inventors are necessarily human, and even corporate entities are disqualified from being inventors. There is, however, a more practical reason for restricting inventorship to humans. The inventor's onus is to not only create, but to also justify the novelty and utility. An inventor is statutorily defined as an individual or a collective of individuals who makes new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement.[146] At the heart of the evaluation of inventorship is the concept of intellectual domination, which has been described by the USPTO's Board of Patent Interferences:

> In patent law an invention comes into being when it is reduced to practice, but the work of the inventor except in cases of serendipity will involve much patient study and testing of relationships, forms, and materials to find just the right combination of the right elements to achieve an objective that he had thought capable of realization. At some point of time along the way he arrives at a conception of the invention as it will be subsequently embodied and tested for practicality. In arriving at that conception he may consider and adopt ideas and materials derived from many sources. He may adopt a suggestion from an employee, or hired consultant, or adopt a material suggested by a friend, as long as he maintains intellectual domination of the work of making the invention down to the successful testing, selecting or rejecting as he goes, and he does not lose his quality as inventor by reason of having received a suggestion or material from another even if such suggestion proves to be the key that unlocks his problem.[147]

Thus, there is an onus on inventors in the United States and Canada. To obtain patents for their inventions, inventors have to establish their inventorship as well as the

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[145] *Id.* at 584; *What is a patent?*, CANADIAN INTELLECTUAL PROPERTY OFFICE, http://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/eng/wr03716.html (last visited Apr. 25, 2020).

[146] 35 U.S.C. § 100(f); 35 U.S.C. § 101.

[147] Morse v. Porter, Auville, & Winch, 155 U.S.P.Q. 280, 4 (Bd. Pat. Interferences 1965) (internal citations omitted).

patentability of the subject invention. Although novelty and utility seem to be innocuously obvious requirements of patentability, these two intertwined requirements can lead to extraordinarily nuanced findings of fact.

The prevailing case on the definition of inventorship, *Apotex Inc. v. Wellcome Foundation Ltd*, illustrates the esoteric nature of the inquiry into novelty and utility.[148] The Supreme Court of Canada considered whether a new use for an old chemical compound satisfied the statutory requirements for an invention and further determined eligible inventors.[149] To characterize this 2002 decision interpreting "novelty" and "utility" as an intricate fact-finding mission is a gross over-simplification. While it is tempting to indulge in the court's analysis, one point cannot be lost: only a human can testify as to the novelty and utility of an invention. Thus, only a human can qualify as an inventor.[150] In the context of AI, although we expect it to innovate and develop solutions, can AI articulate "novelty" and "utility"? Can AI explain the why and how of its innovations? Is "because the data set told my algorithms so" a sufficient explanation of novelty or utility?

The distinction between inventors and patent owners is yet another nuance. Canadian and American patents restrict *inventorship,* but not *ownership,* to individuals. In both countries, an inventor is generally the one who conceives[151] of the invention[152] and contributes inventive ingenuity.[153] In some situations, an inventor will assign rights to another, who may file a patent application and subsequently exercise all rights as a patent owner.[154] In Canada, a patent owner is granted permissive rights: "the exclusive right, privilege and liberty of making, constructing and using the invention and selling it to others."[155] In the U.S., patent owners are granted exclusionary powers: "the right to exclude others from making, using, offering for sale, selling, or importing into the United States the invention claimed in the patent"[156] Inventors

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[148] Apotex Inc. v. Wellcome Found. Ltd., [2002] 4 S.C.R. 153 (Can.).
[149] *Id*, at 3.
[150] A conclusion further supported in Thaler v. Vidal, No. 2021-2347, decided August 5, 2022
[151] *See* Fiers v. Revel, 984 F.2d 1164, 1168 (Fed. Cir. 1993).; *See also In re* Application of Hardee, 223 U.S.P.Q. 1122, 3 (Comm'r Pat. & Trademarks 1984).; Bd. of Educ. *ex rel.* Bd. of Trs. of Fla. State Univ. v. Am. Bioscience, Inc., 333 F.3d 1330, 1340 (Fed. Cir. 2003).; *See infra* note 161.
[152] *See supra note 156 at para. 96.*
[153] Drexan Energy Sys. Inc. v. Comm'r of Patents, [2014] FC 887, para. 26 (Can.).
[154] *See* Patent Rules, SOR/2019-251 s. 37 (Can.).; 35 U.S.C. § 261; 37 C.F.R. § 3.1 (2020).
[155] Patent Act, R.S.C. 1985, c. P-4, s. 42 (2022) (Can.).
[156] 35 U.S.C. § 154(a)(1).

and patent owners may be the same person. In other situations, corporations and other non-human entities may own patents even if their non-humanness prevents them from being recognized as inventors.[157] In fact, it is common and accepted practice for individual employees to assign their patent ownership rights to their corporate employers, though the employees would be named the inventors.[158]

The philosophical, evidentiary, and statutory justifications for human inventorship—notwithstanding possibly non-human ownership—are not universally accepted when the very premise of AI is to independently create new and useful devices.

A research team led by Ryan Abbott, a professor of law and health sciences at the University of Surrey in the U.K., challenged the prevailing inventorship standard in the context of AI's inventions. In *The Artificial Inventor Project*, Abbot considers the historical rationale for the traditional "inventorship," but challenges how this conventional concept fits into unconventional means of modern creation, and further, proposes how reconciliation can be achieved through a simple paradigm shift:

> The restriction of inventorship to individuals was intended to prevent corporate inventorship. It was not the result of seriously considering autonomous machine invention, and should not therefore prohibit subsistence of intellectual property rights where there is no natural person who qualifies as an inventor. . .
>
> The output of autonomously inventive machines should be patentable if it meets the requirements of patentability set out in law. The primary purpose of patent law is to incentivize innovation, together with incentivizing the disclosure of information, and the commercialization and development of inventions. Allowing patents for machine output incentivizes the development of inventive machines, which ultimately promotes innovation. . .

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[157] *See* 35 U.S.C. § 118 (providing that a patent applicant may be "[a] person who otherwise shows sufficient proprietary interest in the matter may make an application for patent on behalf of and as agent for the inventor…").

[158] *See* Robert J. Lesperance, *Who Owns the Intellectual Property: The Employee or the Employer?* LESPERANCE MENDES LAWYERS (2013), http://lmlaw.ca/wp-content/uploads/2013/12/who_owns.pdf (discussing the practice of individual employees assigning patent ownership rights to their corporate employers).

> Failure to permit patent protection for the output of autonomously inventive machines threatens to undermine the patent system by failing to encourage the production of socially valuable inventions. . .
>
> The machine's owner should be the default owner of any intellectual property it produces and any benefits that would otherwise subsist in an inventor who is a natural person.[159]

The resulting dilemma is that legislative purists loath to grant inventorship eligibility to AI, but could not name natural persons as inventors to AI-generated inventions because those persons could not be questioned, criticized, cross-examined, or have their credibility scrutinized to make factual and legal determinations of inventorship. The obvious flaw in refusing AI's inventorship is that its inventions risk becoming part of the public domain. For innovation to go unrewarded goes against the premise of patent law, which is to reward the inventor with a limited monopoly on the invention disclosed in the patent.[160]

To test various patent offices, Abbott filed patent applications at the U.S. Patent and Trademark Office, the European Patent Office, and the U.K. Intellectual Property Office. He named AI as the inventor, instead of naming a natural person as the inventor.[161] The subjects of the applications are not terribly sophisticated: one is a food container capable of changing its shape, and another is a flashlight system for use in emergency contexts.[162] Abbott's applications call for a new legal regime by forcing these three

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[159] Ryan Abbott, *Patents and Applications*, THE ARTIFICIAL INVENTOR PROJECT, http://artificialinventor.com/?page_id=22 (last visited Aug. 11, 2019) (internal citations omitted).

[160] Law Teacher, *A Patent is a Government Granted Monopoly on an Invention*, LawTeacher.net (Nov. 2013), https://www.lawteacher.net/free-law-essays/commercial-law/a-patent-is-a-government-granted-monopoly-on-an-invention-commercial-law-essay.php

[161] Martin Coulter, *Patent Agencies Challenged to Accept AI Inventor*, Financial Times, (July 31, 2019), https://www.ft.com/content/9c114014-b373-11e9-bec9-fdcab53d6959. *See also* Leo Kelion, *AI System 'Should Be Recognised as Inventor'*, BBC News, (Aug. 1, 2019), https://www.bbc.com/news/technology-49191645; Melissa Locker, *Can a Robot be an Inventor? A New Patent Filing Aims to Find Out*, Fast Company (Aug. 1, 2019), https://www.fastcompany.com/90384902/can-a-robot-be-an-inventor-a-patent-filing-aims-to-find-out; Rory O'Neill, *Researchers File Patents with AI as Sole Inventor*, World Intell. Prop. Rev., (Aug. 2, 2019), https://www.worldipreview.com/news/researchers-file-patents-with-ai-as-sole-inventor-18423.

[162] *Id.*

patent offices into the spotlight, since they all operate under frameworks that restrict inventorship to natural persons.[163]

The three patent offices declined to comment on Abbott's pending applications[164]. Subsequently, the United States District Court for the Eastern District of Virginia evaluated Abbot's application filed in the U.S. Patent and Trademark Office and declined to qualify AI as an inventor.[165] In spite of the ideological commentary spurred by Abbott's initiative, patent offices are creatures bound by rules, not social need. Therefore, without legislative reform, it is inconceivable that the patent offices will disregard the pillar of inventorship's very definition. The otherwise-deserving AI inventor who has contributed to a novel, useful, and non-obvious invention will thus likely not be granted patent rights.

Further, and from a practical standpoint, AI must be capable of articulating the essence of its inventions' novelty and utility, in the spirit of *Apotex Inc.* and its progeny. One can only speculate as to how AI will recreate these elements, and by extension, how its processes, methodologies, and credibility can be cross-examined.

This is not to say that Abbott's efforts are all for nothing; in fact, his strategy is likely far from arbitrary.[166] He predicts that automated invention is the future of innovation, and without acknowledging AI as an inventor, "the whole intellectual property system will fail to work."[167] IP is notoriously enigmatic, and even seasoned jurists can find themselves grappling with the subtleties characterizing copyrights, trademarks, and patents. Besides the technical nuances, perhaps one of the most challenging obstacles to overcome in recognizing AI as an inventor is the persistent reluctance to challenge the idea that "people conceive, not companies."[168] At the very least, Abbott's efforts to grab headlines bring this issue before the eyes of those who shape Canadian and American legal landscapes: the voting public. The voting populace must recognize the shortcomings of its laws in order to demand changes. It would not do Abbott justice to characterize his patent applications as a glorified publicity stunt. His efforts are the first to demonstrate the inevitable: society demands AI to innovate for us, but the

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[163] *Id.*

[164] *Id.*

[165] Thaler v. Hirshfeld, 558 F. Supp. 3d 238, 240 (E.D. Va. 2021), *aff'd sub nom.* Thaler v. Vidal, 43 F.4th 1207 (Fed. Cir. 2022).

[166] Abbott said his unprecedented move was intended to "raise awareness and effect change" in patent law. O'Neill, *supra* note 175.

[167] Kelion, *supra* note 147.

[168] New Idea Farm Equip. Corp. v. Sperry Corp., 916 F.2d 1561, 1566 n.4 (Fed. Cir. 1990).

existing legal frameworks are ill-equipped to handle such a technological leap.

V. Commerce: Trademarks

The United States and Canadian copyright and patent regimes are not friendly territory for AI. While these fundamentally creation-based aspects of IP fall short, AI may be able to capitalize on the commerce-driven nature of trademarks.

After examining copyright and patent legislation and their associated common law interpretations, the same analysis in the trademark context reveals a surprisingly liberal definition of the party who may apply for a trademark. In Canada, a trademark is defined as: "[A] sign or combination of signs that is used or proposed to be used *by a person* for the purpose of distinguishing or so as to distinguish their goods or services from those of others.[169]

Similarly, in the United States: "Normally the owner of a mark is the *person* who applies the mark to goods that he or she produces, or uses the mark in the sale or advertising of services that he or she performs."[170]

Interestingly, notwithstanding Canadian and American copyright and patent regimes' strict limitation of a "person" to a natural person, neither jurisdiction's statutory framework imposes the same restriction in the trademark realm.[171] For instance, the Canadian definition of "person" is context-dependent, and thus, allows flexible interpretation. Canadian courts have emphasized this flexibility many times, following the authority of the landmark 1974 case *John Labatt Ltd. v. Carling Breweries Ltd.*[172] The case articulated, "the definition [of 'person'] is very broad in its implications"[173] as part of its reasoning that "any person aggrieved" is synonymous with "any person interested."[174] This liberal reading, in conjunction with the many corporate trademark

[169] R.S.C., 1985, c. T-13, s. 2 (Can.) (emphasis added).
[170] Trademark Manual of Examining Procedure, § 803.01 (2022) (emphasis added).
[171] Trademarks Act, supra note 186 s. 2.1 (clarifying that reference to "person" includes two or more persons). Lanham Act, 15 U.S.C. § 1127 (clarifying that "person" refersto natural persons and juristic persons, which includes "a firm, corporation, union, association, or other organization capable of suing and being sued in a court of law" as well as the United States and any State, agency, or instrumentality thereof).
[172] 18 C.P.R. (2d) 15.
[173] *Id.* para. 51.
[174] *Id.* para. 52.

applicants and owners,[175] gives reason to anticipate AI as a trademark owner in the future.

Similarly, the United States Patent and Trademark Office (USPTO) is no stranger to granting trademark registrations to non-human owners. In light of the analysis of USPTO's patent schemes, it should come as no surprise that even this most lenient of the IP regimes is subject to bright-line limitations. Although "person" is a term more expansive than natural person, it refers only to juristic persons; that is, persons capable of suing and being sued in a court of law.[176] Specifically listed as examples of juristic persons are firms, corporations, unions, associations, and other organizations.[177] Therefore, to definitively qualify as a trademark owner, AI must have an established right to sue or to defend in court, the intricacies of such potentials to be discussed below.

Although trademark ownership could be AI's best chance at appearing on a certificate of IP registration, from a practical perspective, why would AI need registered trademarks at all? The answer requires contemplation of, first, the premise of trademark registration, and second, AI's role in society.

Across the United States and Canada, trademarks' role in commerce is to enable consumers to recognize the origin of goods and services. Consumer choice is the foundation of competition and other fair and just commercial practices.[178] Under this traditional model, it would behoove AI to own trademark registrations so that consumers could better distinguish a preferred AI brand from others. Although AI creates new works of art, devices, and other innovations, it does not make its mark in commerce by *being* a competitor. Rather, AI is leveraged *by* competitors.

Consumers are likely familiar with the use of AI in marketing strategies that involve targeted product

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[175] For example, the Canadian Trademarks Database lists 404 active trademark registrations held by Disney Enterprises, Inc. as of September 3, 2022. Canadian Trademarks Database, GOVERNMENT OF CANADA, https://www.ic.gc.ca/app/opic-cipo/trdmrks/srch/home?lang=eng (choose "Current owner name" in the search field dropdown menu; then type in "Disney Enterprises, Inc."; then scroll down to ensure that, under "Additional Search Options," "Trademarks" is the only category selected and that "Registered" is the only status selected).

[176] 15 U.S.C. § 1127.

[177] *Id.*

[178] The Hon. Roger T. Hughes, and others, *Halsbury's Laws of Canada – Trademarks, Passing Off and Unfair Competition* (2016 Reissue) II(1)(1)(b) (referring to Canadian perspectives); Qualitex Co. v. Jacobson Prods. Co., Inc., 514 U.S. 159, 163–64 (1995) (citing J. THOMAS MCCARTHY, MCCARTHY ON TRADEMARKS AND UNFAIR COMPETITION § 2.01[2] (3d Ed., Thomson West 1994)) (referring to American perspectives).

suggestions. For instance, online shopping assistants leverage AI to evaluate parameters that can include browsing habits and purchase history to make a variety of suggestions such as "recommendations based on your order" to encourage subsequent sales.[179] For example, when a prospective consumer makes a generic request to Alexa to purchase an item, it is Alexa, not the consumer, who decides which particular item to purchase. Alexa considers market factors including trademark and brand standing.[180]

This dynamic forecasts a divergent future for trademarks: Do consumers rely on trademarks to drive buying choices, or are trademarks used to influence consumer options? On one hand, the more consumers rely on AI for product selection, the more retailers need to anticipate AI's decision-making influences, and cater to them accordingly. To an extent, businesses are accustomed to tailoring their online market strategy to anticipate the needs of a referral source. For instance, companies already incorporate search engine optimization to increase visibility and traffic to their websites by virtue of catering to search engines' processes.

On the other hand, retailers could decide to more aggressively market their brands to consumers and increase how viciously they defend their respective trademarks from competitors. Under this strategy, a brand would have to be so influential that consumers specifically demand it from AI-based shopping platforms. That is, instead of beginning an online shopping expedition with the generic inquiry, "women's running shoes," consumers would intuitively demand the brand by specifying in the search parameter, "women's Nike running shoes." Although this level of marketing may seem unattainable, such branding prowess has been achieved many times in the past. Ironically, these brands lose their registration status on the basis that the trademark name has become a generic way in which consumers refer to the product, as opposed to a distinctive identifier of one brand over another. A classic example is The Bayer Company's "Aspirin." The pharmaceutical manufacturer's predecessor registered the trademark on May 5, 1899 to identify its brand of acetyl salicylic acid pain killer. While Aspirin remains a registered trademark in Canada,[181] The Bayer Company lost its United States registration in 1921.

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[179] Lee Curtis & Rachel Platts, *AI is Coming and it Will Change Trade Mark Law*, MANAGINGIP.COM (2017), https://www.hgf.com/wp-content/uploads/2020/07/09-13-AI.pdf.

[180] *Id.*

[181] ASPIRIN, Registration No. TMDA6889 (Can.); ASPIRIN, Registration No. NFLD761 (Can.).

A federal court in New York determined that Aspirin became synonymous with the product it identified such that it became a generic term, and consequentially, the trademark no longer served to distinctly identify the source of the product.[182] Aspirin is not the only trademark to fall victim to such genericide: escalator,[183] thermos,[184] cellophane,[185] and pilates[186] have met similar fates.

Accordingly, if AI was to enter the realm of trademark ownership, it should finesse its commercial strategy according to its ultimate consumer. Is it providing consumer recommendations, presenting an advertising platform, or delivering goods and services direct to consumer? Like traditional businesses, AI would further need to contemplate its brand's image. Considerations such as transparency, accountability, corporate citizenship, and social contracts could require AI to have a deep understanding of consumer motivators. Thus, although the trademark framework is the likely gateway for AI to make its introduction into IP laws, prevailing commercial strategies will determine whether there is any incentive for AI to own trademark registrations. More broadly, despite copyright and patent laws' restriction of AI being a creator, it could be that these are the contexts where it is most important to enshrine AI's rights.

VI. Conflict: Litigation

AI's capabilities and society's expectations thereof grow more prolific every day. The benefit of AI could encroach upon the rights of parties. When this happens, who is accountable? While it is instinctive to worry about how AI may infringe upon a human's rights, it is also conceivable that humans may also exploit AI's vulnerabilities. In the United States and Canada, AI can neither sue nor be sued.

When pondering liability models that include AI accountability, it would be natural to default to existing liability models—negligence, strict liability, and products liability, to name a few—and hold responsible the entities that either set AI in motion or benefit from its results. Defaulting to this solution, however, is short-sighted in its focus on AI's current applications. AI is expected to be self-driven: AI

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[182] Bayer Co., Inc. v. United Drug Co., 272 F. 505, 509 (S.D.N.Y. 1921).
[183] Haughton Elevator Co. v. Seeberger, 85 U.S.P.Q. 80 (Comm'r Pat. & Trademarks 1950).
[184] King-Seeley Thermos Co. v. Aladdin Indus., 321 F.2d 577 (2d Cir. 1963).
[185] DuPont Cellophane Co., Inc. v. Waxed Prods. Co., Inc., 85 F.2d 75 (2d Cir. 1936).
[186] Pilates, Inc. v. Current Concepts, Inc., 120 F. Supp. 2d 286 (S.D.N.Y. 2000).

operating an autonomously sufficient business entity is within the realm of possibilities. If it can neither sue nor be sued, an AI-run business entity could be used as a sword to exploit others or as a shield to protect unscrupulous enterprises from third party liability. Jurists already see the vulnerabilities in the United States' and Canada's corporate liability framework;[187] it is not a far cry to anticipate that AI will similarly be used to absorb the legal and moral hazards[188] of conflicts in commerce.

Many North American countries are on the precipice of litigating AI issues. There are no reported decisions in Canada or the United States to date regarding liability for injuries involving autonomous vehicles. Yet AI accountability is hotly debated in this arena. For instance, The Insurance Bureau of Canada suggests that under its proposed single insurance policy—covering both human operators and automated technology—the insurer would have rights of subrogation against the party responsible for the collision, which could be the vehicle manufacturer or the technology provider.[189] In the same vein, the U.S. National Highway Traffic Safety Administration foresees that motor vehicle liability litigation will evolve into product liability litigation.[190]

Unfortunately, liability for AI-related innovations does not necessarily flow towards a corporate entity cleanly. The issue is further complicated when the AI is the de facto creator but not the creator by law under IP frameworks. The following hypothetical litigation scenarios under each IP discipline highlight a few of the gaps in Canadian and American law.

Consider a company, Selfie Corp., which uses AI to create unique sculptures. Selfie Corp. offers its art for sale by putting its pieces on display at an art show. A competing

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[187] *See, e.g.*, Jennifer Arlen & Reinier Kraakman, *Controlling Corporate Misconduct: An Analysis of Corporate Liability Regimes*, 72 N.Y.U. L. REV., no. 4, 687 (1987); Robert B. Thompson, *Unpacking Limited Liability: Direct and Vicarious Liability of Corporate Participants for Torts of the Enterprise*, 47 VAND. L. REV. NO. 1, (1994); Paul Halpern et al., *An Economic Analysis of Limited Liability in Corporation Law*, 30 U. TORONTO L.J., NO. 2, 117 (1980); Ronald J. Daniels, *Must Boards Go Overboard? An Economic Analysis of the Effects of Burgeoning Statutory Liability on the Role of Directors in Corporate Governance,* 24 CAN. BUS. L.J. 229 (1994).

[188] *See* William S. Laufer, *Corporate Liability, Risk Shifting, and the Paradox of Compliance*, 52 VAND. L. REV., NO. 5, 1341 (1999).

[189] INS. BUREAU OF CAN., Auto Insurance for Automated Vehicles: Preparing For the Future of Mobility, 11 (2018).

[190] NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., Critical Reasons for Crashes Investigated in the National Motor Vehicle Crash Causation Survey (2018).

company attends the show and quickly creates replicas of the sculptures, subsequently selling the copied artwork for half of Selfie Corp.'s asking price. Under copyright law, AI would be the author of the sculptures for the same reason that Naruto, the famous selfie-taking monkey, was the author of the selfie.[191] But both Selfie Corp. and the AI creator lack standing to bring action under copyright infringement as only humans can be authors[192] and Selfie Corp. did not create the work. The result is that parties like Naruto and Selfie Corp. are vulnerable to infringement and other trespasses on their rights under copyright because the courthouse doors will not open for them.

Similar issues arise under patent law. If no human contributes as an inventor, the inventions are then "inventorless" and the rights would not belong to anyone. Without the rights inherent in patent ownership, anyone could make, use, sell, license, import, or export the innovation disclosed in the patent applications.

Even in the narrow trademark situation contemplated above involving AI suggesting products to consumers, a number of conflicts can arise. To what extent can AI be held accountable for suggesting counterfeit articles as opposed to genuine ones? As to the threshold question in infringement issues, can AI measure a consumer's likelihood of confusing one brand with another? How invasive can AI get into individuals' privacy in order to identify persons within the brand's demographic? Where transparency is concerned, celebrity model Kendall Jenner was sued for providing her Instagram followers with a promotion code to buy VIP tickets to the failed Fyre music festival without indicating that she was paid to promote the festival.[193] When AI makes similar endorsements, should consumers expect some level of scrutiny from AI as to the quality of the products or services it promotes? To what degree can consumers demand transparency relating to AI's paid promotions? Would AI have a right to assert defenses if it became a defendant under similar circumstances?

For these reasons, the litigation landscape needs to consider accommodation mechanisms for disputes that may arise when AI conducts business alongside human-driven enterprises, and possibly even prepare for AI versus AI scenarios where the wrongdoings of one causes loss to the other.

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[191] *See Naruto v. David John Slater, et. al.*, 888 F.3d 418 (9th Cir. 2018).

[192] *Id.* at 426.

[193] Complaint against Kendall Jenner, Inc., in Adversary Case No. 19-01347, *In re Fyre Festival LLC*, No. 17-11883 (MG) (S.D.N.Y. Aug. 28, 2019).

VII. Conclusion

It is challenging to pinpoint AI's overall impact on this modern world. Some embrace the known and unknown possibilities; skeptics' opinions range from lukewarm doubt to AI as a harbinger of the Age of Reckoning.[194] Even when considerably narrowing this examination to the parameters of Canadian and American intellectual property law, it is clear that society has become so enamored with AI's creations and commercial contributions that it has overlooked how these innovations fit into the legal mechanics of IP and conflict management.

Exploring the IP and litigation landscapes reveals that AI introduces soft spots in the underbelly of the Canadian and American legal systems. Courts and legislatures historically struggle to accommodate new players in the innovation game, and AI's complexities will be no exception. This Article identifies the historical underpinnings and current interpretations behind the Canadian and American IP frameworks in hopes that this perspective can help shape laws that anticipate a future where humans and AI are intertwined.

With appreciation of AI's potential to accomplish goals with efficiency and efficacy that far exceed human capabilities, the late Stephen Hawking prophesized that if mankind cannot align its goals with that of AI, "we're in trouble."[195]

[194] Bi, *supra* note 18.
[195] Hawking, *supra* note 1.