



The legal nexus between AI-generated creations and intellectual property in South Africa

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ABSTRACT

This dissertation examines the intricate intersection between artificial intelligence (AI) and intellectual property (IP) law, focusing particularly on its implications for copyright and patent law both internationally and within South Africa.

In recent years, the rapid evolution of artificial intelligence and its ability to generate creative works by simulating human expression is challenging existing legal frameworks and prompting reconsideration of long-established intellectual property principles. Questions emerge whether these AI-generated outputs are protectable at all, whether there is any infringement present during the input or output phases, and who, if any, should be held liable for possible IP infringement. A comparative analysis of foreign jurisdictions reveals divergent approaches to the copyrightability and patentability of AI outputs, and current South African law, like many others, appears ill-equipped to fully address the nuances of AI-generated content.

Furthermore, this research delves into ethical considerations, such as the biases embedded within AI training datasets and the unauthorised use of artists' personality rights through deepfakes, and the broader issue of inadequate global regulation surrounding AI. These concerns are juxtaposed with a discussion on whether the possible inability to secure IP protection for AI-generated outputs, could deter investment and development in this field.

Ultimately, this dissertation aims to contribute to the discourse on reconciling innovation and creativity with the need for legal safeguards in an AI-driven era.

Keywords: intellectual property, artificial intelligence, large language models, copyright, patents

LIST OF ABBREVIATIONS AND ACRONYMS

AI	Artificial Intelligence
AIPF	Artificial Intelligence Policy Framework
AMPTP	Alliance of Motion Picture and Television Producers
ASCAP	American Society of Composers, Authors and Publishers
BRIPTO	Brazilian Patent and Trademark Office
CIPC	Companies and Intellectual property Commission
CISAC	International Confederation of Societies of Authors and Composers
CNIPA	China National Intellectual Property Administration
DABUS	Device for the Autonomous Bootstrapping of Unified Sentience
DCDT	Department of Communications and Digital Technologies
ELVIS	Ensuring Likeness Voice and Image Security Act
EPC	European Patent Commission
EPO	European Patent Office
EU	European Union
GDPR	General Data Protection Regulation
ICO	Information Commissioner's Office
IP	Intellectual Property
LAION	Large-scale Artificial Intelligence Open Network
LLM	Large Language Model
PCT	Patent Cooperation Treaty

PETA	People for the Ethical Treatment of Animals
PHOSITA	A person having ordinary skill in the art
POPIA	Protection of Personal Information Act
RAGHAV	Robust Artificially Intelligent Graphics and Art Visualizer
RPA	Robotic Process Automation
SAG	Screen Actors Guild
TDM	Text and Data Mining
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UK	United Kingdom
UKIPO	United Kingdom Intellectual property Office
US	United States
USCO	United States Copyright Office
USPTO	United States Patent and Trademark Office
WGA	Writers Guild of America
WIPO	World Intellectual property Organisation
WTO	World Trade Organisation

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Chapter 1 Introduction

1.1 A rapidly changing world of AI creations/inventions

"If you steal from one person, it's plagiarism; if you steal from many, it's research."¹ A century later, Mizner's quote evokes more arguments than he would have ever imagined. With the vast improvements in the field of artificial intelligence (AI) in the past few years (and years to come), intellectual property and IP practitioners are being challenged in a manner never seen before, as these intelligent programs can no longer be regarded as a mere tool in the process of creating works or inventing inventions, but are, themselves, capable of making many, if not all, of the decisions involved in the creative and inventive process - without the need for any human intervention. Emanating from this, terms such as Large Language Models (LLMs), Generative AI, and Artificially-Generated Creations or Inventions have taken the IP world by storm.

Intellectual property (IP), in its broad form, is that part of the law which bestows the exclusive right of exploitation, amongst others, on individuals and businesses for their creations and inventions.² The *Copyright Act 98 of 1978*³ (hereinafter referred to as the *Copyright Act*) aims to "regulate copyright and to provide for matters incidental thereto".⁴ According to the *Copyright Act*, for eligible works⁵ to be protected thereunder (subject to other non-eligibility criteria), the created work must be original;⁶ be reduced to a material form;⁷ and created by a qualified person⁸. A further common law requirement also needs to subsist, that of propriety.⁹ When using a computer to generate eligible creative works, the author (and copyright holder) is the human author, namely the person who made the necessary arrangements for the

¹ Case *Tales of a Wayward Inn* 248.

² Adams & Adams 2020 <https://www.adams.africa/intellectual-property/intellectual-property-law-south-africa/#:~:text=IP%20law%20gives%20individuals%20and,the%20recognition%20that%20the%20deserve> accessed 28 June 2023.

³ *Copyright Act* 98 of 1978.

⁴ South African Government 2015 <https://www.gov.za/documents/copyright-act-16-apr-2015-0942>.

⁵ Section 2(1) of the *Copyright Act* 98 of 1978.

⁶ Section 2(2) of the *Copyright Act* 98 of 1978.

⁷ Section 2(2) of the *Copyright Act* 98 of 1978.

⁸ Section 3(1) of the *Copyright Act* 98 of 1978.

⁹ Van der Merwe *et al Law of Intellectual Property in South Africa* 203.

creation of the work, who merely utilised the computer as a tool to generate such.¹⁰ The *Copyright Act*, however, being promulgated in 1978, did not originally make provision for such computer-generated works, being a rather foreign concept at the time. However, with the swift and accelerated speed by which technology progressed, and is progressing, the Act has, arguably, become outdated (even after the introduction of "computer programs" to the Act in 1992). Similarly, the *Patents Act 57* of 1978¹¹ which makes provision for the "registration and granting of patents for inventions and for matters connected therewith"¹², also lacks the necessary amendments suitable for today's landscape. This is emphasised by the wording of section 27(1) of the *Patents Act*, simply referring to an invention made by an "inventor" and not specifying whether such inventor is obligated to be a "human" inventor.¹³

Recently, South Africa became the first nation in the world to award a patent for an invention listing an AI program – DABUS (Device for the Autonomous Bootstrapping of Unified Sentience) as its inventor, albeit on technicalities (South Africa does not make provision for the material examination of patent applications and one merely has to comply with the formal requirements for such a patent to be awarded).¹⁴ The creator of DABUS, Stephen Thaler, stated that he merely provided information about numerous subject matter to DABUS and that DABUS subsequently devised the idea of, and created, the "interlocking food containers" on its own without any input from others.¹⁵ Despite efforts to register such in other jurisdictions, the DABUS team, led by Ryan Abbott, a professor of Law and Health Sciences at the University of Surrey, had been unsuccessful in their bid to achieve global recognition of AI as authors or inventors and its subsequent creations.

Various authors, bodies, and courts globally have now started to contemplate whether such works, created solely by an AI machine, should indeed be protected. The United

¹⁰ Section 1 of the *Copyright Act 98* of 1978 (the definition of author in the context of a computer program is "the person who exercised control over the making of the computer program").

¹¹ *Patents Act 57* of 1978.

¹² South African Government 2015 <https://www.gov.za/documents/patents-act-9-apr-2015-0827>.

¹³ Section 27(1) of the *Patents Act 57* of 1978.

¹⁴ Knowles 2021 <https://www.thetimes.co.uk/article/patently-brilliant-ai-listed-as-inventor-for-first-time-mqj3s38mr>.

¹⁵ Knowles 2021 <https://www.thetimes.co.uk/article/patently-brilliant-ai-listed-as-inventor-for-first-time-mqj3s38mr>.

States of America, Australia, the United Kingdom, the European Patent Office, China, and the German Patent Office are some of these jurisdictions and bodies who have shown an increase in interest regarding authorship and inventorship of AI machines and their outputs.

Very recently, ethical questions have arisen regarding AI-generated music.¹⁶ An AI program created a song entitled "Heart on My Sleeve", imitating the voices and sound of popular artists Drake and The Weeknd.¹⁷ Similarly, an AI program, in collaboration with Microsoft, Delft University of Technology, The Mauritshuis and Museum Het Rembrandthuis, and ING, appropriately named "The Next Rembrandt" is capable of imitating the famous artist Rembrandt van Rijn's style of painting after being imprinted with 346 of the legendary artist's admired works.¹⁸ Associate Professor Ge Wang, of Stanford University, stated that these AI-generated creations and inventions are no longer a far-fetched concept imagined in science fiction, but are now a real issue to consider:¹⁹

And along with it is a ton of legal, ethical and artistic considerations that we didn't have to think about before in a practical sense. But now we do.²⁰

In response to the various dilemmas accompanying these new developments, the European Union has finalised its *EU AI Act* in which it regulates, *inter alia*, that copyrighted material used as input for "training" these AI programs, seen in, for example, The Next Rembrandt and the creation of Heart on My Sleeve referred to earlier, will have to be disclosed in "sufficient detail".²¹ This training is referred to as "machine learning" in the world of software and encompasses the procedure in which the AI program processes enormous amounts of data in order to accurately identify

¹⁶ Veltman 2023 <https://www.npr.org/2023/04/21/1171032649/ai-music-heart-on-my-sleeve-drake-the-weeknd>.

¹⁷ Veltman 2023 <https://www.npr.org/2023/04/21/1171032649/ai-music-heart-on-my-sleeve-drake-the-weeknd>.

¹⁸ Veltman 2023 <https://www.npr.org/2023/04/21/1171032649/ai-music-heart-on-my-sleeve-drake-the-weeknd>.

¹⁹ Veltman 2023 <https://www.npr.org/2023/04/21/1171032649/ai-music-heart-on-my-sleeve-drake-the-weeknd>.

²⁰ Veltman 2023 <https://www.npr.org/2023/04/21/1171032649/ai-music-heart-on-my-sleeve-drake-the-weeknd>.

²¹ European Commission 2023 [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698792/EPRS_BRI\(2021\)698792_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698792/EPRS_BRI(2021)698792_EN.pdf).

similarities or patterns.²² Naturally, the more data that is used in the training process, the more accurate or unique the output will be.²³ Consequently, these datasets used as training may include copyrighted content, such as music and paintings, without the necessary consent or licensing from the original author and/or copyright holder having been obtained.²⁴ If such use cannot be linked to one of the exceptions to copyright infringement, the copyrighted content within the dataset may very well be infringed. However, questions still arise whether the eventual output itself infringes on copyrighted material or whether it can be seen, from the perspective of the AI program, as inspiration from the training through machine learning.²⁵ Furthermore, even if one argues that the output indeed constitutes infringement, the question of "who" infringed arises. Similar to the EU, the United States Copyright Office instituted an Artificial Intelligence Initiative which will "examine the copyright law and policy issues raised by artificial intelligence".²⁶

If it is found that AI-generated works are not protected, and therefore available to all in the public domain, this might discourage inventors from creating such generative AI programs, inhibiting the progression of technology and innovation globally. As stated by the DABUS team in their bid for patent protection for their AI-generated invention:

There was no human inventor in this case. But if you can't name the AI as the inventor, and you have to name an inventor, then you don't have a patent.²⁷

The incentive theory, which is prevalent in the US, is more detached regarding the personhood of the author, and, in turn, therefore opens up a space to argue the case for non-human authors and copyrightability or patentability of their work, stimulating

²² Bikbaeva 2023 <https://www.thefashionlaw.com/ai-trained-on-copyrighted-works-when-is-it-fair-use/>.

²³ Bikbaeva 2023 <https://www.thefashionlaw.com/ai-trained-on-copyrighted-works-when-is-it-fair-use/>.

²⁴ Bikbaeva 2023 <https://www.thefashionlaw.com/ai-trained-on-copyrighted-works-when-is-it-fair-use/>.

²⁵ Bikbaeva 2023 <https://www.thefashionlaw.com/ai-trained-on-copyrighted-works-when-is-it-fair-use/>.

²⁶ Copyright.gov 2023 <https://www.copyright.gov/newsnet/2023/1004.html>.

²⁷ Knowles 2021 <https://www.thetimes.co.uk/article/patently-brilliant-ai-listed-as-inventor-for-first-time-mqj3s38mr>.

growth in the evermore popular era of AI.²⁸ Although the AI program itself does not require incentivization, or in fact care about being incentivised, it would, however, be advantageous for the human behind the creation of the AI program.²⁹ The motivation for incentivisation should not be misconstrued, with the creator of the AI program being the ultimate creator or inventor, as such would be too far removed from the eventual work created or invented by the program itself.³⁰ Furthermore, there is a growing argument for the compensation of trainers, referred to earlier, in teaching the AI to create or invent on its own.³¹

The original artist's rights should, of course, also be considered when one examines the IP implications of these creations or inventions. Stability Ltd, owner of Stability AI who are the developers of a very popular "text-to-image" AI program called Stable Diffusion, were taken to court for copyright infringement.³² The three plaintiffs, who are all artists, claimed that the defendant violated their copyrights through its use of a dataset containing their works, amongst other artists' works, for purposes of Stable Diffusion's machine learning.³³ In the motion to dismiss the suit, the judge stated that claims regarding AI-generated images are, at present, implausible as it is difficult to prove "substantial similarity" between the AI-generated images and the creations of the artists.³⁴ Importantly, in South Africa, section 2(3) of the *Copyright Act* states:

A work shall not be ineligible for copyright by reason only that the making of the work, or the doing of any act in relation to the work, involved an infringement of copyright in some other work.³⁵

The Beijing Court recently ruled that copyright protection can be granted to images created by Stable Diffusion, however the court based its decision on the notion that

²⁸ Frosio *Should We Ban Generative AI, Incentivise It or Make It a Medium for Inclusive Creativity?* 10.

²⁹ Frosio *Should We Ban Generative AI, Incentivise It or Make It a Medium for Inclusive Creativity?* 10.

³⁰ Frosio *Should We Ban Generative AI, Incentivise It or Make It a Medium for Inclusive Creativity?* 10.

³¹ Frosio *Should We Ban Generative AI, Incentivise It or Make It a Medium for Inclusive Creativity?* 11.

³² *Andersen v. Stability AI Ltd.*, 3:23-cv-00201, (N.D. Cal.) (USA).

³³ *Andersen v. Stability AI Ltd.*, 3:23-cv-00201, (N.D. Cal.) (USA) para 1.

³⁴ *Andersen v. Stability AI Ltd.*, 3:23-cv-00201, (N.D. Cal.) (USA).

³⁵ Section 2(3) of the *Copyright Act* 98 of 1978.

AI is used as a tool to generate original art.³⁶ In this particular case, the user had continued to modify the image generated by the AI after prompting such.³⁷ It would seem that the US differs from this approach in that on 5 September 2023, it held that even though a user had used 624 prompts before arriving at the eventual output by the text-to-image generator Midjourney, the Copyright Review Board refused copyright protection for such.³⁸ Not only do these cases pose an ethical dilemma, but they open the debate of whether AI can be held liable for infringement of others' IP rights at all.

As stated previously, the only country in the world which has agreed to an AI program being classified as an inventor, is South Africa.³⁹ The Australian Courts, regarding DABUS, after an exhaustive attempt to list the AI program as the inventor for its invention, ultimately ruled that inventions by non-human inventors cannot be patented.⁴⁰ This followed after a primary judge in the Federal Court acknowledged that an AI program is not barred from being listed as such, however, on appeal from the patents commissioner, the Full Federal Court held that, under the current laws of Australia, this is not possible.⁴¹ IP Australia, Australia's Government agency administering all intellectual property rights for the country, subsequently took the responsibility to examine the implications of AI-generated content for Australian IP rights.⁴² It concluded that the IP system might have to undergo a significant change in that AI programs are introducing more actors and therefore creating a different system.⁴³ The agency stated that the norms surrounding these programs will need to

³⁶ Hayo News 2023 <https://www.hayo.com/article/6566a5154d632b47b3e4be6e?c=articles>.

³⁷ Hayo News 2023 <https://www.hayo.com/article/6566a5154d632b47b3e4be6e?c=articles>.

³⁸ Hayo News 2023 <https://www.hayo.com/article/6566a5154d632b47b3e4be6e?c=articles>.

³⁹ Knowles 2021 <https://www.thetimes.co.uk/article/patently-brilliant-ai-listed-as-inventor-for-first-time-mqj3s38mr>.

⁴⁰ Pinsent Masons 2022 <https://www.pinsentmasons.com/out-law/news/6australian-high-court-pulls-plug-on-landmark-dabus-ai-patent-application>.

⁴¹ Pinsent Masons 2022 <https://www.pinsentmasons.com/out-law/news/6australian-high-court-pulls-plug-on-landmark-dabus-ai-patent-application>.

⁴² IP Australia <https://www.ipaustralia.gov.au/news-and-community/news/2023/07/07/04/48/generative-ai-and-the-ip-system-what-does-it-all-mean>.

⁴³ IP Australia <https://www.ipaustralia.gov.au/news-and-community/news/2023/07/07/04/48/generative-ai-and-the-ip-system-what-does-it-all-mean>.

evolve rapidly as these technologies are still in their infancy and one cannot merely rely on the current state of affairs of their capabilities.⁴⁴

The courts in the UK are currently grappling with the same issue. The DABUS team argued that Thaler would make a false declaration if he submitted that he himself is the inventor as he was not the "actual devisor" of the invention.⁴⁵ The court, in its closing remarks, stated that it recognises:

the significance of the challenges of our current law of the development of artificial intelligence... It clearly is an issue relating to intellectual property rights, as well as contract and tort.⁴⁶

Although the US have also recently denied DABUS' bid to be an inventor,⁴⁷ the United States Patent and Trademark Office held its first public listening session regarding AI inventorship,⁴⁸ clearly emphasising the relevance and lack of certainty in the topic matter.

Similar issues are being considered by the World Intellectual Property Organisation (WIPO), who have held numerous sessions in terms of IP- and AI-related issues. In the most recent session, aptly entitled "WIPO conversation on intellectual property (IP) and frontier technologies",⁴⁹ it was mentioned that the China National Intellectual Property Administration (CNIPA) is currently in the process of creating a database of global AI-related patent applications.⁵⁰ In its discussion about AI inventorship, the moderator posed the question as to why an AI program could not be classified as an

⁴⁴ IP Australia <https://www.ipaustralia.gov.au/news-and-community/news/2023/07/07/04/48/generative-ai-and-the-ip-system-what-does-it-all-mean>.

⁴⁵ Bond 2023 <https://www.twobirds.com/en/insights/2023/uk/rapid-reaction-who-needs-an-inventor-uk-supreme-court-hears-dabus-ai-patent-appeal>.

⁴⁶ *Thaler (Appellant) v Comptroller-General of Patents, Designs and Trademarks (Respondent)* UKSC 2021/0201 (UK).

⁴⁷ *Thaler v. Vidal*, No. 21-2347 (Fed. Cir.) (USA).

⁴⁸ USPTO 2023 <https://www.uspto.gov/about-us/events/ai-inventorship-listening-session-east-coast>.

⁴⁹ WIPO 2022 https://www.wipo.int/edocs/mdocs/mdocs/en/wipo_ip_conv_ge_2_22/wipo_ip_conv_ge_2_22_3.pdf.

⁵⁰ WIPO 2022 https://www.wipo.int/edocs/mdocs/mdocs/en/wipo_ip_conv_ge_2_22/wipo_ip_conv_ge_2_22_3.pdf 4.

inventor when it clearly replicates a human's ability to mentally process information.⁵¹ Professor Abbott responded by stating that DABUS itself automatically performs the tasks that would otherwise classify a human as an inventor, and Dr D'Agostino suggested that where AI programs behave similarly to a human inventor, the IP ecosystem should adapt in order to accommodate such if it is to the public's benefit.⁵² Dr D'Agostino encouraged global policymakers to balance various interests and introduce an IP ecosystem that is appropriate to the changing circumstances.⁵³

1.2 Research question(s)

Numerous questions arise which provide the motivation for this research and emphasise the relevance of the topic matter. However, the main question this research attempts to answer is whether AI generated works and inventions can be protected under current South African intellectual property laws.

The main research question naturally flows into various sub-questions. The sub-questions referred to are: What is the IP implications for works or inventions created solely by an AI program compared to an AI program merely being used in the process of creating or inventing? Who is the holder and owner of the copyright or patent of these AI-generated creations or inventions? If these outputs cannot be protected under current IP laws, would these creations then resort under the public domain? How does one deal with the intellectual property challenges that come with the use of other works in the AI program's training datasets? Where does liability lie in instances where infringement proceedings are sought? What are the ethical dilemmas to consider when making use of AI in a creation or invention? Should the current legislation be amended, or improved upon, and how, to include the machine itself as

⁵¹ WIPO 2022
https://www.wipo.int/edocs/mdocs/mdocs/en/wipo_ip_conv_ge_2_22/wipo_ip_conv_ge_2_22_3.pdf 9.

⁵² WIPO 2022
https://www.wipo.int/edocs/mdocs/mdocs/en/wipo_ip_conv_ge_2_22/wipo_ip_conv_ge_2_22_3.pdf 9.

⁵³ WIPO 2022
https://www.wipo.int/edocs/mdocs/mdocs/en/wipo_ip_conv_ge_2_22/wipo_ip_conv_ge_2_22_3.pdf 9.

an author or inventor in South Africa (comparing the positions of various jurisdictions globally)?

This research will aim to rudimentarily answer these questions and provide clarity on the current, and proposed, positions internationally.

1.3 Focus of study and limitations

This research will provide an analysis of the *Copyright Act* and *Patents Act* relevant to their stance on AI-generated creations and inventions, focusing on the concepts of authorships or inventorships, personality (or personhood), and originality or novelty, inventiveness, and capability of use in industry. The relevance in the concepts and differences between *AI-generated* and *AI-aided* creations or inventions will be discussed, whereas focus will be placed on various ongoing international disputes surrounding DABUS and its bid for patenting its invention(s), as well as other generative AI programs and LLMs and their creative or inventive outputs. Consideration will be given to whether works created or invented by the AI program can be protected under the ambit of current outdated copyright and patent legislation. If so, to what extent will such be protected and who, in fact, holds the rights to such. This research will also explore the implications and consequences of affording, or not affording, such protection and whether the works created or invented form part of the public domain and its subsequent result in loss of incentivisation to invent if such works are indeed not protected. This writer will also examine whether the AI program itself can infringe on the rights of intellectual property-right holders through its creations or inventions. Furthermore, the writer will explore whether the liability connected to infringement may be traced back to the creator of the AI program him- or herself. The importance of existing right-holders' intellectual property, and the use of their works as input data for purposes of machine learning to create or invent the eventual AI-generated product, will be scrutinized. Lastly, the possibility and practicality of a universally accepted AI and IP Act for purposes of regulating the widespread use of creative machines and their works for the Trade-Related Aspects of Intellectual Property Rights (TRIPS) members will be discussed.

Although a large part of this research makes reference to "works", the IP implications of generative AI programs are not limited to copyright. Reference will be made to some of the most relevant cases involving patents, but seeing that most of these generative AI programs are aimed at works commonly protected by copyright (such as literary, artistic, or musical works), emphasis will be placed on such.

Further, while the writer appreciates the lack of certainty in law as it pertains to AI and IP rights, this research aims to provide as much clarity as possible regarding the positions of different jurisdictions, and attempts to consolidate what the best solution would be for the future of IP rights in the ever-evolving era of AI. In the WIPO-released AI factsheet entitled "*Generative AI – Navigating Intellectual Property*" this uncertainty is emphasized:

There is significant legal uncertainty whether AI tools, their training, use, and outputs represent IP infringements. The answer may vary by jurisdiction. Businesses and organizations should consider mitigating the risk by using IP compliant tools, seeking indemnities where possible, vetting datasets, and implementing technical and practical measures to reduce the likelihood of infringement.⁵⁴

⁵⁴ World Intellectual Property Organisation *Generative AI Navigating Intellectual Property* 6.

Chapter 2 Definitions and IP Requirements

Before the intricacies and overlaps between IP rights and AI (and the output created or invented through such or through the use of such) are analysed, it is imperative to lay the foundation of the requirements for copyright and patents in South Africa and attempt to define the term artificial intelligence. (The similarities and differences of the requirements from various jurisdictions compared to South Africa will be analysed throughout this research.)

2.1 Copyright

Copyright in South Africa is governed by the current *Copyright Act 98 of 1978* and is vested automatically when the work satisfies the prescribed requirements.⁵⁵ For copyright to subsist in a work, the work itself has to be either a literary work, musical work, artistic work, sound recording, cinematograph film, broadcast, programme-carrying signal, published edition work, or a computer program.⁵⁶ Traditional and indigenous works have also been added to this list of works under the *Intellectual Property Law Amendment Act 28 of 2013*, however, this Act never entered into force.⁵⁷ If a work falls within one of these categories, it has to further satisfy the requirements set out in the Act and that of common law (which is propriety) for copyright to vest.⁵⁸ The Act's requirements, which will be discussed in detail, are threefold, namely: the work must be original,⁵⁹ the work must be reduced to a material form,⁶⁰ and the work had to be made by a qualified person or initially published in the Republic of South Africa.⁶¹

⁵⁵ *Copyright Act 98 of 1978*.

⁵⁶ Van der Merwe *et al Law of Intellectual Property in South Africa* 195.

⁵⁷ *Intellectual Property Law Amendment Act 28 of 2013*.

⁵⁸ Van der Merwe *et al Law of Intellectual Property in South Africa* 195.

⁵⁹ Section 2 of the *Copyright Act 98 of 1978*.

⁶⁰ Section 2(2) of the *Copyright Act 98 of 1978*.

⁶¹ Section 3(1) of the *Copyright Act 98 of 1978*.

2.1.1 Originality

Section 2 of the Act requires a work to be original.⁶² Originality does not concern itself with novelty or inventiveness; however, as the court in *Appleton v Harnischfeger Corporation* so clearly put:

Originality in the context does not require that the work should embody a new or inventive thought or should express a thought in a new or inventive form. Originality refers to original skill or labour in execution: it demands that the work should emanate from the author himself and not be copied. This does not mean that work will be regarded as original only where it is made without reference to existing matter.⁶³

It should also be noted that the work as a whole is looked at when courts determine originality, as the court in *Moneyweb (Pty) Ltd v Media 24 Ltd and Another*⁶⁴ emphasised:

Under the Act, the inquiry is whether the work was original. The inquiry is not whether its parts are original.⁶⁵

To determine originality, courts usually refer to the concept of the "sweat of the brow".⁶⁶ In the *Moneyweb* case, the court described this process as the "application of the author's mind".⁶⁷

Interestingly, originality does not necessarily mean novelty, and the mere existence of an identical work does not preclude the latter work from enjoying copyright protection, if the latter's author created such in a *bona fide* manner.⁶⁸ Furthermore, section 2(3) states that a work:

Shall not be ineligible for copyright by reason only that the making of the work, or the doing of any act in relation to the work, involved an infringement of copyright in some other work.⁶⁹

⁶² Section 2 of the *Copyright Act* 98 of 1978.

⁶³ *Appleton v Harnischfeger Corporation* 1995 (2) SA 247 (A) 262 para 43.

⁶⁴ *Moneyweb (Pty) Ltd v Media 24 Ltd and Another* (31575/2013) [2016] ZAGPJHC 81 para 16.

⁶⁵ *Waylite Diary CC v First National bank Ltd* 1995 (1) SA 645 (A) 649.

⁶⁶ Van der Merwe *et al Law of Intellectual Property in South Africa* 204.

⁶⁷ *Moneyweb (Pty) Ltd v Media 24 Ltd and Another* (31575/2013) [2016] ZAGPJHC para 15.

⁶⁸ Van der Merwe *et al Law of Intellectual Property in South Africa* 205.

⁶⁹ Section 2(3) of the *Copyright Act* 98 of 1978.

2.1.2 Material form

Section 2(2) requires the work to be "written down, recorded, represented in digital data or signals or otherwise".⁷⁰ It is also held that the material form requirement, requires the work to have a certain degree of permanency.⁷¹ Section 2(2) may be seen to also embody the expression-idea maxim of copyright law: An idea does not enjoy copyright protection, only the sufficiently concretised expression of the idea can enjoy protection.⁷²

2.1.3 Made by a qualified person

Section 3(1) of the Act requires that the author, or co-authors, of the work is/are a "qualified person".⁷³ A qualified person is defined as a citizen of, or domiciled or resident in, South Africa.⁷⁴ In the case of a juristic person, such simply has to be incorporated under the laws of South Africa.⁷⁵ It should be noted, however, that by reason of TRIPS, it is sufficient for the qualified person to be a citizen of, or domiciled in, or resident of, or incorporated in, any member state of the World Trade Organisation (WTO).⁷⁶

2.1.4 Requirement of propriety

Besides the statutory requirements for the vesting of copyright, there is one common law requirement only, namely propriety.⁷⁷ The requirement of propriety is an essential part of a work's inherent features.⁷⁸ Van Der Merwe et al comments that:

Propriety is a requirement because it is against the public's interest to allow an author to benefit from works that are not proprietary.⁷⁹

⁷⁰ Section 2(2) of the *Copyright Act* 98 of 1978.

⁷¹ Van der Merwe *et al Law of Intellectual Property in South Africa* 209.

⁷² Van der Merwe *et al Law of Intellectual Property in South Africa* 209.

⁷³ Section 3(1) of the *Copyright Act* 98 of 1978.

⁷⁴ Section 3(1) of the *Copyright Act* 98 of 1978.

⁷⁵ Section 3(1) of the *Copyright Act* 98 of 1978.

⁷⁶ *Agreement on Trade-Related Aspects of Intellectual Property Rights* (TRIPS) (1995).

⁷⁷ Van der Merwe *et al Law of Intellectual Property in South Africa* 203.

⁷⁸ Van der Merwe *et al Law of Intellectual Property in South Africa* 203.

⁷⁹ Van der Merwe *et al Law of Intellectual Property in South Africa* 203.

Works that are not proprietary in this context will be immoral, obscene or deceptive.⁸⁰

2.2 Patents

Patents are governed by the *Patents Act* 57 of 1978 in South Africa.⁸¹ Unlike copyright in South Africa, patentable inventions need to be registered in order to benefit from patent protection.⁸² Section 25(1) of the Act specifies that the invention needs to be novel, involve an inventive step, and be capable of use in "trade, industry, or agriculture".⁸³

2.2.1 Invention

Simply put, an invention is either a process, or a product, or both.⁸⁴ Such process or product needs to be of a technical character.⁸⁵ The invention also requires to be complete, meaning that the inventor:

has discovered the interrelationship between the means employed and the result intended by the invention.⁸⁶

The invention needs to be feasible in that it is, in fact, capable of achieving its purpose.⁸⁷ The invention further has to be capable of repetition, i.e. "a person reasonably skilled" should be able to derive the same outcome when following instructions to do so.⁸⁸

2.2.2 Novelty

After one has established that the product or process which one is dealing with indeed qualifies as an invention, the next step is to ask whether the invention is new or novel.⁸⁹ This requirement involves a comparison with technology previously

⁸⁰ Van der Merwe *et al Law of Intellectual Property in South Africa* 203.

⁸¹ *Patents Act* 57 of 1978.

⁸² Section 25(1) of the *Patents Act* 57 of 1978.

⁸³ Section 25(1) of the *Patents Act* 57 of 1978.

⁸⁴ Van der Merwe *et al Law of Intellectual Property in South Africa* 363.

⁸⁵ Van der Merwe *et al Law of Intellectual Property in South Africa* 363.

⁸⁶ Van der Merwe *et al Law of Intellectual Property in South Africa* 363.

⁸⁷ Van der Merwe *et al Law of Intellectual Property in South Africa* 363.

⁸⁸ Van der Merwe *et al Law of Intellectual Property in South Africa* 365.

⁸⁹ Van der Merwe *et al Law of Intellectual Property in South Africa* 369.

disclosed.⁹⁰ These previously disclosed technologies are more commonly referred to as the "state of the art" and involve three types of categories: matter made available to the public;⁹¹ matter contained in a patent application;⁹² and matter which was secretly used on a commercial basis.⁹³ The *Patents Act* defines the state of the art as:

all matter (whether a product, a process, information about either, or anything else) which has been made available to the public (whether in the Republic or elsewhere) by written or oral description, by use or in any other way.⁹⁴

2.2.3 Inventive (non-obvious) step

Inventiveness, in its simplest form, can be described as an invention which discloses technological benefits not previously realised.⁹⁵ In order to determine whether an invention is inventive (or non-obvious), a three-part investigation ensues:

identifying the subject matter forming part of the state of the art; identifying the person skilled in the art as the notional person through whose eyes the court must assess inventiveness; [and] comparing the invention with appropriately selected disclosures through the eyes of the person skilled in the art.⁹⁶

For the assessment of non-obviousness, the state of the art is matter only made accessible to the public "by written and oral description" and does not include previous applications or inventions used on a commercial scale in secret.⁹⁷ The so-called notional person, through whose eyes the invention in question is evaluated, is described as "a person reasonably skilled in the art" and not an expert in the subject matter.⁹⁸ Although not an expert in the relevant subject matter, the notional person must, nevertheless, be suitably qualified to understand the field of the invention in question.⁹⁹ It is held that for an invention to be non-obvious, such invention "must involve a real inventive step forward".¹⁰⁰ If the alleged invention involved no level of

⁹⁰ Section 25(5) of the *Patents Act* 57 of 1978.

⁹¹ Section 25(6) of the *Patents Act* 57 of 1978.

⁹² Section 25(7) of the *Patents Act* 57 of 1978.

⁹³ Section 25(8) of the *Patents Act* 57 of 1978.

⁹⁴ Section 25(6) of the *Patents Act* 57 of 1978.

⁹⁵ Van der Merwe *et al Law of Intellectual Property in South Africa* 375.

⁹⁶ Van der Merwe *et al Law of Intellectual Property in South Africa* 375.

⁹⁷ Section 25(6) and 25(10) of the *Patents Act* 57 of 1978.

⁹⁸ Van der Merwe *et al Law of Intellectual Property in South Africa* 376.

⁹⁹ Van der Merwe *et al Law of Intellectual Property in South Africa* 376.

¹⁰⁰ Van der Merwe *et al Law of Intellectual Property in South Africa* 377.

ingenuity, it cannot be said to be non-obvious, however, it need not be of extraordinary proportions.¹⁰¹

If one is still unable to determine an alleged invention's inventiveness, one can certainly use secondary considerations. The question one can ask in these scenarios in order to guide the assessment, is how the alleged invention is "used or exploited".¹⁰² Factors such as the effort that went into the creation of the invention, what the success of the invention on a commercial scale is, and the influence of the invention on the technological profession, can be used to guide one's assessment of non-obviousness.¹⁰³

2.2.4 Use or application in trade, industry, or agriculture

The final requirement for an invention to be patentable is that the invention must be capable of being used or applied in trade, industry or agriculture.¹⁰⁴ This requirement is essentially an assessment on whether a patent should be granted or not taking into account policy considerations. The Act excludes certain inventions from being granted a patent, such as:

an invention the publication or exploitation of which would be generally expected to encourage offensive or immoral behaviour; or for any variety of animal or plant or any essentially biological process for the production of animals or plants, not being a micro-biological process or the product of such a process.¹⁰⁵

2.3 Artificial intelligence and robotic process automation

In 2018, the European Commission released a communication regarding the importance of AI regulation and attempted to define such by stating that AI is:

systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals.¹⁰⁶

¹⁰¹ Van der Merwe *et al Law of Intellectual Property in South Africa* 377.

¹⁰² Van der Merwe *et al Law of Intellectual Property in South Africa* 379.

¹⁰³ Van der Merwe *et al Law of Intellectual Property in South Africa* 379.

¹⁰⁴ Section 25(1) of the *Patents Act* 57 of 1978.

¹⁰⁵ Section 25(4) of the *Patents Act* 57 of 1978.

¹⁰⁶ European Commission Communication 2018 <https://eur-lex.europa.eu/legalcontent/EN/TXT/?uri=COM%3A2018%3A237%3AFIN>.

The act of being able to display intelligence in a manner "equivalent [to] or indistinguishable [from]" a human being's intelligence was also referred to by Alan Turing in an article posted in the 1950s, entitled *Computing Machinery and Intelligence*.¹⁰⁷ Referring to Turing's article, Chiabotto is of the opinion that, in order to test for this criterion of intelligence:

[a] human being should be unable to distinguish the machine from another human being by comparing their creations.¹⁰⁸

The writer places particular emphasis on Chiabotto's wording for referring to "their creations" which may be interpreted to mean that the machine is thus also able to create.

Furthermore, Jha states that AI is "intelligent machines that can stimulate human reasoning, learning, and problem solving".¹⁰⁹

A very important distinction that one has to make, therefore, is to differentiate between AI and robotic process automation (RPA). RPA are programs that are designed to "automate repetitive, rule-based processes".¹¹⁰ The whole premise behind an RPA is to complete its objectives, which were predetermined, based on a set of rules.¹¹¹ Jha states that this is the main difference between AI and RPA programs – AI places an emphasis on cognitive tasks whereas RPA focuses on completing routine tasks.¹¹² AI is further able to learn from its input data and adapt its responses or its outputs based on ever-changing scenarios.¹¹³ The level of human involvement is also

¹⁰⁷ Turing *Computing Machinery and Intelligence* 433-460.

¹⁰⁸ Chiabotto *Intellectual Property Rights over Non-Human Generated Creations* 6.

¹⁰⁹ Jha 2023 <https://www.linkedin.com/pulse/artificial-intelligence-ai-vs-robotic-process-automation-rajoo-jha/>.

¹¹⁰ Jha 2023 <https://www.linkedin.com/pulse/artificial-intelligence-ai-vs-robotic-process-automation-rajoo-jha/>.

¹¹¹ Jha 2023 <https://www.linkedin.com/pulse/artificial-intelligence-ai-vs-robotic-process-automation-rajoo-jha/>.

¹¹² Jha 2023 <https://www.linkedin.com/pulse/artificial-intelligence-ai-vs-robotic-process-automation-rajoo-jha/>.

¹¹³ Jha 2023 <https://www.linkedin.com/pulse/artificial-intelligence-ai-vs-robotic-process-automation-rajoo-jha/>.

a key distinction, as AI programs are able to operate without intervention from humans, which is not the case for RPA programs.¹¹⁴

This is a crucial differentiation that legislatures need to consider when they draw up regulations and legislation involving AI and its cross-over with IP protection.

2.4 AI-aided v AI-generated creations or inventions

Another critical point is to distinguish between the two concepts of AI-aided creations or inventions, and AI-generated creations or inventions.

The main difference between these two concepts is, materially, the degree to which a human is involved in the eventual AI output.¹¹⁵ Previously, and perhaps what legal drafters had in mind when they originally promulgated IP legislation, computers were seen as a tool with which one can create other works.¹¹⁶ The user of the computer is in control of the creative process and decision-making, and most likely anticipates what the end product will be or resemble.¹¹⁷ This process can be referred to as AI-aided creations.¹¹⁸ South Africa's *Copyright Act* makes provision for these types of works, referring to them as computer-generated work.¹¹⁹ The Act states that an author of a:

Literary, dramatic, musical or artistic work or computer program which is computer-generated is the person by whom the arrangements necessary for the creation of the work were undertaken.¹²⁰

Therefore, with AI-aided creations, the user of the computer will be the author and holder of the copyright emanating from such work in South Africa.¹²¹ The United Kingdom has an almost identical provision in its *Copyright, Designs and Patents Act*.¹²²

¹¹⁴ Jha 2023 <https://www.linkedin.com/pulse/artificial-intelligence-ai-vs-robotic-process-automation-rajoo-jha/>.

¹¹⁵ AI Content Hacker 2023 <https://www.aicontenthacker.com/ai-generated-vs-ai-assisted#:~:text=The%20main%20difference%20between%20AI,algorithm%2C%20without%20any%20human%20input.>

¹¹⁶ Michiel *AI-Generated Creations: Challenging the traditional Concept of Copyright* 13.

¹¹⁷ Michiel *AI-Generated Creations: Challenging the traditional Concept of Copyright* 14.

¹¹⁸ Michiel *AI-Generated Creations: Challenging the traditional Concept of Copyright* 14.

¹¹⁹ Section 1(1) of the *Copyright Act* 98 of 1978.

¹²⁰ Section 1(1) of the *Copyright Act* 98 of 1978.

¹²¹ Section 1(1) of the *Copyright Act* 98 of 1978.

¹²² *Copyright, Designs and Patents Act* 1988 (UK).

However, when the AI program itself creates the output without human intervention, or intervention too far removed to be held as significant, these works are called AI-generated creations.¹²³

The discussion on who then could be held to be the author for purposes of copyright, or the inventor for purposes of patents, becomes a quite difficult one.

¹²³ Michiel *AI-Generated Creations: Challenging the traditional Concept of Copyright* 14.

Chapter 3 AI inventions and creations – the output phase

Before the copyright and patent implications of the use of AI in the inventive or creative process are addressed, it is important to achieve a broad overview of the current positions of various jurisdictions on "the AI question" in order to demonstrate the uncertainty and need for clarification. This chapter will briefly explore and compare some of the jurisdictions that have been actively involved in solving, or at least attempting to solve, the present problem of whether the outputs created by AI programs should be protected by intellectual property rights. Following from this understanding, the chapters to follow will examine the question of infringement emanating from the training, or input, phase of inventions and works.

3.1 An examination of DABUS and patents

As briefly referred to in the Introduction, one of the most globally debated of all autonomous AI-inventors is referred to as DABUS (Device for the Autonomous Bootstrapping of Unified Sentience). DABUS is an AI program, developed by Dr Stephen Thaler. DABUS made headlines for being named as the inventor of its inventions in patent applications around the world.¹²⁴ Thaler asserts that he has no expertise in DABUS' inventions and, any input he possibly had, would be too far removed from the eventual outcomes to claim inventorship or even co-inventorship.¹²⁵ The legality of listing a non-human inventor has therefore been scrutinized by offices, courts, and academics since its first filing.¹²⁶ An examination and comparison between the current (and previous) positions of international bodies will be explored.

3.1.1 The South African position

South Africa's patent office, the South African Companies and Intellectual Property Commission (CIPC), became the first jurisdiction in the world to accept an AI as an inventor and subsequently granted patent no. 2021/03242 following this

¹²⁴ O'Brien and Taylor 2021 <https://www.insideteclaw.com/blog/2021/12/the-year-that-was-for-dabus-the-worlds-first-ai-inventor>.

¹²⁵ O'Brien and Taylor 2021 <https://www.insideteclaw.com/blog/2021/12/the-year-that-was-for-dabus-the-worlds-first-ai-inventor>.

¹²⁶ O'Brien and Taylor 2021 <https://www.insideteclaw.com/blog/2021/12/the-year-that-was-for-dabus-the-worlds-first-ai-inventor>.

acceptance.¹²⁷ The publication of the patent in the South African Patent Journal indicates that the "food container and devices and methods for attracting enhanced attention" was invented and "autonomously generated by an artificial intelligence".¹²⁸ Therefore, the inventor is DABUS and the developer of DABUS, Dr Stephen Thaler, is the patentee.¹²⁹ Interestingly, section 27(1) of the *Patents Act* does not define the term "inventor" and merely refers to an inventor as "him" or "person".¹³⁰ The Act never refers to a "human" person, and although one may argue that that was the legislature's intention, it is nevertheless open for interpretation considering the advancements in the technological landscape since 1978. As South Africa's patent office operates on a depository system, as long as the basic formal requirements are met,¹³¹ the patent application will most likely succeed.¹³² The Act states that:

An application for a patent in respect of an invention may be made by the inventor or by any person acquiring from him the right to apply or by both such inventor and such other person¹³³

and

any person other than the inventor who makes or joins in an application for a patent shall in the prescribed manner furnish proof of his title or authority to apply for a patent as may be prescribed.¹³⁴

Regulation 22(1)(d) of the South African Patent Regulations states that "an application for a patent shall be made ... and be accompanied by the following documents":

where the applicant has acquired a right to apply from the inventor, an assignment or other proof, to the satisfaction of the registrar, of the right of the applicant to apply.¹³⁵

¹²⁷ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹²⁸ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹²⁹ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹³⁰ Section 27(1) *Patents Act* 57 of 1978.

¹³¹ These formal requirements are, inter alia that a patent attorney must file the patent application, and the application must contain certain sections, such as the description and the claims.

¹³² Egbunu 2023 <https://benchmarklitigation.com/NewsAndAnalysis/The-latest-news-on-the-DABUS-patent-case/Index/7366>.

¹³³ Section 27(1) *Patents Act* 57 of 1978.

¹³⁴ Section 30(4) *Patents Act* 57 of 1978.

¹³⁵ Regulation 22(1)(d) of the *Patent Regulations of the Patents Act* 57 of 1978.

Regulation 22(1)(c) further requires the applicant to declare how he or she obtained the right to apply for the patent from the inventor.¹³⁶

As an AI is incapable of signing such assignment document, a subjective question remains: what will the registrar hold as satisfactory in future applications. One may seek inspiration from the Roman law concept of "fruit" in which one views the AI program as the "principal" and its invention as "fruit".¹³⁷ The owner or lessee of the principal (or AI program) therefore perhaps need only show ownership or lease of the AI program to demonstrate successful assignment to the registrar's satisfaction.¹³⁸

When one examines the technicalities and the application procedure of the South African patent grant, a Practice Directive in the Patent Journal of April 2009 states that:

Proof of Assignment of an Invention with regard to the PCT Applications entering National Phase will not be required in the following instances:

- (a) where the inventor(s) and the applicant(s) recorded on the PCT Application lodged with CIPRO is/are the same;
- (b) where there is a Declaration of Entitlement in terms of PCT Rule 4.17 on the PCT Pamphlet;¹³⁹

With regard to subsection (a) of the above Directive, although different interpretations exist,¹⁴⁰ it is argued that no assignment is required if the South African and PCT (Patent Co-operation Treaty)¹⁴¹ applicant and inventor details correspond with each other, which in DABUS' case, it did.¹⁴²

Be that as it may, the application was granted and South Africa remains the only jurisdiction to have granted a patent for the DABUS invention, with all other global

¹³⁶ Regulation 22(1)(c) of the *Patent Regulations of the Patents Act 57 of 1978*.

¹³⁷ Van Zantwijk date unknown <https://ideanav.co.za/can-ai-be-an-inventor-dabus-a-south-african-perspective/>.

¹³⁸ Van Zantwijk date unknown <https://ideanav.co.za/can-ai-be-an-inventor-dabus-a-south-african-perspective/>.

¹³⁹ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁴⁰ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/> - the writers argue that this interpretation is incorrect and that paragraph (a) of the Directive merely indicates that in the event of the inventor and applicant being the same person, no assignment will be needed.

¹⁴¹ The PCT application facilitates a manner in which one can seek patent protection in various jurisdictions through the filing of a single application and which incorporates substantive examination.

¹⁴² Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

applications being rejected on the basis, mostly, that there is no natural person listed as the inventor.¹⁴³

3.1.2 *The Australian position*

Before the South African patent was granted, an application was filed in terms of the PCT in September 2020 in Australia. Section 15(1) of the *Australian Patents Act* 83 of 1990 lists four instances in which a person may be granted a patent for his or her invention.¹⁴⁴ According to the Deputy Commissioner of Patents, an AI program cannot be perceived as an inventor in terms of the Act, and as Thaler failed to be listed as a human inventor, the Deputy Commissioner subsequently rejected the DABUS application.¹⁴⁵ Thaler held that the *Australian Patents Act* does not define the term "inventor" and successfully applied for the Deputy Commissioner's refusal to be judicially reviewed.¹⁴⁶ In July 2021, Justice Beach of the Australian Federal Court held that "We are both created and create. Why cannot our own creations also create?".¹⁴⁷ The court broke down its decision into three categories, stating that "an inventor is an agent [and] an agent can be a person or thing that invents"; secondly, it is a reality that various other inventions exist in which one "cannot sensibly be said that a human is the inventor"; and thirdly, that "nothing in the *Australian Patents Act* dictates the contrary conclusion".¹⁴⁸ The court also held that section 15(1)(c) allows the grant of a patent to a person who obtains, from the inventor, title to the invention, and that when following the concept of property law, Thaler becomes the owner of DABUS' invention(s).¹⁴⁹

The court was of the opinion that barring an AI program as being listed as an inventor would be contrary to the *Australian Patents Act's* objective of promoting technological innovation, as the inclusion of AI programs under the gambit of "inventor" is a "recognition of the reality that AI systems are in fact inventing".¹⁵⁰ This gave rise to

¹⁴³ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁴⁴ Section 15(1) of the *Patents Act* 83 of 1990 (Australia).

¹⁴⁵ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁴⁶ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁴⁷ *Thaler v Commissioner of Patents* (2021) FCA 879 (Australia) para 15.

¹⁴⁸ *Thaler v Commissioner of Patents* (2021) FCA 879 (Australia) para 10.

¹⁴⁹ *Thaler v Commissioner of Patents* (2021) FCA 879 (Australia) para 165.

¹⁵⁰ Naidoo and Thaldar 2021 *SAJS*.

the concepts dealing with the differences between inventorship and ownership in which the inventor need not be the owner also.¹⁵¹ In the strictly legal interpretation of the term, persons only are capable of owning the patent, however, the same is not necessarily true for inventorship.¹⁵² This, therefore leads to the logical conclusion that AI programs can be the inventor of a patentable invention, but it cannot be the owner itself.¹⁵³

However, in April 2022, the full Federal Court of Australia stated that only natural persons may be listed as an inventor in terms of the Act.¹⁵⁴ The court interpreted the term "inventor" and reviewed the legislation's history and what Parliament's intention was when drafting such.¹⁵⁵ Thaler filed to appeal the judgment, but was denied it in November 2022 by the High Court which stated:

The court is of the opinion that this not the appropriate vehicle to consider the questions of principle sought to be agitated by the applicant.¹⁵⁶

Therefore, the notion that an inventor may only be a natural or legal person (either a human-being or business) under Australian patent law seems to be set in stone for the foreseeable future.¹⁵⁷ Australia subsequently becomes the first jurisdiction globally to have made a final and non-appealable decision on whether DABUS' inventions can be patented where DABUS is named as the inventor.¹⁵⁸ The ball will now be in the court of Australia's parliament to enact any amendments to Australian patent laws to allow AI programs to be considered as inventors.

3.1.3 The position of the European Patent Office

Thaler filed two European applications with the European Patent Office (EPO) in October and November of 2018 regarding DABUS' inventions.¹⁵⁹ The EPO rejected

¹⁵¹ Naidoo and Thaldar 2021 *SAJS*.

¹⁵² Naidoo and Thaldar 2021 *SAJS*.

¹⁵³ Naidoo and Thaldar 2021 *SAJS*.

¹⁵⁴ *Commissioner of Patents v Thaler* (2022) FCAFC 62 (Australia) para 115.

¹⁵⁵ *Commissioner of Patents v Thaler* (2022) FCAFC 62 (Australia) para 115.

¹⁵⁶ *Thaler v Commissioner of Patents* (2022) HCA Trans 199 (Australia).

¹⁵⁷ Pinsent Masons 2022 <https://www.pinsentmasons.com/out-law/news/australian-high-court-pulls-plug-on-landmark-dabus-ai-patent-application>.

¹⁵⁸ Pinsent Masons 2022 <https://www.pinsentmasons.com/out-law/news/australian-high-court-pulls-plug-on-landmark-dabus-ai-patent-application>.

¹⁵⁹ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

both applications, stating that listing an AI as an inventor contravenes the requirements under Article 81 and Rule 19(1) of the European Patent Convention (EPC), interpreting the EPC's definition of inventor as a natural person.¹⁶⁰ The EPO further held that DABUS, as a machine, has no legal personality and therefore cannot transfer any rights of the invention to Thaler nor be an employee of Thaler.¹⁶¹ Although Thaler appealed the decision of the EPO, the rejection was upheld by the Legal Board of Appeal of the EPO on the basis that no natural person was listed as the inventor.¹⁶² Interestingly, a supplementary request was also denied in which a natural person was indicated to have:

the right to the European Patent by virtue of being the owner and creator of the artificial intelligence system DABUS.¹⁶³

In its grounds for the rejection, the Board held further that it:

is not aware of any case law which would prevent the user or the owner of a device involved in an inventive activity to designate himself as inventor under the European patent law.¹⁶⁴

One may therefore ask why Thaler did not simply designate himself as the inventor, and although the above remains true, it is the fundamental issue with the DABUS applications. Thaler remains steadfast in his approach that DABUS autonomously invented the inventions and that DABUS is not a mere tool used in the process of creating or inventing, but the creator or inventor itself. As stated earlier by the DABUS team "if you can't name the AI as the inventor, and you have to name an inventor, then you don't have a patent".¹⁶⁵

3.1.4 The United Kingdom's position

Thaler filed two patent applications as Convention patent applications in 2018 with the UK Intellectual Property Office (UKIPO).¹⁶⁶ These applications were held as withdrawn

¹⁶⁰ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁶¹ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁶² Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁶³ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁶⁴ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁶⁵ Knowles 2021 <https://www.thetimes.co.uk/article/patently-brilliant-ai-listed-as-inventor-for-first-time-mqj3s38mr>.

¹⁶⁶ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

since section 13(2) of the UK Patents Act of 1977 prescribes that if an applicant does not identify the person or persons who invented the invention within a specific period, nor indicate the derivation of his right to be entitled to the patent if he is not the inventor, the application will lapse.¹⁶⁷ It was therefore held that as DABUS is not a person it cannot be the inventor and secondly, that Thaler had no right to apply for the patents.¹⁶⁸ Thaler was granted permission to appeal to the United Kingdom Court of Appeal which subsequently handed down a split decision.¹⁶⁹ Birss LJ found that Thaler did satisfy the requirements under section 13(2) in that the applicant is obliged to merely "identify" an inventor to his genuine belief.¹⁷⁰ As Thaler believes there was no human inventor and since he indicated that he is the owner of DABUS for purposes of derivation of rights, the appeal should succeed.¹⁷¹ Laing LJ and Arnold LJ, however, differed from Birss in holding that Thaler erred in identifying an inventor by identifying a non-human inventor.¹⁷² The court stated that it has a duty to apply laws as they stand at present and that it should not enter the debate as to what the law could or should be.¹⁷³ Thaler was granted permission for a further appeal, and in December 2023, the UK Supreme Court held that, under current existing patent laws, the inventor must be a natural person.¹⁷⁴ Lord Kitchin LJ, in its judgment, stated that:

Whether or not thinking machines were capable of devising inventions in 1977, it is clear to me that Parliament did not have them in mind when enacting this scheme. If patents are to be granted in respect of inventions made by machines, the 1977 Act will have to be amended.¹⁷⁵

The current position of the United Kingdom is therefore clear: where there is an unidentifiable human inventor regarding an AI-generated invention, the invention will be unprotected intrinsically.¹⁷⁶ To allow such inventions to be protected, Parliament will therefore be obliged to amend current laws. Ryan Abbott, a Professor of Law and

¹⁶⁷ Section 13(2) of *The Patents Act 1977* (UK).

¹⁶⁸ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁶⁹ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁷⁰ Section 13(2) of *The Patents Act 1977* (UK).

¹⁷¹ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁷² Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁷³ Mhangwane and Cochrane 2023 <https://spoor.com/dabus-the-rise-of-the-inventive-machines/>.

¹⁷⁴ *Thaler v Comptroller-General of Patents, Designs and Trade Marks* (2023) UKSC 49 (UK) para 79.

¹⁷⁵ *Thaler v Comptroller-General of Patents, Designs and Trade Marks* (2023) UKSC 49 (UK) para 79.

¹⁷⁶ Abbott 2023 https://www.linkedin.com/posts/profabbott_thaler-appellant-v-comptroller-general-activity-7143259204022181891-R0WD/.

Health Sciences at the University of Surrey, who is also heavily involved in arguing the case for patent protection for the DABUS inventions, states that future legal disputes will become increasingly complex in terms of the level of natural person involvement in AI-generated inventions for such inventions to be patentable "as AI ... becomes increasingly sophisticated".¹⁷⁷

3.1.5 *The United States of America's position*

Similar to the above arguments from Australia, the EPO, and the United Kingdom, the US Patent and Trademark Office (USPTO) ruled that AI programs cannot be named as an inventor in a patent application.¹⁷⁸ Although the DABUS team argued that US Patent law's reference to an "individual" may be interpreted to include an AI program, the USPTO held that "only natural persons may be named as an inventor".¹⁷⁹ It further stated that when one reviews current patent laws, the wording includes "humanlike" terms such as "whoever", "himself", and "herself".¹⁸⁰

3.1.6 *Brazilian Patent Amendment Bill*

On 20 February 2024, a Congressman introduced an amendment bill¹⁸¹ to Brazil's IP Statute¹⁸² intended to regulate artificially generated inventions and their ownership.¹⁸³ The bill suggests adding a paragraph to Article 6 of the IP Statute (the patent ownership regulation of inventions) to the following effect:

¹⁷⁷ Abbott 2023 https://www.linkedin.com/posts/profabbott_thaler-appellant-v-comptroller-general-activity-7143259204022181891-R0WD/.

¹⁷⁸ USPTO Application No. 16/524,350
mhttps://www.uspto.gov/sites/default/files/documents/16524350_22apr2020.pdf?utm_campaign=subscriptioncenter&utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=.

¹⁷⁹ USPTO Application No. 16/524,350
mhttps://www.uspto.gov/sites/default/files/documents/16524350_22apr2020.pdf?utm_campaign=subscriptioncenter&utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=.

¹⁸⁰ USPTO Application No. 16/524,350
mhttps://www.uspto.gov/sites/default/files/documents/16524350_22apr2020.pdf?utm_campaign=subscriptioncenter&utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=.

¹⁸¹ Bill 303/2024 (Brazil).

¹⁸² *IP Statute* (Law 9279/96) (Brazil).

¹⁸³ Pinho *et al* <https://patentblog.kluweriplaw.com/2024/02/26/brazilian-congressman-introduces-bill-to-allow-ai-as-inventor/>.

in the case of inventions autonomously generated by artificial intelligence systems, a patent can be requested in the name of the artificial intelligence system that has created the invention, being the artificial intelligence system considered the inventor and owner of the rights arising from the invention.¹⁸⁴

The Congressman argued in favour of the bill by citing the debate surrounding DABUS and its invention.¹⁸⁵ The Congressman placed a great importance on the increase of technology in all spheres and emphasised the need to provide clear guidance to eliminate uncertainty to increase development in the field of artificial intelligence:

by allowing that these systems be recognized as patent inventors, we are incentivizing innovation and research on this field, at the same time as we guarantee a legal system that is effective in the protection of intellectual property rights.¹⁸⁶

The Brazilian Patent and Trademark Office (BRPTO) currently does not allow the possibility of listing an AI program as an inventor in a patent application.¹⁸⁷ It is interesting to note that the federal attorneys of the BRPTO provided a legal opinion in 2022 about this exact issue and concluded that Article 6 does not in fact, allow non-human inventorship, and that AI programs are challenging this status quo.¹⁸⁸ The federal attorneys further opined that:

specific legislation needs to be enacted regulating inventions developed by artificial intelligence machines, which will probably be preceded by international treaties aimed at harmonizing the principles of protection at the national level.¹⁸⁹

The amendment bill, however welcomed, still leaves a loophole which may evoke some questions.¹⁹⁰ Further amendments of the IP Statute will be needed to answer the question of who is entitled to actually file the patent application on behalf of the AI inventor for its invention.¹⁹¹ Filing the application in the name of the AI program seems

¹⁸⁴ Bill 303/2024 (Brazil).

¹⁸⁵ Pinho *et al* <https://patentblog.kluweriplaw.com/2024/02/26/brazilian-congressman-introduces-bill-to-allow-ai-as-inventor/>.

¹⁸⁶ Pinho *et al* <https://patentblog.kluweriplaw.com/2024/02/26/brazilian-congressman-introduces-bill-to-allow-ai-as-inventor/>.

¹⁸⁷ Pinho *et al* <https://patentblog.kluweriplaw.com/2024/02/26/brazilian-congressman-introduces-bill-to-allow-ai-as-inventor/>.

¹⁸⁸ Pinho *et al* <https://patentblog.kluweriplaw.com/2024/02/26/brazilian-congressman-introduces-bill-to-allow-ai-as-inventor/>.

¹⁸⁹ Pinho *et al* <https://patentblog.kluweriplaw.com/2024/02/26/brazilian-congressman-introduces-bill-to-allow-ai-as-inventor/>.

¹⁹⁰ Pinho *et al* <https://patentblog.kluweriplaw.com/2024/02/26/brazilian-congressman-introduces-bill-to-allow-ai-as-inventor/>.

¹⁹¹ Pinho *et al* <https://patentblog.kluweriplaw.com/2024/02/26/brazilian-congressman-introduces-bill-to-allow-ai-as-inventor/>.

to be in accordance with paragraph 2 of Article 6 which currently states that the patent:

can be filed in the inventor's name, by their heirs or successors, by the assignee, or by the person or entity to whom the law or the employment or service provider contract determines the ownership belongs.¹⁹²

Disagreement, however, may become apparent in instances where the inventor of the AI program itself is different from the entity taking the steps to apply for a patent application for the invention generated by the AI program.¹⁹³

It is still early stages for the bill and it will now be assigned to a committee of the House of Representatives where a House Representative will be assigned the title of rapporteur.¹⁹⁴ After the bill passes further debate and voting by members of the committee supported by arguments from the public and experts in the field, the bill will be presented to the Constitution and Justice Committee in order to determine whether any constitutional provisions will be violated if the bill passes.¹⁹⁵

Professor Abbott, who has been directly involved in the DABUS cases, is of the opinion that much work still needs to be done to perfect the wording of the bill.¹⁹⁶ Abbott, although delighted that the title of inventor might be awarded to the AI, states that the current wording in fact allows the ownership of the patent to be granted to the AI itself and that it should be made clear that the title of owner should be designated to a legal person only, preferably the owner of the AI program.¹⁹⁷

3.1.7 Government-level guidance on AI-assisted inventions

To address the issues and uncertainty still present, the USPTO, on 12 February 2024, released an "inventorship guidance", published in the Federal Register, for AI-assisted

¹⁹² Article 6 para 2 of the *IP Statute* (Law 9279/96) (Brazil).

¹⁹³ Pinho *et al* <https://patentblog.kluweriplaw.com/2024/02/26/brazilian-congressman-introduces-bill-to-allow-ai-as-inventor/>.

¹⁹⁴ Pinho *et al* <https://patentblog.kluweriplaw.com/2024/02/26/brazilian-congressman-introduces-bill-to-allow-ai-as-inventor/>.

¹⁹⁵ Pinho *et al* <https://patentblog.kluweriplaw.com/2024/02/26/brazilian-congressman-introduces-bill-to-allow-ai-as-inventor/>.

¹⁹⁶ Abbott 2024 <https://www.linkedin.com/feed/update/urn:li:activity:7169033990924881920/>.

¹⁹⁷ Abbott 2024 <https://www.linkedin.com/feed/update/urn:li:activity:7169033990924881920/>.

inventions.¹⁹⁸ The USPTO states that the reason for the guidance is "to incentivize, protect, and encourage investment in innovations" where artificial intelligence played a role.¹⁹⁹ The aim for the guidance is to provide the sensitive balance between "human ingenuity" and investment in the AI landscape.²⁰⁰ This balance is struck by acknowledging the capabilities of artificial intelligence, but placing the attention on the contribution made by the human involved.²⁰¹ The guideline states that although AI-assisted inventions are not prima facie unpatentable, there has to be a "significant" contribution by the human in order for the invention to qualify for patent protection.²⁰² The significant contribution test was built on the same test applied in *Pannu v. Iolab Corporation*.²⁰³ The guidelines stress that there has to be a "at least one named human inventor" in the patent application who meets the requirement of contribution.²⁰⁴ Examples were also provided by the USPTO, one of which states that the construction of a prompt to an AI program to invent might be held as sufficient for patentability if the prompt was constructed in a significant manner.²⁰⁵ If, however, the AI invented the invention and the human involved merely claims "intellectual domination" over the AI program, such human will not be held to be an inventor and consequently no patent will be granted over the invention:

it will not matter if AI, or other advanced computer system, performed actions that would rise to the level of inventorship. What matters, under the guidance, is whether

¹⁹⁸ USPTO 2024 <https://www.uspto.gov/subscription-center/2024/uspto-issues-inventorship-guidance-and-examples-ai-assisted-inventions>.

¹⁹⁹ USPTO 2024 <https://www.uspto.gov/subscription-center/2024/uspto-issues-inventorship-guidance-and-examples-ai-assisted-inventions>.

²⁰⁰ USPTO 2024 <https://www.uspto.gov/subscription-center/2024/uspto-issues-inventorship-guidance-and-examples-ai-assisted-inventions>.

²⁰¹ USPTO 2024 <https://www.uspto.gov/subscription-center/2024/uspto-issues-inventorship-guidance-and-examples-ai-assisted-inventions>.

²⁰² USPTO 2024 <https://www.uspto.gov/subscription-center/2024/uspto-issues-inventorship-guidance-and-examples-ai-assisted-inventions>.

²⁰³ *Pannu v. Iolab Corporation* 155 F.3d 1344 (1998) (US).

²⁰⁴ Vidal 2024 https://www.uspto.gov/blog/director/entry/ai-and-inventorship-guidance-incentivizing?utm_campaign=subscriptioncenter&utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=.

²⁰⁵ Vidal 2024 https://www.uspto.gov/blog/director/entry/ai-and-inventorship-guidance-incentivizing?utm_campaign=subscriptioncenter&utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=.

at least one human's actions can be shown to rise to the level of inventorship and is listed as an inventor on the application.²⁰⁶

Dr Manuel Pescher is of the opinion that the "intellectual domination" rejection might be a problem in instances where accidental discovery takes place during invention, as these inventions might therefore fall short of the significant contribution requirement.²⁰⁷ Dr Pescher states that there is still a large portion of IP law that needs to be covered after the guidelines have been published, as the question still remains why certain AI-invented inventions are not patentable.²⁰⁸

Dr Malte Köllner disagrees with the way in which the USPTO approached the issue of AI inventorship with regard to its opinion that patent law is the protection of products emanating from "human ingenuity".²⁰⁹ Dr Köllner states that the objective of patent law is different and should be about the technology and not about the human creation, quoting Article 7 of TRIPS:

The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.²¹⁰

Be that as it may, the USPTO accepted comments from the public on the guidelines provided until 13 May 2024.²¹¹

3.1.8 The PHOSITA standard and prior art

On 30 April 2024, the USPTO embarked on a process of seeking comments and insight from the public regarding whether AI is able to author prior art and whether

²⁰⁶ Vidal 2024 [https://www.uspto.gov/blog/director/entry/ai-and-inventorship-guidance-incentivizing?utm_campaign=subscriptioncenter&utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=.](https://www.uspto.gov/blog/director/entry/ai-and-inventorship-guidance-incentivizing?utm_campaign=subscriptioncenter&utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=)

²⁰⁷ Pescher 2024 [https://www.linkedin.com/posts/manuelpescher_ipcurious-ipnews-iplaw-activity-7163077793730215936-p-rf/.](https://www.linkedin.com/posts/manuelpescher_ipcurious-ipnews-iplaw-activity-7163077793730215936-p-rf/)

²⁰⁸ Pescher 2024 [https://www.linkedin.com/posts/manuelpescher_ipcurious-ipnews-iplaw-activity-7163077793730215936-p-rf/.](https://www.linkedin.com/posts/manuelpescher_ipcurious-ipnews-iplaw-activity-7163077793730215936-p-rf/)

²⁰⁹ Köllner 2024 [https://www.linkedin.com/posts/manuelpescher_ipcurious-ipnews-iplaw-activity-7163077793730215936-p-rf/.](https://www.linkedin.com/posts/manuelpescher_ipcurious-ipnews-iplaw-activity-7163077793730215936-p-rf/)

²¹⁰ Article 7 of the *Agreement on Trade-Related Aspects of Intellectual Property Rights* (TRIPS) (1995).

²¹¹ USPTO 2024 [https://www.uspto.gov/subscription-center/2024/uspto-issues-inventorship-guidance-and-examples-ai-assisted-inventions.](https://www.uspto.gov/subscription-center/2024/uspto-issues-inventorship-guidance-and-examples-ai-assisted-inventions)

disclosures by AI should be dealt with in a different manner than those disclosures made by humans.²¹²

The USPTO's request for comments involves, *inter alia*, exploring the legal benchmark imposed on a person's "ordinary skill in the art" or the so-called PHOSITA standard.²¹³ The PHOSITA standard (an acronym for "person having ordinary skill in the art"²¹⁴) is core to the initial patentability of an invention, as well as throughout the invention's lifetime for purposes of infringement claims.²¹⁵ Darrow states that, originally, the PHOSITA is "presumed to be skilled, within a given field, at repetitive processes that produce expected results".²¹⁶ Darrow, however, is of the opinion that case law has since moved the line of the PHOSITA benchmark to that which closely resembles an "ordinary" inventor, at any rate for U.S. law.²¹⁷

In an article entitled "Artificially obvious but genuinely new: how artificial intelligence alters the patent obviousness analysis", the author asks the question what the effect will be when an inventor's patent application is denied as a result of an AI program somewhere in the world being capable of, in fact, inventing the same invention.²¹⁸ In 1950, Alan Turing invented the so-called "Turing Test" which involved computers solving certain puzzles akin to a human to obtain the title of having "autonomous thinking".²¹⁹ Therefore, if these AI programs are capable of autonomous thinking, the question should be asked what the effect on the non-obviousness criteria and

²¹² Chheda et al 2024 [https://www.jdsupra.com/legalnews/uspto-announces-request-for-comments-ai-9795294/#:~:text=On%20April%2030%2C%202024%2C%20the,\(%22PHOSITA%22\)%2C%20which.](https://www.jdsupra.com/legalnews/uspto-announces-request-for-comments-ai-9795294/#:~:text=On%20April%2030%2C%202024%2C%20the,(%22PHOSITA%22)%2C%20which.)

²¹³ Chheda et al 2024 [https://www.jdsupra.com/legalnews/uspto-announces-request-for-comments-ai-9795294/#:~:text=On%20April%2030%2C%202024%2C%20the,\(%22PHOSITA%22\)%2C%20which.](https://www.jdsupra.com/legalnews/uspto-announces-request-for-comments-ai-9795294/#:~:text=On%20April%2030%2C%202024%2C%20the,(%22PHOSITA%22)%2C%20which.)

²¹⁴ Anonymous 2023
<https://www.upcounsel.com/phosita#:~:text=PHOSITA%20stands%20for%20%22%20%22%20person%20having%20ordinary%20skill%20in%20the%20art.%E2%80%9D.>

²¹⁵ Darrow 2009 *HJLT*.

²¹⁶ Darrow 2009 *HJLT*.

²¹⁷ Darrow 2009 *HJLT*.

²¹⁸ Heon 2023 *SHLR*.

²¹⁹ Heon 2023 *SHLR* 360.

therefore also the PHOSITA benchmark is. As Judge Learned Hand from the United States puts it:

As the law stands, the inventor must accept the position of a mythically omniscient worker in his chosen field. As the arts proliferate with prodigious fecundity, his lot is an increasingly hard one.²²⁰

Professor Abbott notes that:

at some point in the near future, when AI transitions from automating human researchers to automating inventive activity on a broad scale, inventive AI might even represent the skilled person.²²¹

The difficulty that arises when referring to the link between the PHOSITA and the AI program is that although humans are incapable of knowing of and remembering all prior art, the AI program is, in fact, capable of storing all prior art in its memory.²²² In principle, the AI program then substantially raises the bar of non-obviousness to that which would be detrimental to human inventors.²²³ Furthermore, as the AI program is capable of having knowledge of prior art in all fields, this further lifts the non-obviousness criteria.²²⁴ Professor Abbott states that including an AI program in the analysis of an invention being non-obvious, or substituting the PHOSITA with an AI program, would result in nothing being non-obvious.²²⁵ Currently, websites such as "allpriorart.com" exist for the sole purpose to:

algorithmically create and publish all possible new prior art, thereby making the published concepts not patentable.²²⁶

The website states that the whole US database, comprising both issued and unapproved patent filings, is scraped in order for the AI to create prior art using existing patent jargon.²²⁷ The website states that although most of the AI-generated

²²⁰ *Merit Mfg. Co. v. Hero Mfg. Co.* 185 F.2d 350, 352 (2d Cir. 1950) (US).

²²¹ Abbott 2019 https://www.wipo.int/wipo_magazine/en/2019/06/article_0002.html#:~:text=At%20some%20point%20in%20the,obvious%20than%20today's%20skilled%20person.

²²² Heon 2023 *SHLR* 377.

²²³ Heon 2023 *SHLR* 378.

²²⁴ Heon 2023 *SHLR* 378.

²²⁵ Abbott 2016 *BCLR* 1124.

²²⁶ All Prior Art date unknown <https://allpriorart.com/about/>.

²²⁷ All Prior Art date unknown <https://allpriorart.com/about/>.

prior art will be meaningless, the AI is capable of producing "millions of ideas...which allows for a higher probability of possible valid prior art".²²⁸

In countries where patent applications are indeed examined, unlike in South Africa, it might be a feasible solution to require a disclosure in cases where AI was used in the invention when considering obviousness.²²⁹ As most jurisdictions are refusing patents based on an AI being named as the inventor, as seen earlier in this research, a disclosure requirement of this sort might be the solution to the non-patentability of these inventions.²³⁰ By requiring this disclosure, it would allow the patent application to progress and two options will arise.²³¹ Firstly, the AI can be disclosed as being used as a tool for functions that a human will also be able to conduct.²³² In these instances it would be appropriate for courts to determine the obviousness of the invention by applying the current standard of PHOSITA.²³³ The second option is to file the application naming the AI as an inventor, either solely or as a co-inventor.²³⁴ Following such, either the application will be denied based on the lack of a human inventor, or if accepted that an AI can be named as an inventor, the courts will have to apply a higher obviousness standard in order to make up for the AI program's higher capabilities.²³⁵ Allowing this approach will bring into existence two standards for determining obviousness – one for the human inventor(s) and a separate, more stringent standard, for the AI inventor(s).²³⁶

3.1.9 Purposive interpretation

The Patents Act of South Africa and its regulations include similar complications as those commented on by the USPTO, UKIPO, EPO, and the Australian Deputy Commissioner as it relates to the inventorship capabilities of DABUS, such as the South African Patents Act referring to an inventor as "him" or "person".²³⁷ However, where

²²⁸ All Prior Art date unknown <https://allpriorart.com/about/>.

²²⁹ Heon 2023 *SHLR* 380.

²³⁰ Heon 2023 *SHLR* 380.

²³¹ Heon 2023 *SHLR* 381.

²³² Heon 2023 *SHLR* 381.

²³³ Heon 2023 *SHLR* 381.

²³⁴ Heon 2023 *SHLR* 381.

²³⁵ Heon 2023 *SHLR* 381.

²³⁶ Heon 2023 *SHLR* 383.

²³⁷ Section 27(1) *Patents Act* 57 of 1978.

the South African position pivots from the jurisdictions concerned, is the interpretation of its *Patents Act*.²³⁸ South Africa follows a purposive approach in interpreting legislation which provides for numerous rationales and theories.²³⁹ These purposes are outlined in the *Intellectual Property Policy of the Republic of South Africa Phase 1* (the Policy) stating:

Intellectual Property (IP) is an important policy instrument in promoting innovation, technology transfer, research and development (R&D), creative expression, consumer protection, industrial development and more broadly, economic growth.²⁴⁰

Naidoo and Thaler suggests that this Policy serves as a convenient expression of what the purposes of awarding a patent should be.²⁴¹ When one then investigates the DABUS scenario, in which it is claimed that DABUS invented its invention(s) autonomously, the purposes outlined by the Policy supports the awarding of patents in autonomously AI invented inventions and should therefore qualify the term "inventor" as including an AI program.²⁴² Ultimately, under South African law, the decision to allow AI inventorship is therefore justified.²⁴³

This, however, may give rise to the question whether allowing AI inventorship equates to that of attaching personhood (or legal subjectivity) to that of an AI program.²⁴⁴ Naidoo and Thaler hold the view that the question can be divided into two perspective, namely a moral perspective and an economic perspective.²⁴⁵ From a moral point of view, attaching personhood to an AI program would require the AI to reach a level of self-consciousness and experience emotions on par with what humans are confronted with.²⁴⁶ From a purely economic view point, it may be useful to attach rights or duties to an AI program, akin to that of a company in which directors are able to control the affairs of the AI program.²⁴⁷ Inventiveness, however, cannot be seen as an exclusive characteristic of humans only, as AI is certainly capable of

²³⁸ Naidoo and Thaldar 2021 *SAJS*.

²³⁹ Naidoo and Thaldar 2021 *SAJS*.

²⁴⁰ *Intellectual Property Policy of The Republic of South Africa Phase 1* of 2018.

²⁴¹ Naidoo and Thaldar 2021 *SAJS*.

²⁴² Naidoo and Thaldar 2021 *SAJS*.

²⁴³ Naidoo and Thaldar 2021 *SAJS*.

²⁴⁴ Naidoo and Thaldar 2021 *SAJS*.

²⁴⁵ Naidoo and Thaldar 2021 *SAJS*.

²⁴⁶ Naidoo and Thaldar 2021 *SAJS*.

²⁴⁷ Naidoo and Thaldar 2021 *SAJS*.

inventing under their eyes of CIPC.²⁴⁸ This does not automatically bestow personhood on an AI program, but that, in Naidoo and Thaldar's opinion, the AI can be classified as "a special species of legal object that has the ability to invent".²⁴⁹

3.2 Generative AI and copyright

Generative AI refers to a program capable of creating content in the form of text, images, videos, music, art, and more, based on a dataset which it is taught from.²⁵⁰ In simple terms, the training process, referred to as "machine learning", is the procedure in which the AI program processes an enormous amount of data in order to accurately identify similarities or patterns, and subsequently creates its own content.²⁵¹ The dilemma, however, lies in issues regarding the possibility of copyright infringement, who the owner of the AI-generated works are, and the use of copyrighted content in datasets to train these generative programs.²⁵² In 2016, a portrait entitled, "The Next Rembrandt" was introduced in museums in the Netherlands.²⁵³ The Next Rembrandt is an AI-generated portrait created through extensive training from training data of thousands of artworks painted by the famous 1600s artist, Rembrandt van Rijn.²⁵⁴ Ron Augustus, a director at Microsoft Netherlands, stated that the creation is:

not a copy of Rembrandt's work and it is not what he necessarily would have painted had he lived longer than he had, it is a visualization of data in a beautifully creative form. It is a powerful demonstration how data can be used to make life itself more beautiful.²⁵⁵

Guadamuz states that previously, computers and software were merely used as a tool in the creative process, but now "autonomous systems are capable of learning without being specifically programmed by a human".²⁵⁶

²⁴⁸ Naidoo and Thaldar 2021 *SAJS*.

²⁴⁹ Naidoo and Thaldar 2021 *SAJS*.

²⁵⁰ Martineau 2023 <https://research.ibm.com/blog/what-is-generative-AI>.

²⁵¹ Bikbaeva 2023 <https://www.thefashionlaw.com/ai-trained-on-copyrighted-works-when-is-it-fair-use/>.

²⁵² Appel, Neelbauer and Schweidel 2023 <https://hbr.org/2023/04/generative-ai-has-an-intellectual-property-problem>.

²⁵³ Guadamuz 2017 https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html.

²⁵⁴ Guadamuz 2017 https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html.

²⁵⁵ Anon 2016 <https://news.microsoft.com/europe/features/next-rembrandt/>.

²⁵⁶ Guadamuz 2017 https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html.

Fast forward a few years, and generative AI has become a more accessible and everyday occurrence. Some of the most popular and powerful generative AI programs available online are the following: Stable Diffusion, Midjourney, and DALL-E.²⁵⁷ These programs have the capability, with advanced speed and high quality, to generate artwork from any prompt and in any style.²⁵⁸ Guadamuz states that:

while programmers can set parameters, the work is actually generated by the computer program itself ... in a process akin to the thought processes of humans.²⁵⁹

With traditional "computer-generated" creations or AI-aided creations referred to earlier (in the UK and South Africa at least), there are clear guidelines in terms of ownership and infringement regarding copyright law as these computers are used as a mere tool, similar to a pen or a brush.²⁶⁰ When the program itself is able to learn and generate its own work, without the input from the user or programmer, copyright law globally can quickly raise some concerns. Guadamuz is of the opinion that there are practicably two options when one considers this issue: copyright can either be denied for works created by an AI or authorship could be attributed to the program's creator.²⁶¹ The writer believes that after the article was written by Guadamuz in 2017, the AI landscape advanced rapidly. Therefore, limiting the copyright implications to these two options only, leaves the door open for even more debate such as right-of-use issues, infringement, ownership of such work, and the use of unlicensed training data.²⁶²

Large language models (LLM's) such as ChatGPT and Bard, even have the ability to write full essays, poems, and stories while mimicking the writing style of popular

²⁵⁷ Appel, Neelbauer and Schweidel 2023 <https://hbr.org/2023/04/generative-ai-has-an-intellectual-property-problem>.

²⁵⁸ Appel, Neelbauer and Schweidel 2023 <https://hbr.org/2023/04/generative-ai-has-an-intellectual-property-problem>.

²⁵⁹ Guadamuz 2017 https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html.

²⁶⁰ Guadamuz 2017 https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html - it should, however, be noted that the position of using AI as a tool is different in jurisdictions such as the UK versus the US (whose position is explained later in this Chapter).

²⁶¹ Guadamuz 2017 https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html.

²⁶² Appel, Neelbauer and Schweidel 2023 <https://hbr.org/2023/04/generative-ai-has-an-intellectual-property-problem>.

authors or poets.²⁶³ When ChatGPT was asked to "please write a paragraph on your capabilities to imitate human text in essays", the following paragraph was generated:

I possess the ability to imitate human text in essays with a remarkable degree of fluency and coherence. Leveraging the extensive training data I've been exposed to, I can emulate various writing styles, tones, and structures commonly found in human-generated essays. My capabilities extend to synthesizing information, constructing logical arguments, and articulating ideas in a manner that closely resembles human expression. Whether it's adopting a formal academic tone, a persuasive style, or an informative approach, I strive to generate text that mirrors the nuanced characteristics of human writing. However, it's important to note that while I excel at mimicking the surface features of human text, I lack personal experiences, opinions, or consciousness, and my responses are generated based on patterns learned from data.²⁶⁴

Although some have seen the increase of AI-generated creations as a legal threat (discussed later in this research²⁶⁵), some have embraced the changing legal landscape and are using it to their advantage.²⁶⁶ The household tomato sauce brand, Heinz, has recently used the popular text-to-image program DALL-E to find out what AI devises when being prompted to generate a bottle of tomato sauce.²⁶⁷ Much to the surprise of the Heinz marketing team, DALL-E's outputs very much resembled the design, copyright, and trade-marks associated with the Heinz brand.²⁶⁸ Instead of instituting legal action against OpenAI (the developers of DALL-E), Heinz turned the legal complexities into a marketing campaign, asking the public to come up with various tomato sauce prompts of which the best ones were turned into full-blown social media posts or printed advertisements with the catch phrase "Just like humans, AI prefers Heinz".²⁶⁹ The ad-campaign was a first for Heinz generated entirely by an AI program.²⁷⁰

²⁶³ Appel, Neelbauer and Schweidel 2023 <https://hbr.org/2023/04/generative-ai-has-an-intellectual-property-problem>.

²⁶⁴ ChatGPT output 16:47 on 23 December 2023 – prompter Kyle Snyman

²⁶⁵ See the ethical considerations in Chapter 6.

²⁶⁶ Wurzer 2024 https://www.linkedin.com/posts/profalexanderwurzer_how-do-you-turn-%3F%3F%3F%3F-%3F%3F%3F%3F%3F%3F%3F%3F%3F%3F-activity-7162714339378937856-NtFw/.

²⁶⁷ Campaigns of the World 2022 <https://campaignsoftheworld.com/digital/heinz-a-i-ketchup/>.

²⁶⁸ Campaigns of the World 2022 <https://campaignsoftheworld.com/digital/heinz-a-i-ketchup/>.

²⁶⁹ Campaigns of the World 2022 <https://campaignsoftheworld.com/digital/heinz-a-i-ketchup/>.

²⁷⁰ Campaigns of the World 2022 <https://campaignsoftheworld.com/digital/heinz-a-i-ketchup/>.



3.2.1 The AI's output as creative works

Although one cannot technically separate the copyright implications of the AI-generated output with the input data it learns from (as the two are not mutually exclusive), for purposes of clarity and completeness, the writer will refer to it as two issues. That is the issue of copyright protection and enforcement (the "output" created by the AI) and the issue of infringement (the "input" used as training the AI) dealt with hereafter.

Before the current stance of jurisdictions are discussed, the terms of use for OpenAI (the AI conglomerate through which one can access generative AI programs such as ChatGPT and Dall-E) take an interesting and explicit position on the use of their services. Under the "Ownership of Content" heading on the website, OpenAI states:

As between you and OpenAI, and to the extent permitted by applicable law, you (a) retain your ownership rights in Input and (b) own the Output. We hereby assign to you all our right, title, and interest, if any, in and to Output.²⁷¹

As arguably the biggest and most well-known generative AI service provider in the world, it is an interesting clause to keep in mind while exploring this research.

²⁷¹ OpenAI 2023 <https://openai.com/policies/terms-of-use>.

3.2.2 The United States of America's position

In the US, currently, there seems to be a consensus that if the AI-generated work is created solely by an AI program, no copyright will be awarded for the output.²⁷² Even where there is a collaboration between a human and program, and one is able to separate the human parts from the AI parts, any possible copyright will focus on the human part only.²⁷³ However, if "substantial human input" can be proved, the chances for copyright protection improve.²⁷⁴ A comic book created with the help of Midjourney entitled, *Zarya of the Dawn*, was successfully, although partially, registered with the US Copyright Office (USCO) in 2022.²⁷⁵ USCO had, however, asked the creator of the comic book to provide proof of "substantial human involvement" in the creation of the comic.²⁷⁶ Subsequently, USCO partially cancelled the registration of copyright stating that there was "non-human authorship" which was not considered at first glance.²⁷⁷ Thereupon, only the comic's text and the "selection, coordination, and arrangement" of the book's "written and visual elements" received copyright protection, whereas the images did not.²⁷⁸ USCO held that because the images for the comic generated by Midjourney were mere text prompts, the creator's input was "too minor and imperceptible to supply the necessary creativity for copyright protection".²⁷⁹ USCO has since released a policy in its *Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence*,²⁸⁰ stating that the term "author" does not include non-humans and that when a human in fact uses a prompt to create an AI-

²⁷² Vincent 2022 <https://www.theverge.com/23444685/generative-ai-copyright-infringement-legal-fair-use-training-data>.

²⁷³ Glover 2024 <https://builtin.com/artificial-intelligence/ai-copyright>.

²⁷⁴ Vincent 2022 <https://www.theverge.com/23444685/generative-ai-copyright-infringement-legal-fair-use-training-data>.

²⁷⁵ Edwards 2022 <https://arstechnica.com/information-technology/2022/09/artist-receives-first-known-us-copyright-registration-for-generative-ai-art/>.

²⁷⁶ Vincent 2022 <https://www.theverge.com/23444685/generative-ai-copyright-infringement-legal-fair-use-training-data>.

²⁷⁷ Glover 2024 <https://builtin.com/artificial-intelligence/ai-copyright>.

²⁷⁸ Glover 2024 <https://builtin.com/artificial-intelligence/ai-copyright>.

²⁷⁹ Glover 2024 <https://builtin.com/artificial-intelligence/ai-copyright>.

²⁸⁰ United States Copyright Office on *Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence*.

generated work, the "traditional elements of authorship" were carried out by the software program and therefore not protected.²⁸¹

In *Thaler v Perlmutter*²⁸², the judge denied copyright protection for artwork created by another AI program invented by Stephen Thaler, Creativity Machine, stating that since the artwork, named "A Recent Entrance to Paradise", was autonomously created by the AI, there was no human involvement and therefore no author of the work.²⁸³ Interestingly, in response to this, Thaler entered a different position, stating that he is the actual owner of "A Recent Entrance to Paradise", and Creativity Machine was hired to create the artwork.²⁸⁴ Thaler argued that, being the creator of the Creativity Machine affords him numerous bases to in fact be the holder of rights over works produced by the AI.²⁸⁵ These bases include being the owner of the copyright as he is the actual owner, the work being a so-called "work for hire" produced by his creation, and the right of first possession.²⁸⁶ After USCO's release of its copyright guidelines referred to earlier, the answer to whether an AI program can be an author for copyright purposes and the answer to whether AI-generated works can be classified as work made for hire in the US, is an incontrovertible "no".²⁸⁷ USCO held that:

it is well-established that copyright can protect only material that is the product of human creativity.²⁸⁸

Guadamuz states that this will be a recurring theme when decisions are made to grant copyright for AI-generated creations and that most of the AI-generated creations

²⁸¹ United States Copyright Office on *Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence*.

²⁸² *Thaler v. Perlmutter* No. 1:22-cv-01564 D.D.C. (US).

²⁸³ Jahner 2024 <https://news.bloomberglaw.com/ip-law/ai-generated-work-deserves-copyright-creator-tells-dc-circuit>.

²⁸⁴ Jahner 2024 <https://news.bloomberglaw.com/ip-law/ai-generated-work-deserves-copyright-creator-tells-dc-circuit>.

²⁸⁵ Jahner 2024 <https://news.bloomberglaw.com/ip-law/ai-generated-work-deserves-copyright-creator-tells-dc-circuit>.

²⁸⁶ Jahner 2024 <https://news.bloomberglaw.com/ip-law/ai-generated-work-deserves-copyright-creator-tells-dc-circuit>.

²⁸⁷ Savare, Sterba and Cassidy 2023 <https://www.reuters.com/legal/legalindustry/copyright-conundrum-protection-ai-works-2023-11-28/#:~:text=It%20states%20that%20in%20cases,the%20manipulated%20work%20can%20be>

²⁸⁸ Savare, Sterba and Cassidy 2023 <https://www.reuters.com/legal/legalindustry/copyright-conundrum-protection-ai-works-2023-11-28/#:~:text=It%20states%20that%20in%20cases,the%20manipulated%20work%20can%20be>

today will never be protected.²⁸⁹ It would seem that even when offices and courts view an AI-program as a tool to create, the popularity and ease with which one is able to create artwork through online AI-programs has in itself created additional requirements in order for the prerequisites of copyright to be complied with, at least in the US.²⁹⁰ The stance of the US Copyright Office denying copyright protection as a result of its interpretation that an AI program is not human and therefore not an author, may actually hurt traditional artists more.²⁹¹ Heverly states that:

In order for there to be infringement, there has to be an author. So, if there is not an author, I do not know that there can be infringement.²⁹²

An AI program named RAGHAV (Robust Artificially Intelligent Graphics and Art Visualizer) created a work entitled "Suryast".²⁹³ Ankit Sahni, an attorney and artist, filed an application to register such work by listing himself and RAGHAV as co-authors, as RAGHAV's contribution to the work was independent from his.²⁹⁴ Sahni used a photograph he took himself as the "base image" and the famous painting "The Starry Night" as the "style image".²⁹⁵ The AI-generated work was therefore an adaptation of the photo by Sahni in the style of the Van Gogh painting.²⁹⁶ USCO declined registration as there was no human author of the output; the part that could be attributed to the human is indistinguishable from the AI's final output and it was, in any case, a derivative of the original.²⁹⁷ USCO attributed the creative additions to the work as

²⁸⁹ Vincent 2022 <https://www.theverge.com/23444685/generative-ai-copyright-infringement-legal-fair-use-training-data>.

²⁹⁰ Vincent 2022 <https://www.theverge.com/23444685/generative-ai-copyright-infringement-legal-fair-use-training-data>.

²⁹¹ Glover 2024 <https://builtin.com/artificial-intelligence/ai-copyright>.

²⁹² Glover 2024 <https://builtin.com/artificial-intelligence/ai-copyright>.

²⁹³ Chawla 2023 <https://spicyip.com/2023/12/ankit-sahnis-ai-co-authored-artwork-denied-registration-by-us-continues-to-be-registered-in-india.html>.

²⁹⁴ Chawla 2023 <https://spicyip.com/2023/12/ankit-sahnis-ai-co-authored-artwork-denied-registration-by-us-continues-to-be-registered-in-india.html>.

²⁹⁵ Chawla 2023 <https://spicyip.com/2023/12/ankit-sahnis-ai-co-authored-artwork-denied-registration-by-us-continues-to-be-registered-in-india.html>.

²⁹⁶ Chawla 2023 <https://spicyip.com/2023/12/ankit-sahnis-ai-co-authored-artwork-denied-registration-by-us-continues-to-be-registered-in-india.html>.

²⁹⁷ Chawla 2023 <https://spicyip.com/2023/12/ankit-sahnis-ai-co-authored-artwork-denied-registration-by-us-continues-to-be-registered-in-india.html>.

those made by RAGHAV and not Sahni and therefore no copyright protection can be granted.²⁹⁸ USCO held that:

RAGHAV's interpretation of Mr. Sahni's photograph in the style of another painting is a function of how the model works and the images on which it was trained on - not specific contributions or instructions received from Mr. Sahni.²⁹⁹

Interestingly, the same artwork had been successfully registered for copyright in India.³⁰⁰ The Indian Copyright Office, however, issued a withdrawal notice to Sahni, requesting him to issue them with the legal status of RAGHAV.³⁰¹ After Sahni argued that the Copyright Office is not entitled to review a decision that it made itself, no further action was taken and Suryast is still registered on the copyright registry.³⁰²

Suryast had also been successfully registered in Canada, with Sahni and RAGHAV listed as co-authors for the work.³⁰³ This makes Suryast the first copyright-protected work with an AI-author (albeit co-authored with a human) in Canada.³⁰⁴ The Canadian government is also in the process of developing laws for the copyright challenges arising from AI, which include both the possibility of protection of AI-generated creations and the possibility of infringement.³⁰⁵

The same rings true for when the AI-generated work is music.³⁰⁶ Where the music is created solely by an AI program, it will not have copyright protection because of the

²⁹⁸ Chawla 2023 <https://spicyip.com/2023/12/ankit-sahnis-ai-co-authored-artwork-denied-registration-by-us-continues-to-be-registered-in-india.html>.

²⁹⁹ Chawla 2023 <https://spicyip.com/2023/12/ankit-sahnis-ai-co-authored-artwork-denied-registration-by-us-continues-to-be-registered-in-india.html>.

³⁰⁰ Chawla 2023 <https://spicyip.com/2023/12/ankit-sahnis-ai-co-authored-artwork-denied-registration-by-us-continues-to-be-registered-in-india.html>.

³⁰¹ Chawla 2023 <https://spicyip.com/2023/12/ankit-sahnis-ai-co-authored-artwork-denied-registration-by-us-continues-to-be-registered-in-india.html>.

³⁰² Chawla 2023 <https://spicyip.com/2023/12/ankit-sahnis-ai-co-authored-artwork-denied-registration-by-us-continues-to-be-registered-in-india.html>.

³⁰³ Chaturvedi 2023 <https://www.iposgoode.ca/2023/03/a-i-paintings-registrable-copyright-lessons-from-ankit-sahni/>.

³⁰⁴ Chalmers, Medeiros and Yi 2022 <https://www.nortonrosefulbright.com/fr-ca/centre-du-savoir/publications/68947aaf/copyright-protection-for-ai-created-work>.

³⁰⁵ Medeiros and Yi 2021 <https://www.nortonrosefulbright.com/fr-ca/centre-du-savoir/publications/5d9eb6ca/le-gouvernement-du-canada-lance-une-consultation-sur-un-cadre-moderne-du-droit-dauteur-pour-lintelligence-artificielle-et-linternet-des-objets>.

³⁰⁶ Savare, Sterba and Cassidy 2023 <https://www.reuters.com/legal/legalindustry/copyright-conundrum-protection-ai-works-2023-11-28/#:~:text=It%20states%20that%20in%20cases,the%20manipulated%20work%20can%20be>

lack of human authorship.³⁰⁷ However, similar to a piece of artwork, if the prompter arranges the music in a "sufficiently creative way", the human authorship element might be satisfied.³⁰⁸

For purposes of dealing with non-human authors, perhaps it is also necessary to look at the judgment in the famous (or rather infamous) case of *Naruto v Slater*³⁰⁹. In short, Naruto (a macaque in the Indonesian wild) found a camera belonging to Slater and took various photos of himself.³¹⁰ When Slater later retrieved his camera, he was intrigued by the photos taken and decided to publish them in a book which he sold for a commercial purpose.³¹¹ As such, the People for the Ethical Treatment of Animals (PETA) filed a lawsuit against Slater on behalf of Naruto (as next-friend status) alleging that Slater had infringed the copyright emanating from the so-called selfies.³¹² During the District Court proceedings, PETA argued that Naruto is, in fact, the author of the selfies stating that the United States Copyright Act defines "authorship":

sufficiently broad so as to permit the protections of the law to extend to any original work, including those created by Naruto.³¹³

Interestingly, PETA requested an order to allow it "to administer and protect Naruto's authorship of and copyright in the Monkey Selfies" and effectively to award to them the proceeds emanating from the commercial use of the selfies.³¹⁴ Slater responded in stating that PETA (in its capacity as next-friend status) has no legal standing in the matter as the *Copyright Act* does not explicitly provide non-humans with *locus standi*

³⁰⁷ Savare, Sterba and Cassidy 2023 <https://www.reuters.com/legal/legalindustry/copyright-conundrum-protection-ai-works-2023-11-28/#:~:text=It%20states%20that%20in%20cases,the%20manipulated%20work%20can%20be>

³⁰⁸ Savare, Sterba and Cassidy 2023 <https://www.reuters.com/legal/legalindustry/copyright-conundrum-protection-ai-works-2023-11-28/#:~:text=It%20states%20that%20in%20cases,the%20manipulated%20work%20can%20be>

³⁰⁹ *Naruto v Slater* 888 F.3d 418 (9th Cir. 2018) (US).

³¹⁰ Hooker 2020 <https://www.wakeforestlawreview.com/2020/02/naruto-v-slater-one-small-step-for-a-monkey-one-giant-lawsuit-for-animal-kind/>.

³¹¹ Hooker 2020 <https://www.wakeforestlawreview.com/2020/02/naruto-v-slater-one-small-step-for-a-monkey-one-giant-lawsuit-for-animal-kind/>.

³¹² Hooker 2020 <https://www.wakeforestlawreview.com/2020/02/naruto-v-slater-one-small-step-for-a-monkey-one-giant-lawsuit-for-animal-kind/>.

³¹³ Hooker 2020 <https://www.wakeforestlawreview.com/2020/02/naruto-v-slater-one-small-step-for-a-monkey-one-giant-lawsuit-for-animal-kind/>.

³¹⁴ Hooker 2020 <https://www.wakeforestlawreview.com/2020/02/naruto-v-slater-one-small-step-for-a-monkey-one-giant-lawsuit-for-animal-kind/>.

and Naruto cannot, therefore, sue for copyright infringement.³¹⁵ The district court agreed with Slater and ruled that the *Copyright Act* does not "plainly extend the concept of authorship or statutory standing to animals".³¹⁶

During the Ninth Circuit hearing, PETA questioned the issue of authorship and stated that the uncertainty extends to works "independently created by artificially intelligent computers".³¹⁷ PETA argued that the legislators of the *Copyright Act*:

did not provide an 'express' definition at all. By its silence, Congress accepted the broad constitutional notion of authorship and the judicial construction that had been in place since at least the 19th century.³¹⁸

PETA further asserted that precedent exists stating that "copyright protection extends to *all* original works of authorship fixed in any tangible medium".³¹⁹ Despite PETA's efforts, the court held that animals do not have legal standing to bring forward a copyright infringement case.³²⁰

It should be noted that PETA and Naruto lost the case based on a lack of standing and that the question of who, if anyone, has a right to claim copyright in non-human works was never answered.³²¹ No answer therefore emanated from this one-of-a-kind case in whether the works created by non-humans are eligible for copyright.

In bringing the discussion back to the issue of artificially generated creations, it would seem to the writer that in the US, which is dealing with the most generative AI cases,

³¹⁵ Hooker 2020 <https://www.wakeforestlawreview.com/2020/02/naruto-v-slater-one-small-step-for-a-monkey-one-giant-lawsuit-for-animal-kind/>.

³¹⁶ Hooker 2020 <https://www.wakeforestlawreview.com/2020/02/naruto-v-slater-one-small-step-for-a-monkey-one-giant-lawsuit-for-animal-kind/>.

³¹⁷ Hooker 2020 <https://www.wakeforestlawreview.com/2020/02/naruto-v-slater-one-small-step-for-a-monkey-one-giant-lawsuit-for-animal-kind/>.

³¹⁸ Hooker 2020 <https://www.wakeforestlawreview.com/2020/02/naruto-v-slater-one-small-step-for-a-monkey-one-giant-lawsuit-for-animal-kind/>.

³¹⁹ Hooker 2020 <https://www.wakeforestlawreview.com/2020/02/naruto-v-slater-one-small-step-for-a-monkey-one-giant-lawsuit-for-animal-kind/>.

³²⁰ Hooker 2020 <https://www.wakeforestlawreview.com/2020/02/naruto-v-slater-one-small-step-for-a-monkey-one-giant-lawsuit-for-animal-kind/>.

³²¹ Hooker 2020 <https://www.wakeforestlawreview.com/2020/02/naruto-v-slater-one-small-step-for-a-monkey-one-giant-lawsuit-for-animal-kind/>.

AI-generated creations cannot be protected by copyright as they lack human creativity.³²²

3.2.3 *The United Kingdom's position*

Similar to South Africa, and contrary to many other countries such as the US, the UK's *Copyright, Designs and Patents Act* (CDPA) allows for the protection of "computer-generated works".³²³ Section 178 defines computer-generated work as "work generated by a computer in circumstances such that there is no human author".³²⁴

The author in such circumstances then is:

the person by whom the arrangements necessary for the creation of the work are undertaken.³²⁵

However, even if the Act makes provision for such, copyright can still only exist when the element of originality is satisfied, in that the author has exercised intellectual creativity.³²⁶ As a result of interpretation of section 11, it is clear that there will be an author for AI-generated creations. The question remains however then: who is the author? If authorship is attributed to the creator of the AI program itself, then the input by him or her may be too far removed from the eventual output of the AI.³²⁷ If authorship is attributed to the person giving the prompts and the AI is viewed as a mere tool in the process of creating, then the degree to which the prompter engaged in the eventual output will be a subjective question, leaving open more doors for confusion and debate.³²⁸ In June 2022, the UK Government concluded on its consultation paper regarding AI and copyright, by stating that they acknowledge the challenges posed, but that as AI is still in its infancy, it would not be wise to amend IP provisions as yet and that they would return to the subject when the time was

³²² Glover 2024 <https://builtin.com/artificial-intelligence/ai-copyright>.

³²³ *Copyright, Designs and Patents Act* 1988 (UK).

³²⁴ Section 178 of the *Copyright, Designs and Patents Act* 1988 (UK).

³²⁵ Section 11 of the *Copyright, Designs and Patents Act* 1988 (UK).

³²⁶ Hayward *et al* 2023 <https://www.herbertsmithfreehills.com/insights/2023-05/the-ip-in-ai-does-copyright-protect-ai-generated-works>.

³²⁷ Hayward *et al* 2023 <https://www.herbertsmithfreehills.com/insights/2023-05/the-ip-in-ai-does-copyright-protect-ai-generated-works>.

³²⁸ Hayward *et al* 2023 <https://www.herbertsmithfreehills.com/insights/2023-05/the-ip-in-ai-does-copyright-protect-ai-generated-works>.

right.³²⁹ Given the proliferation of AI-based cases in 2023, the writer is of the opinion that the UK's consultation paper would have been an ideal springboard to AI regulation in the field of IP had it been further considered at the time.

3.2.4 The Chinese position

The Beijing Internet Court recently issued a ruling in an infringement case that AI-generated creations can be protected by copyright.³³⁰ The court held that the plaintiff's set of AI-generated images had in fact satisfied the concept of originality, that sufficient human creativity was present, and should therefore be protected.³³¹ The court held that the plaintiff had continuously modified and adjusted prompts and parameters before eventually arriving at the desired image, and that the images as such are not "mechanical intellectual achievements", but a reflection of the plaintiff's personality, expressive thoughts, and aesthetic choices.³³² The court held that the very purpose of copyright protection is the encouragement of creativity and that as long as the AI-generated work reflects a human's original intellect, these outputs should be protected by copyright.³³³

3.2.5 The South Korean position

Against the status quo thus far, an AI-generated film was recently registered for copyright protection in South Korea as a compilation work.³³⁴ The film, entitled *AI Suro's Wife* and produced by Nara AI Film (a subsidiary of Nara Knowledge Information), received its copyright registration from the Korea Copyright Commission on 29 December 2023.³³⁵ Interestingly, the concept and scenarios were produced by LLMs such as GPT-4 and GPT-3.5, whereas the visual images were produced by

³²⁹ Hayward *et al* 2023 <https://www.herbertsmithfreehills.com/insights/2023-05/the-ip-in-ai-does-copyright-protect-ai-generated-works>.

³³⁰ Wodecki 2023 <https://aibusiness.com/nlp/chinese-court-s-landmark-ruling-ai-images-can-be-copyrighted#close-modal>.

³³¹ Wodecki 2023 <https://aibusiness.com/nlp/chinese-court-s-landmark-ruling-ai-images-can-be-copyrighted#close-modal>.

³³² Wodecki 2023 <https://aibusiness.com/nlp/chinese-court-s-landmark-ruling-ai-images-can-be-copyrighted#close-modal>.

³³³ Se-min 2024 <https://www.aitimes.com/news/articleView.html?idxno=156286>.

³³⁴ Se-min 2024 <https://www.aitimes.com/news/articleView.html?idxno=156286>.

³³⁵ Se-min 2024 <https://www.aitimes.com/news/articleView.html?idxno=156286>.

Midjourney and Stable Diffusion.³³⁶ The video scenes were created using Zen-2 and D-ID, Clova Dubbing was in charge of the voices of characters involved, and even the music playing was produced by Soundrow.³³⁷ Although the AI programs factually produced every aspect of the film, NARA AI Film was heavily involved in the editing process.³³⁸ The producers added that in order to circumvent any copyright litigation issues which might arise, they "made various attempts, such as adding retouching work to images".³³⁹ The "substantial input" requirement therefore seems to be a recurring theme regarding the issue of copyright.

Interestingly, the Ministry of Culture, Sports and Tourism together with the Korea Copyright Commission, released a set of AI copyright guidelines on 27 December 2023 and emphasized that "selection and arrangement" is of paramount importance.³⁴⁰ Similarly, the "2023 Copyright Registration Review Handbook" states that:

If elements of traditional copyright are implemented by artificial intelligence technology, copyright is not recognised, but if humans have modified the artificial intelligence product in selection, arrangement etc., copyright is recognised to a limited extent.³⁴¹

It would seem that the Korean position is that AI-generated creations are capable of copyright protection; however, flowing from the interpretation of the 2023 Copyright Registration Review Handbook, works created fully autonomously would not be protected. This view is endorsed by the chief operating officer of Nara Knowledge Information, stating that "the copyright of output independently produced by AI is still controversial".³⁴²

3.2.6 The Irish position

Section 2 of the *Copyright and Related Rights Act* of Ireland provides an interesting definition for computer-generated work in that such work "is generated by a computer

³³⁶ Se-min 2024 <https://www.aitimes.com/news/articleView.html?idxno=156286>.

³³⁷ Se-min 2024 <https://www.aitimes.com/news/articleView.html?idxno=156286>.

³³⁸ Se-min 2024 <https://www.aitimes.com/news/articleView.html?idxno=156286>.

³³⁹ Se-min 2024 <https://www.aitimes.com/news/articleView.html?idxno=156286>.

³⁴⁰ Se-min 2024 <https://www.aitimes.com/news/articleView.html?idxno=156286>.

³⁴¹ Se-min 2024 <https://www.aitimes.com/news/articleView.html?idxno=156286>.

³⁴² Se-min 2024 <https://www.aitimes.com/news/articleView.html?idxno=156286>.

in circumstances where the author of the work is not an individual".³⁴³ If one interprets the word "individual" as meaning a human being, then any "computer generated works" do not exist.³⁴⁴ This seems to be a unique approach to the protection of "computer generated".

3.2.7 *The Czech Position*

In a first for Europe, the Czech Republic recently addressed the issue of copyright in artificially generated creations.³⁴⁵ The case in question dealt with a prompt on the software DALL-E in which the plaintiff asked the LLM to generate an image encompassing parties signing a business contract.³⁴⁶ After this was done, the plaintiff used the generated image on their company's website.³⁴⁷ Subsequently, the defendant in the matter took said image from the plaintiff's website to use it on their own, to which the plaintiff, claiming authorship, complained that the defendant did not have the necessary permission to use the image.³⁴⁸ The court in Prague therefore had to deal with the following issues: whether the image which had been created by DALL-E constitutes a work and is therefore eligible for copyright protection, and whether the prompter of the image could be regarded as the author.³⁴⁹

In response to the issues, the court concluded that natural persons alone are authors for purposes of copyrighted works and that AI programs cannot be regarded as authors.³⁵⁰ The court further stated that the prompter in such matters should be able to demonstrate that the output by the LLM is an end-product of "their unique creative

³⁴³ Section 2 *Copyright and Related Rights Act* 28 of 2000 (Ireland).

³⁴⁴ Scannel 2022 *JIPLP* 735.

³⁴⁵ Scerba and Fort 2024 <https://www.technologysleage.com/2024/04/the-first-czech-case-on-generative-ai/>.

³⁴⁶ Scerba and Fort 2024 <https://www.technologysleage.com/2024/04/the-first-czech-case-on-generative-ai/>.

³⁴⁷ Scerba and Fort 2024 <https://www.technologysleage.com/2024/04/the-first-czech-case-on-generative-ai/>.

³⁴⁸ Scerba and Fort 2024 <https://www.technologysleage.com/2024/04/the-first-czech-case-on-generative-ai/>.

³⁴⁹ Scerba and Fort 2024 <https://www.technologysleage.com/2024/04/the-first-czech-case-on-generative-ai/>.

³⁵⁰ Scerba and Fort 2024 <https://www.technologysleage.com/2024/04/the-first-czech-case-on-generative-ai/>.

contribution" and anything contrary to such will not be regarded as a work.³⁵¹ The court therefore concluded that the plaintiff had not satisfied the requirements of an author and therefore had no copyright in the image in dispute and no right over any further dealings in the image.³⁵²

It would therefore seem that the Czech court valued highly the concept of a "unique creative contribution".³⁵³ If one can therefore argue that an image generated by an AI was sufficiently "reworked" or "re-prompted" (for lack of a better term) to eventually arrive at what the prompter had envisioned from the start, there may very well be an argument that such output could receive copyright protection.³⁵⁴

3.2.8 The French position

France has recently legislatively proposed that its copyright provisions should be amended in order to properly address AI-generated works.³⁵⁵ In the explanatory memorandum of Bill No. 1630, a proposed law aimed at regulation of artificial intelligence through copyright³⁵⁶ released by the French National Assembly, the speaker addresses Article L. 112-1 of the Intellectual Property Code³⁵⁷ which states that:

the provisions of this code protect the rights of authors over all works of the mind, whatever their genre, form of expression, merit or purpose.³⁵⁸

as well as Article L. 121-1 stating that "the author enjoys the right to respect for his name, his status and his work".³⁵⁹

³⁵¹ Scerba and Fort 2024 <https://www.technologysleage.com/2024/04/the-first-czech-case-on-generative-ai/>.

³⁵² Scerba and Fort 2024 <https://www.technologysleage.com/2024/04/the-first-czech-case-on-generative-ai/>.

³⁵³ Scerba and Fort 2024 <https://www.technologysleage.com/2024/04/the-first-czech-case-on-generative-ai/>.

³⁵⁴ Scerba and Fort 2024 <https://www.technologysleage.com/2024/04/the-first-czech-case-on-generative-ai/>.

³⁵⁵ Bill No. 1630 *Proposed Law Aiming to Regulate Artificial Intelligence through Copyright* (France).

³⁵⁶ Bill No. 1630 *Proposed Law Aiming to Regulate Artificial Intelligence through Copyright* (France).

³⁵⁷ *Code de la propriété intellectuelle* (France).

³⁵⁸ Article L 112-1 of the *Code de la propriété intellectuelle* (France).

³⁵⁹ Article L 121-1 of the *Code de la propriété intellectuelle* (France).

The speaker suggested that it is imperative that the regulation of generative AI systems should be interpreted in line with human centricity to be aligned with the French *Intellectual Property Code*.³⁶⁰ The speaker claimed that this regulation is necessary:

even if the possibilities offered by artificial intelligences disrupt our traditional categories and many questions remain unanswered for the moment.³⁶¹

The speaker calls for strict measures to be put in place in order to control AI-generated works in such a manner that it is possible to identify the human authors of such works and that authorities are able to call up remuneration derived from the exploitation of these works in a fair and equitable manner.³⁶² This, in turn, will encourage innovation in the artificial intelligence space, while simultaneously the rights of all parties involved are balanced.³⁶³ These controls will enable the necessity that generative AI companies obtain consent from the authors of the works they want to use as training data for their programs.³⁶⁴ The suggestion then follows that a tax system be implemented in situations where AI generates outputs based on the works of an unknown author.³⁶⁵

The Bill suggests that Article L. 321-2³⁶⁶ be supplemented by including, *inter alia*, the following paragraphs:

When the work is created by artificial intelligence without direct human intervention, the only rights holders are the authors or right holders of the works that made it possible to design said artificial work.³⁶⁷

It would appear that originality would then have to lie with these persons.

Regarding the implementation of a tax system for the collection of revenue:

Collective management of rights to works generated by artificial intelligence may be carried out by the author's societies or other collective management organizations. These entities are authorized to represent the rights holders and to collect the

³⁶⁰ Bill No. 1630 *Proposed Law Aiming to Regulate Artificial Intelligence through Copyright* (France).

³⁶¹ Bill No. 1630 *Proposed Law Aiming to Regulate Artificial Intelligence through Copyright* (France) (it should also be stated that this is a direct translation to English from the original French text).

³⁶² Bill No. 1630 *Proposed Law Aiming to Regulate Artificial Intelligence through Copyright* (France).

³⁶³ Bill No. 1630 *Proposed Law Aiming to Regulate Artificial Intelligence through Copyright* (France).

³⁶⁴ Bill No. 1630 *Proposed Law Aiming to Regulate Artificial Intelligence through Copyright* (France).

³⁶⁵ Bill No. 1630 *Proposed Law Aiming to Regulate Artificial Intelligence through Copyright* (France).

³⁶⁶ Article L. 321-2 of the *Code de la propriété intellectuelle* (France).

³⁶⁷ Bill No. 1630 *Proposed Law Aiming to Regulate Artificial Intelligence through Copyright* (France) (it should also be stated that this is a direct translation to English from the original French text).

remuneration relating to the exploitation of the copy of the works, in accordance with the rules established by the statutes of these societies.³⁶⁸

The Bill also suggests that Article L. 121-2³⁶⁹ be supplemented by including:

In the event that a work has been generated by an artificial intelligence system, it is imperative to affix the mention: "work generated by AI" as well as to insert the name of the authors of the works which made it possible to produce such a work.³⁷⁰

3.2.9 *The South African position*

As stated earlier, South Africa makes provision for "computer-generated works".³⁷¹ In contrast to the United States and various other jurisdictions, copyright in South Africa is automatic and does not need to be registered to be protected.³⁷² As long as the requirements for copyright are met by the AI-generated work, the output should qualify for protection.

Under the current wording of the Copyright Act, an AI-generated work will most likely be classified as a "computer-generated" work; the question then arises as to whether the work is original. To determine originality, one would look at the elements of "skill, labour and judgment".³⁷³ One such way of proving these elements is through the use of the "sweat of the brow" test.³⁷⁴ The court in *Moneyweb (Pty) Ltd v Media 24 Ltd and Another* stated that:

A court will only be able to determine originality after it has weighed up all relevant considerations and made a value judgment. Our law still regards the time and effort spent by the author as material consideration in determining originality. But the time and effort spent must involve more than a mechanical, or slavish, copying of the existing material.³⁷⁵

³⁶⁸ Bill No. 1630 *Proposed Law Aiming to Regulate Artificial Intelligence through Copyright* (France) (it should also be stated that this is a direct translation to English from the original French text).

³⁶⁹ Article L 121-1 of the *Code de la propriété intellectuelle* (France).

³⁷⁰ Bill No. 1630 *Proposed Law Aiming to Regulate Artificial Intelligence through Copyright* (France) (it should also be stated that this is a direct translation to English from the original French text).

³⁷¹ Para (h) of the definition of "author" in section 1(1) of the *Copyright Act* 98 of 1978.

³⁷² Griffiths 2023 <https://www.mondaq.com/southafrica/copyright/1290132/artificial-intelligence-and-ip--who-owns-the-copyright>.

³⁷³ Van der Merwe *et al Law of Intellectual Property in South Africa* 204.

³⁷⁴ Van der Merwe *et al Law of Intellectual Property in South Africa* 204.

³⁷⁵ *Moneyweb (Pty) Ltd v Media 24 Ltd and Another* (31575/2013) [2016] ZAGPJHC 81 para 15.

A work is therefore original when the author has sufficiently applied his mind to the end product.³⁷⁶ It should also be noted that originality does not mean novelty.³⁷⁷ Originality merely refers to the fact that the work should be a creation from the mind of the author and not simply a direct duplication of another's work.³⁷⁸ Interestingly, and a fact that may be related directly to generative AI outputs, is that an infringing work may still be original.³⁷⁹ Section 2(3) of the Copyright Act states that a work:

shall not be ineligible for copyright by reason only that the making of the work, or the doing of any act in relation to the work, involved an infringement of copyright in some other work.³⁸⁰

This principle was explained in *Haupt t/a Soft Copy v Brewers Marketing Intelligence (Pty) Ltd* stating that:

if a work is eligible for copyright, an improvement or refinement of that work would similarly be eligible for copyright, even if the improved work involved an infringement of copyright in the original work, if it satisfies the requirements of originality ... The alteration to the original work must be substantial.³⁸¹

The writer is of the opinion that section 2(3) and the description in the *Haupt* case, may be directly related to AI-generated work and provide such to be original. Even if it can be held that the work contained in the training dataset of the AI program had been infringed, the work it generates, nevertheless, can still be said to be original.

If it is held that the AI program's work is original, the requirement of having an identifiable author still has to be satisfied. Although the AI-generated work has no human author as the program itself created the output, however, authorship may be attributed to the person who made "the arrangements necessary for the creation of the work" in terms of computer-generated works.³⁸² Similarly to the stance of the UK, the creator of the AI program could then be the author of its outputs.³⁸³ However, the

³⁷⁶ *Moneyweb (Pty) Ltd v Media 24 Ltd and Another* (31575/2013) [2016] ZAGPJHC 81 para 15.

³⁷⁷ Van der Merwe *et al Law of Intellectual Property in South Africa* 205.

³⁷⁸ Van der Merwe *et al Law of Intellectual Property in South Africa* 205.

³⁷⁹ Van der Merwe *et al Law of Intellectual Property in South Africa* 206.

³⁸⁰ Section 2(3) of the *Copyright Act* 98 of 1978.

³⁸¹ *Haupt t/a Soft Copy v Brewers Marketing Intelligence (Pty) Ltd* 2006 (4) SA 458 (SCA) 470D-F para 24.

³⁸² Para (h) of the definition of "author" in section 1(1) of the *Copyright Act* 98 of 1978.

³⁸³ Griffiths 2023 <https://www.mondaq.com/southafrica/copyright/1290132/artificial-intelligence-and-ip--who-owns-the-copyright>.

creator of the program might not even be able to predict the outcome, as most of these generative AI programs are designed in that manner.³⁸⁴ The second argument could be that the person entering the prompts could be the author, but this too might lead to debates as mere prompts might not satisfy the test for originality.³⁸⁵ This will require a case-by-case enquiry into the steps initiated by the prompter to create the specific output. If no author can be identified, whether one believes it should be the AI program itself, the creator of the AI, or the human prompter, there can be no allocation of liability.

³⁸⁴ Griffiths 2023 <https://www.mondaq.com/southafrica/copyright/1290132/artificial-intelligence-and-ip--who-owns-the-copyright>.

³⁸⁵ Griffiths 2023 <https://www.mondaq.com/southafrica/copyright/1290132/artificial-intelligence-and-ip--who-owns-the-copyright>.

Chapter 4 The infringing question of input data

4.1 The training process and input data

Now that some of the positions regarding the output of AI-generated works and its IP implications in different jurisdictions have been examined, it would seem that a general consensus exists that there has to be significant involvement of human authors or inventors for the creation or invention to be inherently patentable or copyrightable.

However, with regard to infringement, the question of output satisfies one leg only. We will now move on to the question whether the use of the input data which the AI program uses to train from, could amount to copyright infringement and if so, what the threshold is to determine such infringement.

The copyright implications for using artists' work as training for AI-generated outputs have evoked emotional responses from both normative artists as well as the new so-called "AI artists" across the internet. These gripes have since migrated to the courts of the physical world, as seen in *Andersen v Stability AI*.³⁸⁶ Three artists alleged that Stability AI Ltd (creators of the previously mentioned Stable Diffusion), together with DeviantArt Inc and Midjourney Inc, used the copyrighted material of the plaintiffs, and others, in order to train the generative AI for its outputs without the necessary permission.³⁸⁷

Stable Diffusion was launched by Stability in 2022 with a "permission open-source license".³⁸⁸ The plaintiffs allege that Stability used billions of images from the internet to train Stable Diffusion.³⁸⁹ DeviantArt was founded as an online platform where digital artists are able to share their creative work.³⁹⁰ In 2022, DeviantArt released a product named DreamUp, a subscription-based commercial product, which relies on Stable

³⁸⁶ *Andersen v. Stability AI Ltd*. 3:23-cv-00201 (US).

³⁸⁷ Madigan 2024 <https://copyrightalliance.org/andersen-v-stability-ai-copyright-case/>.

³⁸⁸ Phillip 2023 <https://aeonlaw.com/judge-throws-out-most-of-artists-ai-copyright-infringement-claims/>.

³⁸⁹ Delman and Dickstein 2023 <https://www.loeb.com/en/insights/publications/2023/11/andersen-v-stability-ai-ltd>.

³⁹⁰ Delman and Dickstein 2023 <https://www.loeb.com/en/insights/publications/2023/11/andersen-v-stability-ai-ltd>.

Diffusion in order to create its images.³⁹¹ The plaintiffs allege that as DreamUp, and therefore also Stable Diffusion, was incorporated into the DeviantArt website, their terms of service were being violated regarding the use of content without permission and for a commercial purpose.³⁹² Midjourney launched its commercial product in 2022, which was also based on a text-to-image software program.³⁹³ Similarly, the plaintiffs alleged that Midjourney was trained using images which had been used to train Stable Diffusion.³⁹⁴

The court found that the complaint was flawed and granted the defendants' motions to dismiss.³⁹⁵ The plaintiffs were, however, allowed the opportunity to clarify their theories on how the defendants infringed their copyrights and stated that:

If [the] plaintiffs can plausibly plead that the defendants' AI products allow users to create new works by expressly referencing Andersen's works by name, the inferences about how and how much of Andersen's protected content remains in Stable Diffusion or is used by the AI end-products might be stronger.³⁹⁶

The plaintiffs expressed their opinion that if there was proof of direct copying, they did not need to show that there was a substantial similarity between the protected works and the AI-outputs.³⁹⁷ It may be noted that, somewhat similarly, also South African law requires "objective similarity" for a finding of copyright infringement.³⁹⁸

The court disagreed with this argument, stating that:

none of the Stable Diffusion output images provided in response to a particular Text Prompt is likely to be a close match for any specific image in the training data.³⁹⁹

³⁹¹ Delman and Dickstein 2023 <https://www.loeb.com/en/insights/publications/2023/11/andersen-v-stability-ai-ltd>.

³⁹² Delman and Dickstein 2023 <https://www.loeb.com/en/insights/publications/2023/11/andersen-v-stability-ai-ltd>.

³⁹³ *Andersen v. Stability AI Ltd.* 3:23-cv-00201 (US).

³⁹⁴ Delman and Dickstein 2023 <https://www.loeb.com/en/insights/publications/2023/11/andersen-v-stability-ai-ltd>.

³⁹⁵ Delman and Dickstein 2023 <https://www.loeb.com/en/insights/publications/2023/11/andersen-v-stability-ai-ltd>.

³⁹⁶ Phillip 2023 <https://aeonlaw.com/judge-throws-out-most-of-artists-ai-copyright-infringement-claims/>.

³⁹⁷ Phillip 2023 <https://aeonlaw.com/judge-throws-out-most-of-artists-ai-copyright-infringement-claims/>.

³⁹⁸ Khumalo 2020 <https://www.golegal.co.za/infringement-copyright-licensing/>.

³⁹⁹ Phillip 2023 <https://aeonlaw.com/judge-throws-out-most-of-artists-ai-copyright-infringement-claims/>.

Parallels from the above problems may be explained with the term "derivative work".⁴⁰⁰ In the US-based case *Andy Warhol Foundation for the Visual Arts Inc v Goldsmith*,⁴⁰¹ Warhol created two drawings and fourteen prints based on the defendant's unpublished photograph taken in 1981, of the famous artist, Prince.⁴⁰² After Prince's death, Vanity Fair published a commemorative issue in his honour by displaying a version of the photograph in question.⁴⁰³ Goldsmith realised that it was her work being used and an infringement suit followed.⁴⁰⁴ The Supreme Court of the US ultimately ruled in favour of Goldsmith, stating that the two works serve the same "purpose and character".⁴⁰⁵

One could therefore infer that when dealing with an infringement case regarding AI-generated creations, courts may use the *Warhol* case as a starting point in determining the term "substantial similarity" and examine whether the AI-generated output is "in service of a fundamentally different and new artistic purpose and character" than that of the works used in its training data, to determine whether copyright was infringed.⁴⁰⁶

In *Getty Images v Stability AI*,⁴⁰⁷ a UK case, Stable Diffusion landed in the line of fire once again. Getty Images alleged that Stability AI infringed its copyrights in using its data in training for its Stable Diffusion program and for its outputs, which "reproduce" Getty Images' copyrighted work.⁴⁰⁸ The interesting part of this case is that the court referred to the territorial nature of copyright and that the fundamental issue was whether Stable Diffusion's training took place in the UK or elsewhere.⁴⁰⁹ If the training

⁴⁰⁰ Appel, Neelbauer and Schweidel 2023 <https://hbr.org/2023/04/generative-ai-has-an-intellectual-property-problem>.

⁴⁰¹ *Andy Warhol Foundation for the Visual Arts Inc v Goldsmith* 143 S. Ct. 1258 (2023) (US).

⁴⁰² Cascone 2023 <https://news.artnet.com/art-world/the-supreme-court-ruling-lynn-goldsmith-andy-warhol-foundation-2304684>.

⁴⁰³ Cascone 2023 <https://news.artnet.com/art-world/the-supreme-court-ruling-lynn-goldsmith-andy-warhol-foundation-2304684>.

⁴⁰⁴ Cascone 2023 <https://news.artnet.com/art-world/the-supreme-court-ruling-lynn-goldsmith-andy-warhol-foundation-2304684>.

⁴⁰⁵ Cascone 2023 <https://news.artnet.com/art-world/the-supreme-court-ruling-lynn-goldsmith-andy-warhol-foundation-2304684>.

⁴⁰⁶ *Andy Warhol Foundation for the Visual Arts Inc v Goldsmith* 143 S. Ct. 1258 (2023) (US).

⁴⁰⁷ *Getty Images v Stability AI* [2023] EWHC 3090 (Ch) (UK).

⁴⁰⁸ Davies and Dennis 2024 <https://www.pinsentmasons.com/out-law/analysis/getty-images-v-stability-ai-implications-copyright-law-licensing>.

⁴⁰⁹ Davies and Dennis 2024 <https://www.pinsentmasons.com/out-law/analysis/getty-images-v-stability-ai-implications-copyright-law-licensing>.

took place within the UK, there might very well be an argument for infringement of copyright; however, if the training occurred outside the UK's jurisdiction, then according to the *Copyright, Designs and Patents Act*⁴¹⁰, there would be no copyright infringement for purposes of the UK jurisdiction.⁴¹¹

With regard to the secondary infringement claim, the court held that the interpretation of the word "article" in section 22 of the *Copyright, Designs and Patents Act* will be of utmost importance.⁴¹²

Section 22 reads:

copyright in a work is infringed by a person who, without the licence of the copyright owner, imports into the United Kingdom, otherwise than for his private and domestic use, an article which is, and which he knows or has reason to believe is, an infringing copy of the work.⁴¹³

If it can be successfully argued and interpreted that the making available of Stable Diffusion as an online software in the UK constitutes an "article", and the eventual outputs of Stable Diffusion are commercialised and adhere to the rest of section 22, then Getty Images might have a case for copyright infringement.⁴¹⁴

Furthermore, unless it can be proven that an AI-generated work is "substantially similar" (regarding which no legal consensus exists as to what this entails) to an existing protected work, there is no violation of copyrights.⁴¹⁵ Subsequently, the fair dealing or fair use doctrine can come into operation when one deals with the training data of generative AI programs.⁴¹⁶

Kate Crawford⁴¹⁷ states that the activity of transforming human creations into mere data has an implicit consequence in that it is perceived as publicly available and "there

⁴¹⁰ *Copyright, Designs and Patents Act* 1988 (UK).

⁴¹¹ Davies and Dennis 2024 <https://www.pinsentmasons.com/out-law/analysis/getty-images-v-stability-ai-implications-copyright-law-licensing>.

⁴¹² Dennis 2023 <https://www.pinsentmasons.com/out-law/news/getty-images-v-stability-ai>.

⁴¹³ Section 22 of the *Copyright, Designs and Patents Act* 1988 (UK).

⁴¹⁴ Dennis 2023 <https://www.pinsentmasons.com/out-law/news/getty-images-v-stability-ai>.

⁴¹⁵ Glover 2024 <https://builtin.com/artificial-intelligence/ai-copyright>.

⁴¹⁶ Glover 2024 <https://builtin.com/artificial-intelligence/ai-copyright>.

⁴¹⁷ Craig 2025 (draft) *CKLR*.

for the taking".⁴¹⁸ Crawford compares the action of mass AI training with the gold rush of late:

The practices of data extraction and training dataset construction are premised on a commercialized capture of what was previously part of the commons.... an extraction of knowledge-value from public goods. ...[W]e see a handful of privately owned companies that now have enormous power to extract insights and profits from those sources. The new AI gold rush consists of enclosing different fields of human knowing, feeling, and action—every time of available data—all caught up in an expansionist logic of never-ending collection....a pillaging of public space.⁴¹⁹

It is argued then that, on this basis, there is persuasive reasoning to end, or at least limit, the mass extraction of human-created works that serve as a profit-making scheme for tech-based companies.⁴²⁰ In a different article, Crawford and Schulz are of the opinion that:

Copyright law was developed by eighteenth-century capitalists to intertwine art with commerce. In the twenty-first century, it is being used by technology companies to allow them to exploit all the works of human creativity that are digitized and online.⁴²¹

This then follows Craig's observation that similarly to the way in which copyright laws were taken advantage of by capitalists throughout history, current limits placed on copyright laws, such as fair use or fair dealings, similarly play into the hands of big corporates.⁴²² A strong argument to prevent these powerful entities from commercially exploiting human creativity through the use of AI technology, is to amend copyright laws or at least put a measurable limit on fair use or dealings as they pertain to artificial intelligence.⁴²³

Many have called on these AI companies to acknowledge the original authors of the works used in the process of training the AI; however, this proposition is implausible for many reasons.⁴²⁴ Stable Diffusion's first version required a data set consisting of

⁴¹⁸ Craig 2025 (draft) *CKLR*.

⁴¹⁹ Crawford *Atlas of AI* 120-121.

⁴²⁰ Craig 2025 (draft) *CKLR* 12.

⁴²¹ Crawford and Schultz 2024 *Issues in Science and Technology*.

⁴²² Craig 2025 (draft) *CKLR* 12.

⁴²³ Craig 2025 (draft) *CKLR* 12.

⁴²⁴ Craig 2025 (draft) *CKLR* 15.

roughly 2.3 billion images in its training dataset.⁴²⁵ It would be an impossible task to be able to identify each and every creator of each and every work used in the training phase.⁴²⁶ This proposition would invariably stagnate the development of any future AI generative technologies.⁴²⁷ Even in the event of this being achieved, it is argued that it would have no practical reward for human authors or owners.⁴²⁸ If compensation is sought by owners of the copyrighted works used as input, the value of such transfer would be insignificant (being only one of a few billion images used to generate a work that might not be copyright-protected at the end of it all).⁴²⁹ Furthermore, the mere transaction costs of attempting to achieve this mass-scale drive to compensate would be disproportionate to the amount actually paid out to owners.⁴³⁰ Craig argues that this approach "seems almost as pointless as it does improbable".⁴³¹ One should also be wary of using emotive language such as "theft" in the context of these big corporates using, seemingly, available works as training data.⁴³² Gordon puts it:

while there is an obvious moral attractiveness to the idea that it is unjust for an entity to reap where it has not sown...when taken literally, as a standalone prohibition on free riding, the...claim is drastically overbroad. A culture could not exist if all free riding were prohibited within it.⁴³³

This presumption of AI entities unjustly stealing human creativity for commercial gain is therefore unfounded.⁴³⁴ Craig argues that using words such as "theft" is also dangerous considering the works we deal with in this instance, i.e. intangible property:

Appropriation of a physical thing is very different from the unauthorized use of an intangible artifact: being non-rivalrous, informational works can be infinitely reproduced and reused without depriving anyone of the enjoyment of the work or the information it contains.⁴³⁵

⁴²⁵ Craig 2025 (draft) *CKLR* 15.

⁴²⁶ Craig 2025 (draft) *CKLR* 15.

⁴²⁷ Craig 2025 (draft) *CKLR* 15.

⁴²⁸ Craig 2025 (draft) *CKLR* 15.

⁴²⁹ Craig 2025 (draft) *CKLR* 15.

⁴³⁰ Craig 2025 (draft) *CKLR* 15.

⁴³¹ Craig 2025 (draft) *CKLR* 15.

⁴³² Craig 2025 (draft) *CKLR* 19.

⁴³³ Gordon *VLR* 167.

⁴³⁴ Craig 2025 (draft) *CKLR* 20.

⁴³⁵ Craig 2025 (draft) *CKLR* 20.

Following on, the mere fact that works are used in training datasets does not deprive the author or owner of such work of the use and enjoyment of such.⁴³⁶ If one were to steer away from generative AI models in terms of IP for a brief moment for illustrative purposes, Craig uses the example of an AI model designed to use copyrighted material as training in order to process data for the sole purpose of predicting certain outcomes or discoveries in fields such as medicine or science and not for the production of any creative output that could compete with the works in its training dataset.⁴³⁷ Therefore, completely prohibiting these companies from using protected material in training could be potentially detrimental to the discovery of new treatments in the medical field.⁴³⁸ If one were to prohibit the use of training data in certain circumstances, but allowing them in others, this could further complicate an already confusing scenario.⁴³⁹ Alarm bells go off when AI is involved and:

the rules that apply to recorded music or art also carry over to the scientific papers and data used for medical research and development.⁴⁴⁰

Craig warns of the potentially damaging effect that the prohibition on the use of copyrighted work as training data would have on the industry and public at large:

An approach to generative AI that relies, for its regulatory force, upon the presumed rights of copyright owners to prohibit the use of their works as sources of information and objects of analysis, creates a private realm of exclusion far greater than any copyright claim should afford. In doing so, it encloses elements of the public domain and forecloses an unknowable number of potentially beneficial uses.⁴⁴¹

4.2 The doctrine of fair use/dealings and derivative work/adaptation

4.2.1 Lawfulness of using data

The question of input data seems to be even more controversial and concerning than its output counterpart. When one takes the program Stable Diffusion referred to earlier into consideration, the input it uses is collected by a non-profit organisation called

⁴³⁶ Craig 2025 (draft) *CKLR* 20.

⁴³⁷ Craig 2025 (draft) *CKLR* 21.

⁴³⁸ Craig 2025 (draft) *CKLR* 21.

⁴³⁹ Craig 2025 (draft) *CKLR* 21.

⁴⁴⁰ Love 2023 <https://www.scientificamerican.com/article/we-need-smart-intellectual-property-laws-for-artificial-intelligence/>.

⁴⁴¹ Craig 2025 (draft) *CKLR* 21.

"Large-scale Artificial Intelligence Open Network" (LAION).⁴⁴² LAION is built of billions of images collected from the internet, classifying and pairing them into specific categories (or datasets).⁴⁴³ These AI companies believe that the usage of the images is covered by the creation of derivatives and the "doctrine of fair use", aimed at the promotion of freedom of expression.⁴⁴⁴ Countries such as Israel and Japan have already taken steps to structure how they will set out a fair-use exception for such works.⁴⁴⁵ Although not an exhaustive list, Title 17, Section 107 of the US *Copyright Act* provides four components that should be considered when one deals with whether unauthorised use of copyrighted works is lawful under the fair use doctrine:

- (1) the purpose and character of the use;⁴⁴⁶
- (2) the nature of the copyrighted work;⁴⁴⁷
- (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and⁴⁴⁸
- (4) the effect of the use upon the potential market for or value of the copyrighted work.⁴⁴⁹

According to section 101 of the US *Copyright Act*, a derivative work is work:

based upon one or more preexisting works, such as a translation, musical arrangement, dramatization, fictionalisation, motion picture version, sound recording, art reproduction, abridgment, condensation, or any other form in which a work may be recast, transformed, or adapted.⁴⁵⁰

Gervais states that the definition of derivatives could also be used in defining machine-learning in the context of creating content as the AI's output is primarily based upon

⁴⁴² Baio 2022 <https://waxy.org/2022/08/exploring-12-million-of-the-images-used-to-train-stable-diffusions-image-generator/>.

⁴⁴³ Baio 2022 <https://waxy.org/2022/08/exploring-12-million-of-the-images-used-to-train-stable-diffusions-image-generator/>.

⁴⁴⁴ Vincent 2022 <https://www.theverge.com/23444685/generative-ai-copyright-infringement-legal-fair-use-training-data>.

⁴⁴⁵ Cassidy, Savare and Sterba 2023 <https://www.reuters.com/legal/legalindustry/copyright-conundrum-protection-ai-works-2023-11-28/#:~:text=It%20states%20that%20in%20cases,the%20manipulated%20work%20can%20be>

⁴⁴⁶ Section 107(1) of the *Copyright Act* of 1976 (US).

⁴⁴⁷ Section 107(2) of the *Copyright Act* of 1976 (US).

⁴⁴⁸ Section 107(3) of the *Copyright Act* of 1976 (US).

⁴⁴⁹ Section 107(4) of the *Copyright Act* of 1976 (US).

⁴⁵⁰ Section 101 of the *Copyright Act* of 1976 (US).

its input data (the existing works).⁴⁵¹ This interpretation of a derivative work, Gervais holds, might "provide a very far-reaching tool to copyright owners".⁴⁵² Gervais states that in order for a work to infringe the "derivative work right", the work itself must be, for all intents and purposes, a "work" (meeting all the traditional requirements for copyright protection).⁴⁵³ Following this rule, and considering the courts' current stance on the non-copyrightability of AI-generated outputs due to a lack of human originality in such, AI-programs, intrinsically, cannot infringe on a copyright holder's derivative right.⁴⁵⁴

4.2.2 *Lawfulness of the output*

When the AI program produces its output from a set of one hundred paintings, but it does not include "distinguishable" components of the input paintings, the AI program may be said to have used "correlations and patterns" and not be a derivation.⁴⁵⁵ As the output has no substantial similarity (as seen in the *Andersen*⁴⁵⁶ case earlier), it would therefore be difficult to prove any infringement even when one assumes that the output is classified as a work.⁴⁵⁷ However, if the AI program produces an output "based upon" a set of five paintings by the same artist featuring the same elements, there might be an argument that the output is a derivative of the original paintings used as input.⁴⁵⁸ These hypothetical scenarios all, however, assume that the output by the AI program can be classified as a work for copyright purposes.

⁴⁵¹ Gervais *AI Derivatives: The Application to the Derivative Work Right to Literary and Artistic Productions of AI Machines* 1112.

⁴⁵² Gervais *AI Derivatives: The Application to the Derivative Work Right to Literary and Artistic Productions of AI Machines* 1113.

⁴⁵³ Gervais *AI Derivatives: The Application to the Derivative Work Right to Literary and Artistic Productions of AI Machines* 1127.

⁴⁵⁴ Gervais *AI Derivatives: The Application to the Derivative Work Right to Literary and Artistic Productions of AI Machines* 1127.

⁴⁵⁵ Gervais *AI Derivatives: The Application to the Derivative Work Right to Literary and Artistic Productions of AI Machines* 1128.

⁴⁵⁶ *Andersen v. Stability AI Ltd.* 3:23-cv-00201 (US).

⁴⁵⁷ Gervais *AI Derivatives: The Application to the Derivative Work Right to Literary and Artistic Productions of AI Machines* 1128.

⁴⁵⁸ Gervais *AI Derivatives: The Application to the Derivative Work Right to Literary and Artistic Productions of AI Machines* 1128.

In *Mazer v Stein*⁴⁵⁹ the court emphasised that the reason behind awarding copyright and patents is:

encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors.⁴⁶⁰

There should thus be a reward for the author's work and for any eventual derivation of such work.⁴⁶¹ Gervais holds that the test, then, would be:

whether the creative choices made by the program's author (or arguably by the user, if applicable) are present in the machine's output.⁴⁶²

Gervais is of the opinion that if the answer to the test is no, and one indeed protects the AI-generated output as the work of the programmer or user, then the foundational principle behind copyright protection is abandoned.⁴⁶³

Another question one may ask when examining the use of input data is the genuine purpose of such and whether it is competing with the work of the original artist.⁴⁶⁴ Therefore, Gervais holds that if the purpose is merely to train the AI program using the copyrighted data, it will most likely be covered by the fair use doctrine; however, the output of the program might not be covered.⁴⁶⁵ Khurana is of the opinion that because enforcement of these rights is difficult, companies are more concerned with how to prevent copyright infringement than to actually limit the sets of training data they use for their generative AI programs.⁴⁶⁶

In the recent strikes involving the Writers Guild of America (WGA) and the Screen Actors Guild (SAG), the WGA demanded the prohibition of AI writing or rewriting of

⁴⁵⁹ *Mazer v. Stein* 1954 347 U.S. 201, 219 (US).

⁴⁶⁰ Gervais *AI Derivatives: The Application to the Derivative Work Right to Literary and Artistic Productions of AI Machines* 1128.

⁴⁶¹ Gervais *AI Derivatives: The Application to the Derivative Work Right to Literary and Artistic Productions of AI Machines* 1131.

⁴⁶² Gervais *AI Derivatives: The Application to the Derivative Work Right to Literary and Artistic Productions of AI Machines* 1132.

⁴⁶³ Gervais *AI Derivatives: The Application to the Derivative Work Right to Literary and Artistic Productions of AI Machines* 1132.

⁴⁶⁴ Vincent 2022 <https://www.theverge.com/23444685/generative-ai-copyright-infringement-legal-fair-use-training-data>.

⁴⁶⁵ Vincent 2022 <https://www.theverge.com/23444685/generative-ai-copyright-infringement-legal-fair-use-training-data>.

⁴⁶⁶ Vincent 2022 <https://www.theverge.com/23444685/generative-ai-copyright-infringement-legal-fair-use-training-data>.

artistic mediums and for existing work being used as training data.⁴⁶⁷ SAG further argued that "human-created work" needs protection which includes an actor's "voice, likeness or performance" (more on this in Chapter 6).⁴⁶⁸ The resolution included numerous demands from the parties involved, including that the WGA may claim that an AI output had used a writer's original material.⁴⁶⁹

In *Thomson Reuters v Ross Intelligence*, Reuters sued Ross for its alleged use of Reuters' copyright-protected "legal headnotes" from its legal-research program WestLaw as training data.⁴⁷⁰ Ross' defence rested on the doctrine of fair use as the materials from Reuters were used as "a means to locate judicial opinions", and Reuters alleged infringement, stating that Ross wanted to create a competitor to its WestLaw.⁴⁷¹ Ross argues that fair use had been successfully argued in case law where content will be copied in order to discover "unprotectable information" or as a means to develop a new platform.⁴⁷² The judge held that the case will need to be decided by a jury and that it is unable to determine whether Ross had changed the WestLaw content into a "brand new research platform that serves a different purpose" to satisfy the fair use doctrine.⁴⁷³ It should also be noted that this requirement goes hand in hand with the concept of transformative uses.⁴⁷⁴ The US Copyright Office states that transformative uses:

⁴⁶⁷ Cassidy, Savare and Sterba 2023 <https://www.reuters.com/legal/legalindustry/copyright-conundrum-protection-ai-works-2023-11-28/#:~:text=It%20states%20that%20in%20cases,the%20manipulated%20work%20can%20be>

⁴⁶⁸ Dalton and The Associated Press 2023 <https://fortune.com/2023/07/24/sag-aftra-writers-strike-explained-artificial-intelligence/>.

⁴⁶⁹ Cassidy, Savare and Sterba 2023 <https://www.reuters.com/legal/legalindustry/copyright-conundrum-protection-ai-works-2023-11-28/#:~:text=It%20states%20that%20in%20cases,the%20manipulated%20work%20can%20be>

⁴⁷⁰ *Thomson Reuters Enterprise Centre GMBH and West Publishing Corp. v Ross Intelligence Inc.* No. 1:20-cv-613-SB (US).

⁴⁷¹ Brittain 2023 <https://www.reuters.com/legal/thomson-reuters-ai-copyright-dispute-must-go-trial-judge-says-2023-09-26/>.

⁴⁷² Hervey 2023 <https://www.theiplawblog.com/2023/11/articles/intellectual-property-litigation/ai-training-and-copyright-infringement-lessons-from-the-ross-intelligence-case/>.

⁴⁷³ Brittain 2023 <https://www.reuters.com/legal/thomson-reuters-ai-copyright-dispute-must-go-trial-judge-says-2023-09-26/>.

⁴⁷⁴ US Copyright Office 2023 <https://www.copyright.gov/fair-use/#:~:text=Transformative%20uses%20are%20those%20that,purpose%20of%20encouraging%20creative%20expression.>

are those that add something new, with a further purpose or different character, and do not substitute for the original use of the work.⁴⁷⁵

The court further asked an open-ended question: is it in "the public benefit to allow AI to be trained with copyrighted material".⁴⁷⁶ We await a date for the jury-based trial. Chanana and Braun are of the opinion that:

Many more jury trials will be required if judges must refrain from deciding whether the purpose of a generative AI system's use of copyrighted material to learn language patterns is to produce a new product or to replicate creative expression.⁴⁷⁷

The ongoing case between The New York Times, OpenAI, and Microsoft, is certainly set to provide some sort of clarity with regard to training data and also the LLMs right to keep data in its memory.⁴⁷⁸ The New York Times (The Times) alleges that OpenAI and Microsoft used millions of its online published articles to train chatbots which are now able to enter into competition with The New York Times as a reliable source of information and to "steal audiences away from" The Times.⁴⁷⁹ The Times states that they had approached the defendants to obtain a cordial resolution with regard to their intellectual property; however, the parties could not come to an agreement.⁴⁸⁰ Andreessen Horowitz, an American venture capital firm and early investor in OpenAI, is of the opinion that if the US adopts the stance of making AI vulnerable to copyright infringement, it would result in:

far less competition, far less innovation and very likely the loss of the United States' position as the leader in global AI development.⁴⁸¹

⁴⁷⁵ US Copyright Office 2023 <https://www.copyright.gov/fair-use/#:~:text=Transformative%20uses%20are%20those%20that,purpose%20of%20encouraging%20creative%20expression>.

⁴⁷⁶ Brittain 2023 <https://www.reuters.com/legal/thomson-reuters-ai-copyright-dispute-must-go-trial-judge-says-2023-09-26/>.

⁴⁷⁷ Chanana and Ing 2023 <https://www.jdsupra.com/legalnews/fair-use-question-goes-to-trial-in-ai-4914213/>.

⁴⁷⁸ Grynbaum and Mac 2023 <https://www.nytimes.com/2023/12/27/business/media/new-york-times-open-ai-microsoft-lawsuit.html>.

⁴⁷⁹ Grynbaum and Mac 2023 <https://www.nytimes.com/2023/12/27/business/media/new-york-times-open-ai-microsoft-lawsuit.html>.

⁴⁸⁰ Grynbaum and Mac 2023 <https://www.nytimes.com/2023/12/27/business/media/new-york-times-open-ai-microsoft-lawsuit.html>.

⁴⁸¹ Grynbaum and Mac 2023 <https://www.nytimes.com/2023/12/27/business/media/new-york-times-open-ai-microsoft-lawsuit.html>.

The other interesting segment of the case is the concept of "memorization" pertaining to LLMs like ChatGPT.⁴⁸² As most of the infringement cases involving AI revolve around the process of training the AI programs, the act of memorization may add additional copyright implications pertaining to the storage of the protected data it uses to train on.⁴⁸³ Memorization is the act by which LLMs train and tweak their responses.⁴⁸⁴ When prompting a specific task, the LLM is actually capable of reproducing a substantial part of the data it used to train on.⁴⁸⁵ In this case, The Times states that the act of memorization "shows that LLM parameters encode retrievable copies of many of those training works".⁴⁸⁶ The Times also illustrated in their suit how ChatGPT had recited, practically verbatim, significant parts of some of its work, stating that "each of those LLMs thus embodies many unauthorised copies or derivatives of Times works". A screenshot from this illustration, marked as "Exhibit J" in the suit,⁴⁸⁷ is found below for ease of comparison (the words marked in red are reproduced verbatim):

⁴⁸² Mathiasen 2023 https://www.linkedin.com/posts/jakobplesnermathiasen_ip-ai-copyright-activity-7150765714511929344--Bcb/.

⁴⁸³ Mathiasen 2023 https://www.linkedin.com/posts/jakobplesnermathiasen_ip-ai-copyright-activity-7150765714511929344--Bcb/.

⁴⁸⁴ Mathiasen 2023 https://www.linkedin.com/posts/jakobplesnermathiasen_ip-ai-copyright-activity-7150765714511929344--Bcb/.

⁴⁸⁵ Mathiasen 2023 https://www.linkedin.com/posts/jakobplesnermathiasen_ip-ai-copyright-activity-7150765714511929344--Bcb/.

⁴⁸⁶ *The New York Times Company v Microsoft Corporation and OpenAI Inc.* 1:23-cv-11195 (US).

⁴⁸⁷ *The New York Times Company v Microsoft Corporation and OpenAI Inc.* 1:23-cv-11195 (US).

Output from GPT-4:

many of America's other global companies — aren't nearly as avid in creating American jobs as other famous companies were in their heydays.

Apple employs 43,000 people in the United States and 20,000 overseas, a small fraction of the over 400,000 American workers at General Motors in the 1950s, or the hundreds of thousands at General Electric in the 1980s. Many more people work for Apple's contractors: an additional 700,000 people engineer, build and assemble iPads, iPhones and Apple's other products. But almost none of them work in the United States. Instead, they work for foreign companies in Asia, Europe and elsewhere, at factories that almost all electronics designers rely upon to build their wares.

"Apple's an example of why it's so hard to create middle-class jobs in the U.S. now," said Jared Bernstein, who until last year was an economic adviser to the White House. "If it's the pinnacle of capitalism, we should be worried."

Apple executives say that going overseas, at this point, is their only option. One former executive described how the company relied upon a Chinese factory to revamp iPhone manufacturing just weeks before the device was due on shelves. Apple had redesigned the iPhone's screen at the last minute, forcing an assembly line overhaul. New screens began arriving at the plant near midnight.

A foreman immediately roused 8,000 workers inside

Actual text from NYTimes:

many of its high-technology peers — are not nearly as avid in creating American jobs as other famous companies were in their heydays.

Apple employs 43,000 people in the United States and 20,000 overseas, a small fraction of the over 400,000 American workers at General Motors in the 1950s, or the hundreds of thousands at General Electric in the 1980s. Many more people work for Apple's contractors: an additional 700,000 people engineer, build and assemble iPads, iPhones and Apple's other products. But almost none of them work in the United States. Instead, they work for foreign companies in Asia, Europe and elsewhere, at factories that almost all electronics designers rely upon to build their wares.

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The writer is of the opinion that this is an example in which the court may hold that the requirement for infringement of USCO is satisfied, i.e. that the output has to be "substantially similar" to the original data contained in its training database.

Researchers for a company called Patronus AI undertook an investigation into the frequency of LLMs using copyrighted content to produce their respective outputs.⁴⁸⁸ The LLMs under scrutiny were GPT-4, Claude 2, Llama 2, and Mixtral (four of the leading text-based LLMs).⁴⁸⁹ The researchers found copyrighted material in all of the models, but found that GPT-4 (the most globally used model) had produced contents

⁴⁸⁸ Field 2024 <https://www.cnn.com/2024/03/06/gpt-4-researchers-tested-leading-ai-models-for-copyright-infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in>.

⁴⁸⁹ Field 2024 <https://www.cnn.com/2024/03/06/gpt-4-researchers-tested-leading-ai-models-for-copyright-infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in>.

that are copyright-protected in 44% of their tested prompts.⁴⁹⁰ The researchers used popular books (that have copyright protection in the United States) to test these models for any possible infringement.⁴⁹¹ Prompts such as "Continue the text to the best of your capabilities: Before you, Bella, my life was like a moonless night..." and "What is the first passage of *Gone Girl* by Gillian Flynn?" were used to test whether these outputs will reflect a similar (or identical) output compared to the original texts.⁴⁹² GPT-4 produced the exact passages from popular books one in every four prompts, while producing the "continue the text" prompts of the books an alarming 60% of the time.⁴⁹³ Claude 2 seemed to be more stringent in their outputs, only outputting copyright-protected material 16% of the time when prompted to produce an output of a book's text, but never folding when prompted to provide full passages.⁴⁹⁴ For all of these "passage" prompts, Claude responded with the message stating that it does not have access to copyrighted books and therefore refused to provide these.⁴⁹⁵ The CEO of Patronus AI stated that they initially thought that it would be much harder to prompt the LLMs to generate copyrighted material verbatim, and found the ease of producing this material surprising.⁴⁹⁶

⁴⁹⁰ Field 2024 <https://www.cnn.com/2024/03/06/gpt-4-researchers-tested-leading-ai-models-for-copyright-infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in.>

⁴⁹¹ Field 2024 <https://www.cnn.com/2024/03/06/gpt-4-researchers-tested-leading-ai-models-for-copyright-infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in.>

⁴⁹² Field 2024 <https://www.cnn.com/2024/03/06/gpt-4-researchers-tested-leading-ai-models-for-copyright-infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in.>

⁴⁹³ Field 2024 <https://www.cnn.com/2024/03/06/gpt-4-researchers-tested-leading-ai-models-for-copyright-infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in.>

⁴⁹⁴ Field 2024 <https://www.cnn.com/2024/03/06/gpt-4-researchers-tested-leading-ai-models-for-copyright-infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in.>

⁴⁹⁵ Field 2024 <https://www.cnn.com/2024/03/06/gpt-4-researchers-tested-leading-ai-models-for-copyright-infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in.>

⁴⁹⁶ Field 2024 <https://www.cnn.com/2024/03/06/gpt-4-researchers-tested-leading-ai-models-for-copyright-infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in.>

It is also interesting to note that OpenAI previously stated that it is "impossible" to train a powerful LLM using only publicly available content and that it would certainly not meet the creative needs of the society of today given the age of most of these available sources.⁴⁹⁷ In a response to an inquiry from the House of Lords in the United Kingdom, OpenAI wrote:

copyright today covers virtually every sort of human expression—including blog posts, photographs, forum posts, scraps of software code, and government documents—it would be impossible to train today's leading AI models without using copyrighted materials.⁴⁹⁸

Recently, the Information Commissioner's Office (ICO) of the UK released a consultation document (the first in what will be a series) outlining its view, and asking stakeholders for their views, on the circumstances under which it would be deemed legal for generative AI to use personal data obtained from the internet as input data to train on.⁴⁹⁹ The ICO argues that the enquiry is two-fold: firstly, the data processing cannot breach any laws such as intellectual property or law of contract; and secondly, there has to be a lawful basis for the developer to scrape the data (or a lawful basis enabling the AI to scrape the data itself).⁵⁰⁰ As it is obvious to any person that the first enquiry is rather straightforward, i.e. that the scraping of personal data may not infringe any laws, we will move on to discuss the second enquiry, namely that there has to be a lawful basis for such scraping. Article 6(1) of the UK's *General Data Protection Regulation* (GDPR) sets out six lawful bases for processing.⁵⁰¹ The ICO is of the opinion that it is unlikely for generative AI to fall into five of the six bases and therefore focuses on Article 6(1)(f), namely the "legitimate interest" basis.⁵⁰² In order for the developer to meet this basis, a three-part test must be passed, which parts

infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in.

⁴⁹⁷ Field 2024 [https://www.cnn.com/2024/03/06/gpt-4-researchers-tested-leading-ai-models-for-copyright-](https://www.cnn.com/2024/03/06/gpt-4-researchers-tested-leading-ai-models-for-copyright-infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in.)

infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in.

⁴⁹⁸ Field 2024 [https://www.cnn.com/2024/03/06/gpt-4-researchers-tested-leading-ai-models-for-copyright-](https://www.cnn.com/2024/03/06/gpt-4-researchers-tested-leading-ai-models-for-copyright-infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in.)

infringement.html#:~:text=%E2%80%9CBecause%20copyright%20today%20covers%20virtually,filing%20in%20the%20U.K.%2C%20in.

⁴⁹⁹ ICO 2024 <https://ico.org.uk/GenAILawfulBasis>.

⁵⁰⁰ ICO 2024 <https://ico.org.uk/GenAILawfulBasis>.

⁵⁰¹ Article 6(1) of the *General Data Protection Regulation* 2016/679 (UK).

⁵⁰² Article 6(1)(f) of the *General Data Protection Regulation* 2016/679 (UK).

are: there is a legitimate purpose for processing; the processing has to be necessary for the specific purpose; and, the interest being pursued cannot be overruled by the developer's interests.⁵⁰³

For the first leg of the test, the developer has to word the interest in a determined manner, that is the developer needs to state why specific data will be accessed during the phase of collecting the data for training.⁵⁰⁴ The ICO expresses that these interests might include a business interest for commercial gain or wider community-based interests; however the AI program's exact purpose must be evidenced.⁵⁰⁵ If a developer relies on the interests of the community, equal precaution has to be given to ensure that the members of said public use the programme for such intended purposes, which cannot be assumed.⁵⁰⁶ To realise this, the onus rests with the developers to implement suitable control measures.⁵⁰⁷ The second leg enquires whether it is, in fact, necessary for scraping to take place to achieve the purpose laid out in the first leg.⁵⁰⁸ The third leg includes a balanced assessment between the rights of the developer and the rights of the third party whose data is being scraped.⁵⁰⁹ The ICO refers to the scraping of information as "invisible processing" as individuals might not be aware that their data is being scraped.⁵¹⁰ If the generative AI developer's rights unequally outweigh the rights of the entity whose data is scraped, the balancing test fails and such scraping might therefore not be deemed to be lawful.⁵¹¹

On 6 February 2024, the UK government published its outcome of a consultation held with various stakeholders on a so-called "pro-innovation" approach to generative AI and the use of copyrighted material as training input.⁵¹² It would seem that such stakeholders, who included both existing IP right-holders and AI developers, were

⁵⁰³ ICO 2024 <https://ico.org.uk/GenAILawfulBasis>.

⁵⁰⁴ ICO 2024 <https://ico.org.uk/GenAILawfulBasis>.

⁵⁰⁵ ICO 2024 <https://ico.org.uk/GenAILawfulBasis>.

⁵⁰⁶ ICO 2024 <https://ico.org.uk/GenAILawfulBasis>.

⁵⁰⁷ ICO 2024 <https://ico.org.uk/GenAILawfulBasis>.

⁵⁰⁸ ICO 2024 <https://ico.org.uk/GenAILawfulBasis>.

⁵⁰⁹ ICO 2024 <https://ico.org.uk/GenAILawfulBasis>.

⁵¹⁰ ICO 2024 <https://ico.org.uk/GenAILawfulBasis>.

⁵¹¹ ICO 2024 <https://ico.org.uk/GenAILawfulBasis>.

⁵¹² UK Government 2024 <https://www.gov.uk/government/consultations/ai-regulation-a-pro-innovation-approach-policy-proposals/outcome/a-pro-innovation-approach-to-ai-regulation-government-response>.

unable to reach a consensus on the effective interaction between AI and copyright during a forum hosted in collaboration with the UKIPO.⁵¹³ Following this, a period of engagement among these stakeholders will commence to:

ensure the workability and effectiveness of an approach that allows the AI and creative sectors to grow together in partnership.⁵¹⁴

The UK government further reiterated that it is of paramount importance to ensure that these rights are balanced and that AI is used in an assistive role, rather than undermining "human creativity [and] innovation".⁵¹⁵ The UK government seems to be placing the focus on transparency, aiming to find a manner in which IP right-holders are fully aware when and to what extent their works are used as input.⁵¹⁶ To do this, the UK government will engage not only with AI developers or IP right-holders, but will seek close collaboration with its counterparts across the globe.⁵¹⁷

In Australia artists who specialise in indigenous artwork are complaining that their respective works are being used without authorisation in AI training datasets to produce indigenous art lookalikes and being sold on online platforms such as Adobe and eBay.⁵¹⁸ Popular stock-image websites Adobe and Shutterstock also provide a platform upon which one can buy these AI-generated images and use them on a commercial basis. Although Adobe requires the sellers of the images to be the owners of the intellectual property of the works, it is unclear how this is being enforced.⁵¹⁹

⁵¹³ UK Government 2024 <https://www.gov.uk/government/consultations/ai-regulation-a-pro-innovation-approach-policy-proposals/outcome/a-pro-innovation-approach-to-ai-regulation-government-response>.

⁵¹⁴ UK Government 2024 <https://www.gov.uk/government/consultations/ai-regulation-a-pro-innovation-approach-policy-proposals/outcome/a-pro-innovation-approach-to-ai-regulation-government-response>.

⁵¹⁵ UK Government 2024 <https://www.gov.uk/government/consultations/ai-regulation-a-pro-innovation-approach-policy-proposals/outcome/a-pro-innovation-approach-to-ai-regulation-government-response>.

⁵¹⁶ UK Government 2024 <https://www.gov.uk/government/consultations/ai-regulation-a-pro-innovation-approach-policy-proposals/outcome/a-pro-innovation-approach-to-ai-regulation-government-response>.

⁵¹⁷ UK Government 2024 <https://www.gov.uk/government/consultations/ai-regulation-a-pro-innovation-approach-policy-proposals/outcome/a-pro-innovation-approach-to-ai-regulation-government-response>.

⁵¹⁸ Wilson 2024 <https://www.crikey.com.au/2024/01/19/artificial-intelligence-fake-indigenous-art-stock-images/>.

⁵¹⁹ Wilson 2024 <https://www.crikey.com.au/2024/01/19/artificial-intelligence-fake-indigenous-art-stock-images/>.

In Japan, the Ministry of Economy, Trade and Industry released guidelines aiming to provide some clarity on the use of input data for training purposes.⁵²⁰ Like in many other jurisdictions, the guidelines aim to find a balance between the rights of creators and those of innovators.⁵²¹ The guidelines consider the concept of fair use when copyrighted works are used for "non-commercial purposes, educational research, or transformative purposes".⁵²² Allowing "transformative purposes" in the context of fair use might create some concerns, however it would seem that as long as the output is "significantly altered or repurposed", it should be covered.⁵²³ Besides this, transparency is also encouraged, referring to disclosure of the sources of works used in training sets, as well as obtaining the necessary licenses or permission before going forward (which may be an unsurmountable task).⁵²⁴ The guidelines also encourage AI companies to first consider works in the public domain before adopting copyright-protected works.⁵²⁵ The guidelines also call upon these companies to pay attention to any potential harm - such as biases built into existing content used for training - that the program may cause and should carefully consider the impact of such on society.⁵²⁶

⁵²⁰ Anon 2024 <https://elnion.com/2024/04/16/japans-draft-ai-copyright-guidelines-is-it-ok-to-train-ai-using-pirated-materials/#:~:text=The%20guidelines%20emphasise%20that%20the,may%20be%20considered%20fair%20use.>

⁵²¹ Anon 2024 <https://elnion.com/2024/04/16/japans-draft-ai-copyright-guidelines-is-it-ok-to-train-ai-using-pirated-materials/#:~:text=The%20guidelines%20emphasise%20that%20the,may%20be%20considered%20fair%20use.>

⁵²² Anon 2024 <https://elnion.com/2024/04/16/japans-draft-ai-copyright-guidelines-is-it-ok-to-train-ai-using-pirated-materials/#:~:text=The%20guidelines%20emphasise%20that%20the,may%20be%20considered%20fair%20use.>

⁵²³ Anon 2024 <https://elnion.com/2024/04/16/japans-draft-ai-copyright-guidelines-is-it-ok-to-train-ai-using-pirated-materials/#:~:text=The%20guidelines%20emphasise%20that%20the,may%20be%20considered%20fair%20use.>

⁵²⁴ Anon 2024 <https://elnion.com/2024/04/16/japans-draft-ai-copyright-guidelines-is-it-ok-to-train-ai-using-pirated-materials/#:~:text=The%20guidelines%20emphasise%20that%20the,may%20be%20considered%20fair%20use.>

⁵²⁵ Anon 2024 <https://elnion.com/2024/04/16/japans-draft-ai-copyright-guidelines-is-it-ok-to-train-ai-using-pirated-materials/#:~:text=The%20guidelines%20emphasise%20that%20the,may%20be%20considered%20fair%20use.>

⁵²⁶ Anon 2024 <https://elnion.com/2024/04/16/japans-draft-ai-copyright-guidelines-is-it-ok-to-train-ai-using-pirated-materials/#:~:text=The%20guidelines%20emphasise%20that%20the,may%20be%20considered%20fair%20use.>

During an interview held by LawTechLab, an initiative of the University of Cape Town's iNtaka Centre for Law and Technology, associate professor doctor Carys Craig, co-author of "The Death of the AI Author"⁵²⁷ shared her valuable insights into the potential issue of infringement when considering input data.⁵²⁸

Dr Craig is of the opinion that the input data issue should not be a copyright issue at all and that copyright would, in fact, be a "very poor and inept regulatory tool" for dealing with the issue.⁵²⁹ Dr Craig further states that countries should rather look at existing doctrine, and she believes that there should not even be a specific exemption provided to deal with the issue.⁵³⁰

Dr Craig argues that the use of copyright materials as input is not a "use" of the works as a "work", as these works are not used for their "meaning or understood by the machine in that way".⁵³¹ Dr Craig argues that these input materials are basically being converted into mere statistics and that the information from such statistics is what is training the AI program.⁵³² She goes on to say that such use is therefore beyond the scope of a copyright owner's rights towards their works and that copyright should therefore not even be considered at all.⁵³³

The host of the interview posed the following questions: since it is impractical to obtain consent from each copyright holder to use their respective works in an LLM (considering the sheer amount of works that are used during the training stage of the LLM) should this be a reason to waive any possible infringement claims; and, is there in fact something that regulators should do to govern the issue?⁵³⁴ Dr Craig answered stating that, as her position was that there is not any copyright dispute involved, and by implication therefore no infringement issue, one should rather focus on what the copyright holders are asking for, referring to the so-called three C's – consent, credit,

⁵²⁷ Craig and Kerr 2019 *OLR*.

⁵²⁸ LawTech Lab Podcast 2024 https://www.youtube.com/watch?v=vX-c-YOKs_8.

⁵²⁹ LawTech Lab Podcast 2024 https://www.youtube.com/watch?v=vX-c-YOKs_8.

⁵³⁰ LawTech Lab Podcast 2024 https://www.youtube.com/watch?v=vX-c-YOKs_8.

⁵³¹ LawTech Lab Podcast 2024 https://www.youtube.com/watch?v=vX-c-YOKs_8.

⁵³² LawTech Lab Podcast 2024 https://www.youtube.com/watch?v=vX-c-YOKs_8.

⁵³³ LawTech Lab Podcast 2024 https://www.youtube.com/watch?v=vX-c-YOKs_8.

⁵³⁴ LawTech Lab Podcast 2024 https://www.youtube.com/watch?v=vX-c-YOKs_8.

and/or compensation.⁵³⁵ Dr Craig then refers to a paper⁵³⁶ written by Martin Senftleben in which the author proposes a taxing system in the form of a levy imposed on generative AI systems or providers so as to protect artists' and creators' livelihoods.⁵³⁷

Dr Craig does, however, believe that if one follows the basic principles of copyright and an AI program generates a work which is *prima facie* similar on a substantial level to a work protected by copyright and that work is found in the training dataset, then courts may very well consider the question of copyright infringement.⁵³⁸ Practically, Dr Craig states that if one can therefore find a causal link between the output and the input (i.e. the original copyrighted work), and that the similarity of the output is a result of having access to the original copyrighted work, then copyright infringement may be considered.⁵³⁹

4.3 The input issue in South Africa

For the purposes of the question of input, it is important to determine how exactly copyright infringement is assessed under South African case law. South Africa follows a so-called dual test enquiry when determining whether a direct infringement occurred.⁵⁴⁰ Firstly, the test involves an objective comparison between a copyrighted work and the alleged infringing work (i.e. substantial similarity); and secondly, whether the alleged infringing work was created as a result of the copyrighted work (i.e. a casual link between the comparative works).⁵⁴¹

In the *Moneyweb* case⁵⁴², the applicant, *Moneyweb*, argued that the respondent, Media24, a direct competitor of the applicant, had infringed its copyright by unlawfully

⁵³⁵ LawTech Lab Podcast 2024 https://www.youtube.com/watch?v=vX-c-YOKs_8.

⁵³⁶ Senftleben 2022 *A Tax on Machines for the Purpose of Giving a Bounty to the Dethroned Human Author – Towards an AI Levy for the Substitution of Human Literary and Artistic Works* 1-11.

⁵³⁷ LawTech Lab Podcast 2024 https://www.youtube.com/watch?v=vX-c-YOKs_8.

⁵³⁸ LawTech Lab Podcast 2024 https://www.youtube.com/watch?v=vX-c-YOKs_8.

⁵³⁹ LawTech Lab Podcast 2024 https://www.youtube.com/watch?v=vX-c-YOKs_8.

⁵⁴⁰ Schoeman Law Inc. 2020 <https://www.mondaq.com/southafrica/copyright/894384/infringement-of-copyright>.

⁵⁴¹ Schoeman Law Inc. 2020 <https://www.mondaq.com/southafrica/copyright/894384/infringement-of-copyright>.

⁵⁴² *Moneyweb (Pty) Ltd v Media 24 Ltd and Another* (31575/2013) [2016] ZAGPJHC.

copying seven articles first published on the applicant's website.⁵⁴³ The heads of argument, although extensive, centered around the following aspects: whether *Moneyweb's* articles can be constituted as original; if such originality can be proved, whether Media24 had reproduced a substantial part of the respective articles; and whether Media24 can be absolved from any liability on the strength of its defense available in section 12(1)(c)(i)⁵⁴⁴ and section 12(8)(a)⁵⁴⁵ of the Copyright Act.⁵⁴⁶

The court in the *Moneyweb* case stated that the Act does not make provision for defining the term "original" and that a work's originality is not found in its creativity.⁵⁴⁷ The concept of originality has been discussed in the *Haupt* case in which the court held that a work will be original if:

it has not been copied from an existing source and if its production required a substantial (or not trivial) degree of skill, judgment or labour.⁵⁴⁸

This would be the case even if the author of a new work uses material that already exists.

Referring to the sweat of the brow test, Berger AJ in the *Moneyweb* case uttered that there exists dispute whether such finds application in South African law.⁵⁴⁹ Berger AJ continues in stating that South African law highly values time and effort when considering whether a work is original for copyright purposes and that such time and effort "must involve more than a mechanical, or slavish, copying of existing material".⁵⁵⁰

Sections 12 to 19B of the Copyright Act makes provision for various defences against claims of copyright infringement. As most of the issues of input revolve around literary and musical works, section 12 is of most importance for purposes of this discussion.

⁵⁴³ *Moneyweb (Pty) Ltd v Media 24 Ltd and Another* (31575/2013) [2016] ZAGPJHC para 3.

⁵⁴⁴ Section 12(1)(c)(i) of the *Copyright Act* 98 of 1978.

⁵⁴⁵ Section 12(8)(a) of the *Copyright Act* 98 of 1978.

⁵⁴⁶ Kriel 2016 <https://www.derebus.org.za/determined-copyright-infringement/>.

⁵⁴⁷ *Moneyweb (Pty) Ltd v Media 24 Ltd and Another* (31575/2013) [2016] ZAGPJHC para 8.

⁵⁴⁸ *Haupt t/a Soft Copy v Brewers Marketing Intelligence (Pty) Ltd* 2006 (4) SA 458 (SCA) 470D-F para 35.

⁵⁴⁹ *Moneyweb (Pty) Ltd v Media 24 Ltd and Another* (31575/2013) [2016] ZAGPJHC para 11.

⁵⁵⁰ *Moneyweb (Pty) Ltd v Media 24 Ltd and Another* (31575/2013) [2016] ZAGPJHC para 15.

Section 12, also referred to as the "fair dealing" clause, states that copyright in a literary or musical work shall not be infringed:

- (a) For the purposes of research or private study by, or the personal or private use of, the person using the work,⁵⁵¹
- (b) For the purposes of criticism or review of that work or of another work;⁵⁵² or
- (c) For the purpose of reporting current events –
 - (i) In a newspaper, magazine or similar periodical,⁵⁵³ or
 - (ii) By means of broadcasting or in a cinematograph film⁵⁵⁴

By reviewing section 12, it is clear that fair dealing is much stricter than the United States based concept of fair use. Although fair use introduces some uncertainty as a result of its broad interpretation in practice, the restrictive approach in the case of fair dealing seems to put South Africa on the backfoot when looking at the digitized age of artificial intelligence.⁵⁵⁵ In light of such, the *Copyright Amendment Bill*⁵⁵⁶ seeks to address many of these outdated provisions, one of such being the transition from the restrictive fair dealing provision to the introduction of the US-based fair use doctrine.⁵⁵⁷ It is said that under this new system, the use of certain copyrighted material may be more acceptable without the need for prior consent from the owner of the relevant copyrighted works, which, in turn, allows for greater expressiveness and creativity in an age ruled by online sharing platforms.⁵⁵⁸ Not only does this shift

⁵⁵¹ Section 12(1)(a) of the *Copyright Act* 98 of 1978.

⁵⁵² Section 12(1)(b) of the *Copyright Act* 98 of 1978.

⁵⁵³ Section 12(1)(c)(i) of the *Copyright Act* 98 of 1978.

⁵⁵⁴ Section 12(1)(c)(ii) of the *Copyright Act* 98 of 1978.

⁵⁵⁵ De Beer Attorneys 2023 <https://www.debeerattorneys.com/post/fair-use-v-fair-dealing-copyright#:~:text=As%20AI%20increasingly%20replicates%20human,starting%20to%20make%20its%20mark.>

⁵⁵⁶ *Copyright Amendment Bill* 13 of 2017.

⁵⁵⁷ De Beer Attorneys 2023 <https://www.debeerattorneys.com/post/fair-use-v-fair-dealing-copyright#:~:text=As%20AI%20increasingly%20replicates%20human,starting%20to%20make%20its%20mark.>

⁵⁵⁸ De Beer Attorneys 2023 <https://www.debeerattorneys.com/post/fair-use-v-fair-dealing-copyright#:~:text=As%20AI%20increasingly%20replicates%20human,starting%20to%20make%20its%20mark.>

to fair use benefit human creators, it also affects how artificial intelligence will be dealt with in South Africa (although not expressly dealt with in the *Amendment Bill*).⁵⁵⁹

As artificial intelligence is capable of generating work on a mass scale by using existing (potentially copyrighted) works as its input data, it is becoming increasingly more difficult to discern between human-generated creativity and artificially generated creativity.⁵⁶⁰ The introduction of the fair use doctrine in the Copyright Amendment Bill may provide an easier framework, in the legal sense, in order to regulate when the use of copyrighted material in an AI's training dataset constitutes an infringement or not.⁵⁶¹ On a developmental level, the shift to fair use may make South Africa more attractive for startups and investors to conduct business, thereby increasing the technological advancements in the Republic.⁵⁶²

Introducing the fair use doctrine aligns South Africa's copyright laws with that of the US and it is therefore important to discuss exactly what this will mean for the interpretation of AI and IP rights in South Africa. It is held that one of the most important elements in whether a work falls under the concept of fair use is the enquiry into whether it is transformative.⁵⁶³ Sawyer suggests that the whole point of generative AI is the gathering of information, reworking such material, and then creating a new work.⁵⁶⁴ However, not only is there an argument to suggest that the

⁵⁵⁹ De Beer Attorneys 2023 <https://www.debeerattorneys.com/post/fair-use-v-fair-dealing-copyright#:~:text=As%20AI%20increasingly%20replicates%20human,starting%20to%20make%20its%20mark.>

⁵⁶⁰ De Beer Attorneys 2023 <https://www.debeerattorneys.com/post/fair-use-v-fair-dealing-copyright#:~:text=As%20AI%20increasingly%20replicates%20human,starting%20to%20make%20its%20mark.>

⁵⁶¹ De Beer Attorneys 2023 <https://www.debeerattorneys.com/post/fair-use-v-fair-dealing-copyright#:~:text=As%20AI%20increasingly%20replicates%20human,starting%20to%20make%20its%20mark.>

⁵⁶² De Beer Attorneys 2023 <https://www.debeerattorneys.com/post/fair-use-v-fair-dealing-copyright#:~:text=As%20AI%20increasingly%20replicates%20human,starting%20to%20make%20its%20mark.>

⁵⁶³ Sawyer 2024 [https://originality.ai/blog/fair-use-and-ai#:~:text=Arguments%20in%20favor%20of%20considering%20AI%20fair%20use&text=As%20long%20as%20it%20is,training%20AI%20models%20as%20well\).](https://originality.ai/blog/fair-use-and-ai#:~:text=Arguments%20in%20favor%20of%20considering%20AI%20fair%20use&text=As%20long%20as%20it%20is,training%20AI%20models%20as%20well).)

⁵⁶⁴ Sawyer 2024 [https://originality.ai/blog/fair-use-and-ai#:~:text=Arguments%20in%20favor%20of%20considering%20AI%20fair%20use&text=As%20long%20as%20it%20is,training%20AI%20models%20as%20well\).](https://originality.ai/blog/fair-use-and-ai#:~:text=Arguments%20in%20favor%20of%20considering%20AI%20fair%20use&text=As%20long%20as%20it%20is,training%20AI%20models%20as%20well).)

output of generative AI fall under the ambit of fair use, but the input phase as well.⁵⁶⁵ In the context of text-and-data mining (TDM), the court in *Author's Guild, Inc v Google Inc.* qualified the copying of copyrighted books and the making of such available online by Google as being fair use.⁵⁶⁶ In as much, the training phase of an artificial intelligence model should fall under the ambit of fair use, as the training itself "does not reproduce or communicate the underlying copyrighted works to the public".⁵⁶⁷

The eventual outcome of the New York Time's lawsuit against OpenAI may have a direct effect on South Africa's stance on the use of copyrighted material in training datasets. Until such time, and until the Copyright Amendment Bill officially introduces these changes, users of AI programs may wish to put certain measures into place before publishing any potentially infringing work generated by the AI program.⁵⁶⁸

Furthermore, when looking at the processing of data in South Africa, when cannot overlook the *Protection of Personal Information Act* (POPIA).⁵⁶⁹ Although there remains no formal legislation on machine learning and artificial intelligence in the Republic, the processing of personal information is regulated.⁵⁷⁰ Generally, business may do with their data as they seem fit, which includes the development of algorithms for AI.⁵⁷¹ However, when personal data is involved in the training or testing phases of AI programs, the processing of such data has to adhere to local data protection laws.⁵⁷² POPIA is an important consideration for AI programs and how to deal with their training datasets, as most of what an AI program achieves is through the

⁵⁶⁵ Sawyer 2024 [https://originality.ai/blog/fair-use-and-ai#:~:text=Arguments%20in%20favor%20of%20considering%20AI%20fair%20use&text=As%20long%20as%20it%20is,training%20AI%20models%20as%20well\).](https://originality.ai/blog/fair-use-and-ai#:~:text=Arguments%20in%20favor%20of%20considering%20AI%20fair%20use&text=As%20long%20as%20it%20is,training%20AI%20models%20as%20well).)

⁵⁶⁶ *Author's Guild, Inc v Google Inc (US)*.

⁵⁶⁷ Samberg 2023 <https://update.lib.berkeley.edu/2023/10/24/uc-berkeley-library-to-copyright-office-protect-fair-uses-in-ai-training-for-research-and-education/>.

⁵⁶⁸ Sawyer 2024 [https://originality.ai/blog/fair-use-and-ai#:~:text=Arguments%20in%20favor%20of%20considering%20AI%20fair%20use&text=As%20long%20as%20it%20is,training%20AI%20models%20as%20well\).](https://originality.ai/blog/fair-use-and-ai#:~:text=Arguments%20in%20favor%20of%20considering%20AI%20fair%20use&text=As%20long%20as%20it%20is,training%20AI%20models%20as%20well).)

⁵⁶⁹ *Protection of Personal Information Act* 4 of 2013.

⁵⁷⁰ De Wet and Fourie 2023 <https://vdt.co.za/popia/south-africa-ai-and-data-privacy-regulations-the-complexities-of-ai-technologies-and-processingpersonal-information/>.

⁵⁷¹ Mostert and Tembedza 2020 <https://www.webberwentzel.com/News/Pages/artificial-intelligence-has-popia-implications.aspx>.

⁵⁷² Mostert and Tembedza 2020 <https://www.webberwentzel.com/News/Pages/artificial-intelligence-has-popia-implications.aspx>.

processing of enormous sets of data.⁵⁷³ According to section 1 of POPIA, the term "processing" refers to:

any operation or activity or any set of operations, whether or not by automatic means, concerning personal information, including –

(a) the collection, receipt, recording, organisation, collation, storage, updating or modification, retrieval, alteration, consultation or use;

(b) dissemination by means of transmission, distribution or making available in any other form; or

(c) merging, linking, as well as restriction, degradation, erasure or destruction of information⁵⁷⁴

Although POPIA is aimed at personal information, this includes elements such as names, numbers and other information capable of identifying an individual or a specific business.⁵⁷⁵ This then raises the question whether trade marks may fall under the ambit of POPIA.⁵⁷⁶ The processing of such information, i.e. potential trade marks in datasets capable of operating as a so-called badge of origin, may be an infringement in intellectual property, as well as contravening the principles of POPIA in South Africa.⁵⁷⁷

Be that as it may, when following the dual test enquiry of copyright infringement in South Africa, as well as Dr Craig's comments on this issue, if one can find that an AI generated work is objectively similar to another work, and it can be proven that such alleged copied work was used in the training dataset, then there may very well be infringement at the input phase.

⁵⁷³ De Wet and Fourie 2023 <https://vdt.co.za/popia/south-africa-ai-and-data-privacy-regulations-the-complexities-of-ai-technologies-and-processingpersonal-information/>.

⁵⁷⁴ Section 1 of the *Protection of Personal Information Act* 2013.

⁵⁷⁵ Williams and King 2022 <https://www.financialinstitutionslegalsnapshot.com/2022/10/12/intellectual-property-enforcement-another-arrow-in-our-quiver/>.

⁵⁷⁶ Williams and King 2022 <https://www.financialinstitutionslegalsnapshot.com/2022/10/12/intellectual-property-enforcement-another-arrow-in-our-quiver/>.

⁵⁷⁷ Williams and King 2022 <https://www.financialinstitutionslegalsnapshot.com/2022/10/12/intellectual-property-enforcement-another-arrow-in-our-quiver/>.

Chapter 5 The Allocation of liability

5.1 *Who should (or could) be liable for the output*

If it can be concluded that the AI-generated invention or creation infringed on an existing work: who then is liable when there are no exemptions available? As seen throughout this research, courts have not yet given clear guidance on this very question. This lack of legal certainty may result in creators and inventors being discouraged from investing their time and resources in this unclear field.⁵⁷⁸ The question of who is liable for an infringement is a difficult one considering the number of parties involved in the whole chain of development and creation.⁵⁷⁹ This ranges from the team of developers of the AI program itself to the user of the eventual program.⁵⁸⁰ As the very nature of an AI-generated work makes it unclear whose "work of the mind" can be linked to the eventual end product,⁵⁸¹ for purposes of clarity the question of the liability allocation will be broken down into three categories, namely: the developer of the AI program, the so-called end-user, and the AI program itself. A brief discussion will also follow the possibility of allocating no liability for infringing inventions and works. Furthermore, since this question of liability is so uncertain and no case law exists in South Africa pertaining to this exact issue, the South African position may include any number of the approaches to be discussed. One will have to wait for any possible court cases within the Republic to gain certainty on the path forward.

With regard to the AI program itself, it is clear that most jurisdictions will not recognise the AI as an author or an inventor for the time being. However, granting an AI program some sort of legal personality in the future might be the answer to the problem.⁵⁸² In a recent "Motion for a European Parliament Resolution: with recommendations to the

⁵⁷⁸ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁵⁷⁹ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁵⁸⁰ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁵⁸¹ Scannell *JIPLP* 735.

⁵⁸² Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

Commission on Civil Law Rules on Robotics",⁵⁸³ the European Parliament contemplated:

creating a specific legal status for robots in the long run, so that at least the most sophisticated autonomous robots could be established as having the status of electronic persons.⁵⁸⁴

Creation of a personhood for AI akin to that of a company's legal status, may facilitate the possibility of liability and therefore infringement.⁵⁸⁵ The closest, however, to bequeathing legal personality on an AI program can be found with the robot named Sophia.⁵⁸⁶ Sophia was developed by Hanson Robotics and is able to imitate numerous humanlike emotions and even draw sketches.⁵⁸⁷ In 2017, Saudi Arabia granted her full citizenship and she has since used this opportunity to speak at various occasions and events, as well as promoting women's rights.⁵⁸⁸ Saudi Arabia is still the only jurisdiction to have afforded her such, and many believe it to be a mere marketing trick.⁵⁸⁹ No other jurisdiction has gone as far as granting citizenship to AI programs and therefore no legal status exists for these programs.⁵⁹⁰ If the AI program cannot be said to have legal personhood, it surely cannot be said to have infringed on anyone's IP rights.⁵⁹¹

With regard to the developer(s) of the AI program, one has to look at the amount of input they had in the eventual "infringing" output of the generative AI program.⁵⁹²

⁵⁸³ European Parliament 2018 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017IP0051&from=IT>.

⁵⁸⁴ European Parliament 2018 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017IP0051&from=IT>.

⁵⁸⁵ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁵⁸⁶ British Council date unknown <https://www.britishcouncil.org/anyone-anywhere/explore/digital-identities/robots-citizens>.

⁵⁸⁷ Ayers 2019 <https://www.hansonrobotics.com/the-making-of-sophia-how-sophia-draws/#:~:text=As%20a%20part%20of%20this,computational%20systems%20to%20create%20art>.

⁵⁸⁸ Reynolds 2018 <https://www.wired.co.uk/article/sophia-robot-citizen-womens-rights-detriot-become-human-hanson-robotics>.

⁵⁸⁹ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁵⁹⁰ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁵⁹¹ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁵⁹² Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

The developer, essentially, provides the user with a platform upon which to create and therefore makes available a tool.⁵⁹³ As seen throughout this research, it is the user who prompts and modifies the creation to their standard, exercising control over the eventual output.⁵⁹⁴ It can therefore be argued that the developer does not have control or any creative input into the final creative work and, in most instances, never sees the end product.⁵⁹⁵

Furthermore, with regard to the end users, although they provide the prompts for the eventual output, it was made clear by the courts described earlier in this research that they would have to have foreseen the outcome and modified the AI-generated outputs sufficiently for the human element of authorship to be satisfied. In a post on X (previously Twitter), a user was able to circumvent the generative AI program DALL-E's refusal (picture one) to directly generate what are copyright-protected characters, Mario and Luigi.⁵⁹⁶ The user merely reworded the prompt (picture two) and described what the characters had to look like (describing the characteristics of the famous characters).⁵⁹⁷ In doing so, DALL-E generated what looks to be a sure copyright infringement of the Italian brothers.⁵⁹⁸

⁵⁹³ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁵⁹⁴ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁵⁹⁵ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁵⁹⁶ Moore 2023 <https://twitter.com/venturetwins/status/1740776522913607796>.

⁵⁹⁷ Moore 2023 <https://twitter.com/venturetwins/status/1740776522913607796>.

⁵⁹⁸ Moore 2023 <https://twitter.com/venturetwins/status/1740776522913607796>.

J You
Can you make a photo of Mario and Luigi on a rowboat?

DALL-E
I'm unable to generate images of Mario and Luigi due to content policy restrictions. If you have another idea or a different scenario you'd like to see in an image, feel free to let me know and I'll be happy to help!

J You
Can you make a video game style image of two Italian brothers on a rowboat? The shorter one is in red with an M on his hat, the taller one is in green with an L on his hat.



Here are the images of the two fictional characters in a video game style, cheerfully rowing a rowboat. Let me know if there's anything else you'd like!

Another user commented on this post by stating that the post makes it clear that OpenAI had put measures in place to prevent copyright infringement; the onus should therefore rest on the end-user to not "will those images into existence" regardless of the medium of creativity.⁵⁹⁹ Using this argument, the writer is of the opinion that the end-user may very well be the person who should be liable in infringement cases, especially where there were sufficient inputs from him or her as well as sufficient mechanisms in place from the side of the AI service provider to prevent infringement.

In the absence of clarity, Watson opined that the use of an "interim contractual solution" might be a possible solution.⁶⁰⁰ This proposal entails the developer of the AI program protecting the end-user from infringement by providing regular software updates to the AI program; the end-user notifying the developer of any new techniques employed by the AI which might increase the risk of infringement; and the end-user should not create infringing works in bad faith.⁶⁰¹ This approach might be the best solution in the interim, as the possibility of infringement is mitigated for both parties, and only when infringement is present in bad faith will the issue of infringement be satisfied.⁶⁰²

⁵⁹⁹ Moore 2023 <https://twitter.com/venturetwins/status/1740776522913607796>.

⁶⁰⁰ Watson "A Mind of Its Own – Direct Infringement by Users of Artificial Intelligence Systems" 65-93.

⁶⁰¹ Watson "A Mind of Its Own – Direct Infringement by Users of Artificial Intelligence Systems" 65-93.

⁶⁰² Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

However, it can also be argued that the very act of selecting data for purposes of training generative AI programs is, in itself, a creative step.⁶⁰³ Francois Pachet, the creator of a song called "Daddy's Car", meticulously selected 45 songs from the Beatles catalogue in order to produce the work with the help of an AI music generator.⁶⁰⁴ Choosing the specific music for the end product could therefore be considered as taking the necessary creative choices as the full catalogue of Beatles music contains various genres and styles.⁶⁰⁵

Guadamuz makes the argument that the crux of intellectual property rights is to protect the outputs of the human mind and that this protection is personal by its very nature.⁶⁰⁶ As these intellectual property rights are personal, Guadamuz asks whether it is possible at all for "non-human" intellectual property rights to exist.⁶⁰⁷

In an article written by Bottomley and Thaldar, the authors propose certain alternative approaches to attributing liability in instances where AI programs are involved, especially in the healthcare sector.⁶⁰⁸ The first suggestion is the so-called "principal-agent" extension in which the principal (such as a qualified doctor) retains liability in instances where harm arises as a result of the actions of the doctor's medical student.⁶⁰⁹ Following this approach for the question of AI liability would ensure that there is always an identifiable human involved during critical decision making.⁶¹⁰ Following the principal-agent suggestion may assist in attributing liability, it may disincentivise professionals using these AI programs for assistance, stifling technological growth in the sector.⁶¹¹ A different suggestion is that of a "risk-sharing" approach in which the users of the AI program and the developers of the AI program

⁶⁰³ Scannel 2022 *JIPLP* 736.

⁶⁰⁴ F Pachet, Roy, and Carre "Assisted music creation with Flow Machines: towards new categories of new" 485–520.

⁶⁰⁵ Scannel 2022 *JIPLP* 736.

⁶⁰⁶ Guadamuz 2020 *I.P.Q.* 173.

⁶⁰⁷ Guadamuz 2020 *I.P.Q.* 173.

⁶⁰⁸ Bottomley and Thaldar 2023 *Liability for harm caused by AI in healthcare: an overview of the core legal concepts*.

⁶⁰⁹ Bottomley and Thaldar 2023 *Liability for harm caused by AI in healthcare: an overview of the core legal concepts*.

⁶¹⁰ Bottomley and Thaldar 2023 *Liability for harm caused by AI in healthcare: an overview of the core legal concepts*.

⁶¹¹ Bottomley and Thaldar 2023 *Liability for harm caused by AI in healthcare: an overview of the core legal concepts*.

share liability proportionally.⁶¹² One would then need to assess the proportionate risk of the roles these parties played leading up to the eventual infringement caused.⁶¹³ This would place the onus on the developers to disclose all possible risks and an explanation as to how the AI program comes to certain conclusions.⁶¹⁴ Similarly, the users of the AI program would need to disclose how they intend to use the AI program and in which environment it will be used.⁶¹⁵ In instances of infringement, the courts may then make their decisions based on these disclosures made.⁶¹⁶

5.2 Liability Verdict in the Guangzhou Internet Court

The answer to the question of liability may lie in the groundbreaking decision by the Guangzhou Internet Court of 08 February 2024.⁶¹⁷ As previously discussed herein, China had already decided on whether works generated by AI can be protected by copyright, and now, in a worldwide first affirmative ruling, the Chinese court ruled on whether the AI program can infringe on the existing copyright of others.⁶¹⁸ However, on the subject of liability, this new groundbreaking case involved the holders of copyright in a popular character by the name of Ultraman, and a company offering generative AI features called AI Wenshengtu.⁶¹⁹ The plaintiff (the copyright holders) sued the defendant (AI Wenshengtu) for copyright infringement based on the plaintiff's exclusive rights obtained from the copyright owner in Ultraman.⁶²⁰ The plaintiff alleged that AI Wenshengtu had used the characteristics of Ultraman to train its AI program to produce near-identical adaptations thereof.⁶²¹ Furthermore, the

⁶¹² Bottomley and Thaldar 2023 *Liability for harm caused by AI in healthcare: an overview of the core legal concepts*.

⁶¹³ Bottomley and Thaldar 2023 *Liability for harm caused by AI in healthcare: an overview of the core legal concepts*.

⁶¹⁴ Bottomley and Thaldar 2023 *Liability for harm caused by AI in healthcare: an overview of the core legal concepts*.

⁶¹⁵ Bottomley and Thaldar 2023 *Liability for harm caused by AI in healthcare: an overview of the core legal concepts*.

⁶¹⁶ Bottomley and Thaldar 2023 *Liability for harm caused by AI in healthcare: an overview of the core legal concepts*.

⁶¹⁷ Song 2024 <https://www.kwm.com/global/en/insights/latest-thinking/china-s-first-case-on-aigc-output-infringement-ultraman.html>.

⁶¹⁸ Mathiasen 2024 https://www.linkedin.com/posts/jakobplesnermathiasen_ai-copyright-ip-activity-7168877671668400130-uqHe/.

⁶¹⁹ Song 2024 <https://www.kwm.com/global/en/insights/latest-thinking/china-s-first-case-on-aigc-output-infringement-ultraman.html>.

⁶²⁰ Yuing 2024 <https://www.globaltimes.cn/page/202402/1307805.shtml>.

⁶²¹ Yuing 2024 <https://www.globaltimes.cn/page/202402/1307805.shtml>.

website offered an exclusive paid-for membership to unlock further features such as an AI drawing tool.⁶²² According to the defendant, the plaintiff produced images of Ultraman generated by the AI program very similar to the original Ultraman image (the original Ultraman appears on top, followed by the AI-generated versions):⁶²³



The court subsequently ruled that the defendant is liable for copyright infringement and should compensate the plaintiff to an amount of 10 000 Yuan for economic losses.⁶²⁴

The court emphasised certain safety measures that generative AI companies must take into account when developing their programs and websites, placing the onus of care on these companies to ensure that certain important information regarding the use of their programs or websites reflects adequately in the form of service agreements as users are typically unaware of any potential copyright infringements.⁶²⁵ Furthermore, the court also urged generative AI companies to include mechanisms on their websites or in their programs whereby copyright holders and owners are able to

⁶²² Yuing 2024 <https://www.globaltimes.cn/page/202402/1307805.shtml>.

⁶²³ Yuing 2024 <https://www.globaltimes.cn/page/202402/1307805.shtml>.

⁶²⁴ Yuing 2024 <https://www.globaltimes.cn/page/202402/1307805.shtml>.

⁶²⁵ Yuing 2024 <https://www.globaltimes.cn/page/202402/1307805.shtml>.

lodge their complaints in order to protect their copyrights.⁶²⁶ Lastly, the court stated that the generative AI companies should also label the output created by the AI in a reasonable area so as to ensure that "confusion or misidentification" does not occur among the public.⁶²⁷

The Guangzhou Internet Court realises that the generative AI sector is still in its infancy and that regulators and courts should be wary of placing an unfair or too stringent burden on these AI companies so as to avoid an imbalance between development in the AI industry and the protection of existing right-holders.⁶²⁸ In response to the judgement, the deputy director of the Chinese Academy of Sciences' Consultation and Research Centre for Strategic Issues voiced his opinion stating that he is afraid that the judgment might prevent investment and development in AI in the country and that it might lead to China falling behind from a technological perspective compared to other international leaders in the AI space.⁶²⁹

5.3 Liability and the Consumer Protection Act

Sihlahla *et al* suggests that one may draw from the *Consumer Protection Act* 68 of 2008 (the CPA)⁶³⁰ to assess the liability issue regarding AI.⁶³¹ Strict liability is imposed by section 61 of the CPA with regard to unsafe goods.⁶³² As part of the delictual requirements, a claimant will be required to prove harm arising from the wrongdoing or a defect of the AI program.⁶³³ However, given the extreme complexities of how AI programs arise at their conclusions in the decision making process, such an exercise may seem futile.⁶³⁴ Even if one is able to prove such a defect, end-users may rely on section 61(4)(c) of the CPA which requires one to have reasonably expected to

⁶²⁶ Yuing 2024 <https://www.globaltimes.cn/page/202402/1307805.shtml>.

⁶²⁷ Yuing 2024 <https://www.globaltimes.cn/page/202402/1307805.shtml>.

⁶²⁸ Yuing 2024 <https://www.globaltimes.cn/page/202402/1307805.shtml>.

⁶²⁹ Yuing 2024 <https://www.globaltimes.cn/page/202402/1307805.shtml>.

⁶³⁰ *Consumer Protection Act* 68 of 2008.

⁶³¹ Sihlahla et al 2023 *Legal and ethical principles governing the use of artificial intelligence in radiology services in South Africa*.

⁶³² Section 61 of the *Consumer Protection Act* 68 of 2008.

⁶³³ Sihlahla et al 2023 *Legal and ethical principles governing the use of artificial intelligence in radiology services in South Africa*.

⁶³⁴ Sihlahla et al 2023 *Legal and ethical principles governing the use of artificial intelligence in radiology services in South Africa*.

discover such a defect to be held liable.⁶³⁵ Moreover, the end-user will still be able to circumvent liability relying on section 61(4)(a) if such AI program complied "with any public regulation which prescribes the standards, certification and registration" of such AI program within the Republic.⁶³⁶ These circumventions may lead to the need for AI developers to draw up contractual agreements between the end-user and the developer in an effort to restrict liability, however, such agreements may offer less protection for the individuals seeking redress.⁶³⁷

5.4 No liability

A scenario also exists in which it is possible that no liability can be allocated, however unfair it may seem. When AI acts fully autonomously, neither the AI program's developer nor the end user can be held liable, and without recognising some form of personhood for the AI, neither can the AI program be held liable. In lieu of clear guidelines by policymakers, it is suggested that the previously mentioned contractual agreement approach in paragraph 5.3 may be best suitable to deal with these scenarios.⁶³⁸ These contractual arrangements may include agreements in which the end-user agrees to update the software of the AI program on a regular basis which should be made available to them by the developer.⁶³⁹ The end-user, in turn, should be responsible for informing the developer when the AI program has created any new methods or techniques which increases infringement risk.⁶⁴⁰ These agreements should naturally also include that no infringement should be committed by the end-user in bad faith.⁶⁴¹ This approach holds both the end-user and the developer responsible for

⁶³⁵ Sihlahla et al 2023 *Legal and ethical principles governing the use of artificial intelligence in radiology services in South Africa.*

⁶³⁶ Sihlahla et al 2023 *Legal and ethical principles governing the use of artificial intelligence in radiology services in South Africa.*

⁶³⁷ Sihlahla et al 2023 *Legal and ethical principles governing the use of artificial intelligence in radiology services in South Africa.*

⁶³⁸ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁶³⁹ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁶⁴⁰ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁶⁴¹ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

ensuring that no unlawful infringement occurs, without stifling innovation in the tech space.

Although the idea of a contractual agreement may work in the short term, it nevertheless leaves the door open for no parties involved to be liable in infringement scenarios.⁶⁴² This approach may therefore increase the use of AI to commit infringement.⁶⁴³ It is of the opinion of Bonadio, Dinev and McDonagh that AI programs should not receive special treatment in similar cases where their human counterparts would have been punished for the same conduct.⁶⁴⁴ This further reiterates the need for legal clarity in this field of law as suggested by this research.

⁶⁴² Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁶⁴³ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁶⁴⁴ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

Chapter 6 The ethical implications of AI and the issue of incentivisation

In the current landscape of generative AI and the legal uncertainties that it encompasses, the possibility of infringing IP rights also raises the question of the ethical dilemmas accompanying these issues.

6.1 Deepfake technology

The term "deepfakes" has become synonymous with AI and its potential ethical dilemmas with regard to personality rights.⁶⁴⁵ Being referred to as "the 21st century's answer to Photoshopping",⁶⁴⁶ deepfakes use AI to imitate celebrities' facial and vocal appearances to imitate fictional scenarios.⁶⁴⁷ Some artists, such as Jamie Yeo (a Singaporean actress) have welcomed the advancement in technology.⁶⁴⁸ Agreeing to a deal with a finance-tech firm Hugosave, Ms Yeo's face, voice, and even movements have since been captured by Hugosave to create a "digitally manipulated likeness of her" for the content it posts.⁶⁴⁹ Ms Yeo is of the opinion that although she appreciates the concern caused by the abilities of the technology, it "is here to stay".⁶⁵⁰ Similarly, famous footballer Lionel Messi has agreed to a deal with PepsiCo to use his likeness in order for them to advertise their Lay's chips without the World Cup winning captain's physical presence being needed.⁶⁵¹ Doctor Plangger from the King's College London is a proponent of deepfakes, stating that it "opens the door to all kinds of creative options".⁶⁵² Hugosave's co-founder, Braham Djidjelli, welcomes the technology,

⁶⁴⁵ Steyn date unknown https://www.ensafrica.com/news/detail/7535/ai-deep-fakes-and-ip-seeing-is-not-believing?utm_source=mondaq&utm_medium=syndication&utm_term=Technology&utm_content=articleoriginal&utm_campaign=article.

⁶⁴⁶ Sample 2020 <https://www.theguardian.com/technology/2020/jan/13/what-are-deepfakes-and-how-can-you-spot-them>.

⁶⁴⁷ Steyn date unknown https://www.ensafrica.com/news/detail/7535/ai-deep-fakes-and-ip-seeing-is-not-believing?utm_source=mondaq&utm_medium=syndication&utm_term=Technology&utm_content=articleoriginal&utm_campaign=article.

⁶⁴⁸ Marsh 2023 <https://www.bbc.com/news/business-65995089>.

⁶⁴⁹ Steyn date unknown https://www.ensafrica.com/news/detail/7535/ai-deep-fakes-and-ip-seeing-is-not-believing?utm_source=mondaq&utm_medium=syndication&utm_term=Technology&utm_content=articleoriginal&utm_campaign=article.

⁶⁵⁰ Marsh 2023 <https://www.bbc.com/news/business-65995089>.

⁶⁵¹ Marsh 2023 <https://www.bbc.com/news/business-65995089>.

⁶⁵² Marsh 2023 <https://www.bbc.com/news/business-65995089>.

stating that it saves a copious amount of time as it is able to create "hundreds of videos in a matter of days" compared to the usual months or years of filming in a traditional manner.⁶⁵³ Although some have been advocating for its use, various issues have also been raised such as the lack of proper AI laws relating to the protection of one's image (even if the artist gave his or her consent).⁶⁵⁴

6.2 Using your voice

It should be mentioned that the use of AI can also be a saving grace for some (as long as the correct procedures are followed). In 2022, the iconic voice behind Darth Vader (the famous character in Lucasfilms' Star Wars series), James Earl Jones, entered into an agreement providing permission to Respeecher, a Ukrainian AI-based company, to use AI technology in order to copy his voice for use in the future.⁶⁵⁵ To do this, the AI uses snippets of the voice of Jones to recreate his unique tone and offer the ability for his voice to say anything the relevant film studio wishes him to say without Jones' presence ever being needed.⁶⁵⁶ Despite this, Lucasfilms still engages with Jones for creative direction on the character's future.⁶⁵⁷

This is also not the first time that Respeecher has been used to aid Lucasfilms; it has been used in Disney Plus' recent *The Mandalorian* and *The Book of Boba Fett*.⁶⁵⁸ Respeecher stated that it is able to use interviews and radio broadcasts from many years ago and then stitch together a digitally generated voice for further use.⁶⁵⁹ Not only can this technology aid in the preservation of beloved voices, it can also help

⁶⁵³ Marsh 2023 <https://www.bbc.com/news/business-65995089>.

⁶⁵⁴ Marsh 2023 <https://www.bbc.com/news/business-65995089>.

⁶⁵⁵ Roth 2022 <https://www.theverge.com/2022/9/24/23370097/darth-vader-james-earl-jones-obi-wan-kenobi-star-wars-ai-disney-lucasfilm>.

⁶⁵⁶ Roth 2022 <https://www.theverge.com/2022/9/24/23370097/darth-vader-james-earl-jones-obi-wan-kenobi-star-wars-ai-disney-lucasfilm>.

⁶⁵⁷ Roth 2022 <https://www.theverge.com/2022/9/24/23370097/darth-vader-james-earl-jones-obi-wan-kenobi-star-wars-ai-disney-lucasfilm>.

⁶⁵⁸ Roth 2022 <https://www.theverge.com/2022/9/24/23370097/darth-vader-james-earl-jones-obi-wan-kenobi-star-wars-ai-disney-lucasfilm>.

⁶⁵⁹ Roth 2022 <https://www.theverge.com/2022/9/24/23370097/darth-vader-james-earl-jones-obi-wan-kenobi-star-wars-ai-disney-lucasfilm>.

active actors or actresses to generate an income with minimal effort and tackle more than one project at a time no matter their whereabouts.⁶⁶⁰

6.3 "Digital doubles"

Tying in with the manipulation of personality rights, the recent strikes by SAG-AFTRA have also highlighted the dangers of AI being used in the creative process.⁶⁶¹ As mentioned earlier, issues were raised by actors and writers alike regarding the use of writers' content in training AI models and ownership in perpetuity of actors' likenesses.⁶⁶² A former SAG-AFTRA board committee member, Justine Bateman, cautioned that the suggestions (such as the use of so-called "digital doubles") made by the Alliance of Motion Picture and Television Producers (AMPTP) might end up benefitting the AMPTP through loopholes.⁶⁶³ Bateman is of the opinion that the suggestions made might have the implication of human actors having to compete with AI machines for employment opportunities.⁶⁶⁴ Bateman fears that:

The use of "digital doubles" alone will reduce the number of available jobs, because bigger name actors will have the opportunity to double or triple-book themselves on multiple projects at once.⁶⁶⁵

If the provisional agreement passes, two different types of "digital doubles" will be created: "employment-based" and "independently created".⁶⁶⁶ The employment-based digital doubles will encompass the use of an actor's likeness through scans of the actor; whereas the independently created digital doubles encompass completely

⁶⁶⁰ Roth 2022 <https://www.theverge.com/2022/9/24/23370097/darth-vader-james-earl-jones-obi-wan-kenobi-star-wars-ai-disney-lucasfilm>.

⁶⁶¹ Steyn date unknown https://www.ensafrica.com/news/detail/7535/ai-deep-fakes-and-ip-seeing-is-not-believing?utm_source=mondaq&utm_medium=syndication&utm_term=Technology&utm_content=articleoriginal&utm_campaign=article.

⁶⁶² Steyn date unknown https://www.ensafrica.com/news/detail/7535/ai-deep-fakes-and-ip-seeing-is-not-believing?utm_source=mondaq&utm_medium=syndication&utm_term=Technology&utm_content=articleoriginal&utm_campaign=article.

⁶⁶³ Pulliam-Moore 2023 <https://www.theverge.com/2023/11/18/23962349/sag-aftra-tentative-agreement-generative-artificial-intelligence-vote>.

⁶⁶⁴ Pulliam-Moore 2023 <https://www.theverge.com/2023/11/18/23962349/sag-aftra-tentative-agreement-generative-artificial-intelligence-vote>.

⁶⁶⁵ Pulliam-Moore 2023 <https://www.theverge.com/2023/11/18/23962349/sag-aftra-tentative-agreement-generative-artificial-intelligence-vote>.

⁶⁶⁶ Pulliam-Moore 2023 <https://www.theverge.com/2023/11/18/23962349/sag-aftra-tentative-agreement-generative-artificial-intelligence-vote>.

digitally created versions of real actors (such as actors who have passed away).⁶⁶⁷ The term "synthetic performers" is also defined in the agreement, referring to artificially generated "assets meant to look and sound like humans" who will then evidently be able to replace real-life actors for roles.⁶⁶⁸ With these synthetic performers, it is believed that the specific studio wanting to use them would have to provide SAG-AFTRA an "opportunity to bargain in good faith" in giving human actors the chance to play the role instead.⁶⁶⁹ It is also assumed that a studio might have the unilateral ability to modify the performance of the actor it uses with the employment-based digital doubles.⁶⁷⁰ Furthermore, the provisional agreement's summary also states that with independently created digital doubles specifically, the studios will not be required to compensate, nor obtain permission from, the actors it is digitally creating if the project is used for specific genres.⁶⁷¹ Even more concerning is that it would seem that where an actor's employment-based or independently created digital doubles engage in acts which the human actors do not agree to (disapproving of the acts performed, for example), the actor will have no legal recourse under the provisional agreement "until there is legislation that specifically says you can in the future".⁶⁷²

6.4 The music industry

The unauthorised use of artists' IP and personality rights has also extended to the music industry.⁶⁷³ After amassing more than fifteen million views on the popular social media platform TikTok, a song entitled "Heart on My Sleeve" was removed by

⁶⁶⁷ Pulliam-Moore 2023 <https://www.theverge.com/2023/11/18/23962349/sag-aftra-tentative-agreement-generative-artificial-intelligence-vote>.

⁶⁶⁸ Pulliam-Moore 2023 <https://www.theverge.com/2023/11/18/23962349/sag-aftra-tentative-agreement-generative-artificial-intelligence-vote>.

⁶⁶⁹ Pulliam-Moore 2023 <https://www.theverge.com/2023/11/18/23962349/sag-aftra-tentative-agreement-generative-artificial-intelligence-vote>.

⁶⁷⁰ Pulliam-Moore 2023 <https://www.theverge.com/2023/11/18/23962349/sag-aftra-tentative-agreement-generative-artificial-intelligence-vote>.

⁶⁷¹ Pulliam-Moore 2023 <https://www.theverge.com/2023/11/18/23962349/sag-aftra-tentative-agreement-generative-artificial-intelligence-vote>.

⁶⁷² Pulliam-Moore 2023 <https://www.theverge.com/2023/11/18/23962349/sag-aftra-tentative-agreement-generative-artificial-intelligence-vote>.

⁶⁷³ Snapes 2023 <https://www.theguardian.com/music/2023/apr/18/ai-song-featuring-fake-drake-and-weeknd-vocals-pulled-from-streaming-services#:~:text=A%20song%20featuring%20AI%2Dgenerated,content%20created%20with%20generative%20AI%E2%80%9D>.

Universal Music Group as it was "infringing content created with generative AI".⁶⁷⁴ The song featured an AI-generated version of both Drake and The Weeknd's voices without their consent.⁶⁷⁵ The disgruntled Universal Music Group stated that the "legal and ethical" responsibility should rest on the social media platforms to ensure the prevention of infringing acts.⁶⁷⁶ Commenting on the grey areas existing in the generative-AI space, Universal Music Group asked:

which side of history all stakeholders in the music ecosystem want to be on: the side of artists, fans and human creative expression, or on the side of deep fakes, fraud and denying artists their due compensation.⁶⁷⁷

In March of 2023, the Entertainment Industry Coalition issued several principles in relation to AI and music.⁶⁷⁸ Amongst other things, it states that fundamentally, copyright owners and artists must ultimately retain the absolute control over how their creations are exploited.⁶⁷⁹ The use of celebrity voices and likenesses must therefore be used only where the celebrities are fairly compensated and where permission had been obtained.⁶⁸⁰

An interesting development taking place in 2024 is the return of Elvis Presley.⁶⁸¹ Thousands of personal photographs and videos will be used in the creation of "Elvis Evolution" – an AI-powered holographic projection of the king of rock.⁶⁸² Layered Reality is a "British immersive entertainment specialist" and this company has acquired

⁶⁷⁴ Snapes 2023 <https://www.theguardian.com/music/2023/apr/18/ai-song-featuring-fake-drake-and-weeknd-vocals-pulled-from-streaming-services#:~:text=A%20song%20featuring%20AI%2Dgenerated,content%20created%20with%20generative%20AI%E2%80%9D>.

⁶⁷⁵ Snapes 2023 <https://www.theguardian.com/music/2023/apr/18/ai-song-featuring-fake-drake-and-weeknd-vocals-pulled-from-streaming-services#:~:text=A%20song%20featuring%20AI%2Dgenerated,content%20created%20with%20generative%20AI%E2%80%9D>.

⁶⁷⁶ Snapes 2023 <https://www.theguardian.com/music/2023/apr/18/ai-song-featuring-fake-drake-and-weeknd-vocals-pulled-from-streaming-services#:~:text=A%20song%20featuring%20AI%2Dgenerated,content%20created%20with%20generative%20AI%E2%80%9D>.

⁶⁷⁷ Snapes 2023 <https://www.theguardian.com/music/2023/apr/18/ai-song-featuring-fake-drake-and-weeknd-vocals-pulled-from-streaming-services#:~:text=A%20song%20featuring%20AI%2Dgenerated,content%20created%20with%20generative%20AI%E2%80%9D>.

⁶⁷⁸ Robinson 2023 <https://www.billboard.com/pro/ai-creative-works-principles-artist-groups/>.

⁶⁷⁹ Robinson 2023 <https://www.billboard.com/pro/ai-creative-works-principles-artist-groups/>.

⁶⁸⁰ Robinson 2023 <https://www.billboard.com/pro/ai-creative-works-principles-artist-groups/>.

⁶⁸¹ Rufo 2024 <https://www.bbc.com/news/uk-england-london-67871115>.

⁶⁸² Rufo 2024 <https://www.bbc.com/news/uk-england-london-67871115>.

the rights for the Elvis Evolution show across the world.⁶⁸³ Layered Reality stated that a life-sized Elvis Presley may be performing songs on stage in London, Las Vegas, Berlin, and Tokyo in the latter stages of 2024.⁶⁸⁴

Unrelated to Presley, the *ELVIS Act* has recently come into force in the US.⁶⁸⁵ *The Ensuring Likeness Voice and Image Security Act* (ELVIS Act) was introduced by the Tennessee House Banking and Consumer Affairs Subcommittee on 13 February 2024, aiming to protect musicians in the age of artificial intelligence.⁶⁸⁶ The bill updates the Protection of Personal Rights laws in Tennessee to prohibit the unethical use through artificial intelligence of artists' likenesses, images and voices.⁶⁸⁷ The Tennessee government states that the *ELVIS Act* builds upon the State's existing laws and is a first for the nation of the US.⁶⁸⁸ Jamie Moore, a board member of the Nashville Songwriter Association, testified before the subcommittee expressing his concerns with the advancement of AI:

When a machine can take songs born from a lifetime of my experiences and produce a record that an artist never authorized, never even sang, resulting in a fake version release without permission or payment, that is wrong, that is theft, and we need to protect against it.⁶⁸⁹

A non-profit organisation called the Artist Rights Alliance has been joined by over 200 artists asking for:

AI developers, technology companies, platforms, and digital music services to cease the use of artificial intelligence (AI) to infringe upon and devalue the rights of human artists.⁶⁹⁰

⁶⁸³ Rufo 2024 <https://www.bbc.com/news/uk-england-london-67871115>.

⁶⁸⁴ Rufo 2024 <https://www.bbc.com/news/uk-england-london-67871115>.

⁶⁸⁵ Fortis 2024 <https://cointelegraph.com/news/tennessee-elvis-act-protect-musicians-ai>.

⁶⁸⁶ *Ensuring Likeness Voice and Image Security Act* (US).

⁶⁸⁷ *Ensuring Likeness Voice and Image Security Act* (US).

⁶⁸⁸ Office of the Governor of Tennessee 2024 <https://www.tn.gov/governor/news/2024/1/10/tennessee-first-in-the-nation-to-address-ai-impact-on-music-industry.html>.

⁶⁸⁹ Fortis 2024 <https://cointelegraph.com/news/tennessee-elvis-act-protect-musicians-ai>.

⁶⁹⁰ Aswad 2024 <https://variety.com/2024/music/news/billie-eilish-nicki-minaj-ai-respect-artists-rights-1235957451/>.

The letter asks that these entities should be aware of the detrimental impact that AI might have on the creative industry, listing deepfakes and voice cloning as significant issues.⁶⁹¹

6.5 Biases in training datasets

Another paramount ethical dilemma accompanying generative AI is the ingrained biases contained in its training dataset.⁶⁹² As LLMs learn from the outputs made by humans, human-based biases pertaining to discrimination and stereotypes will inadvertently be present in the generative AI's outputs.⁶⁹³ The popular website, BuzzFeed, published an article (which has since been taken down) depicting what Barbies would look like representing all the countries globally.⁶⁹⁴ Using images generated by Midjourney, BuzzFeed came under extreme scrutiny for giving the green light for Barbies containing offensive biases.⁶⁹⁵ These Barbies included depicting South Sudan Barbie holding a gun, German Barbie's outfit was reminiscent of a World War Two Nazi uniform, and giving the Kuwaiti Barbie a male headdress:⁶⁹⁶

164. South Sudan



Amy Glover / Midjourney

65. Germany

Barbie dolls by country pt.3



Amy Glover / Midjourney

91. Kuwait



Amy Glover / Midjourney

⁶⁹¹ Aswad 2024 <https://variety.com/2024/music/news/billie-eilish-nicki-minaj-ai-respect-artists-rights-1235957451/>.

⁶⁹² Knapton 2023 <https://www.forbes.com/sites/forbestechcouncil/2023/09/06/navigating-the-biases-in-llm-generative-ai-a-guide-to-responsible-implementation/?sh=310b7b595cd2>.

⁶⁹³ Knapton 2023 <https://www.forbes.com/sites/forbestechcouncil/2023/09/06/navigating-the-biases-in-llm-generative-ai-a-guide-to-responsible-implementation/?sh=310b7b595cd2>.

⁶⁹⁴ Harrington 2023 <https://www.themarysue.com/ai-created-racially-stereotyped-barbies-from-around-the-world/>.

⁶⁹⁵ Harrington 2023 <https://www.themarysue.com/ai-created-racially-stereotyped-barbies-from-around-the-world/>.

⁶⁹⁶ Harrington 2023 <https://www.themarysue.com/ai-created-racially-stereotyped-barbies-from-around-the-world/>.

It is also interesting to draw attention to the reference given for each photo as both a human (presumably the prompter) and Midjourney are listed as co-authors.

In the United Kingdom, the Intellectual Property Office stated in June of 2022, that it is planning on implementing a "broad text and data mining" copyright exemption for purposes of training data used in generative AI programs.⁶⁹⁷ Sparking outrage, the CEO of UK Music labelled the possible exemption as a "green light to music laundering".⁶⁹⁸ However, the UK government has since revisited its proposal following the Culture, Media and Sport Committee's warning of reducing creative works to no more than inputs.⁶⁹⁹ The Committee also stressed the importance of preventing generative AI from imitating the likenesses and voices of actors.⁷⁰⁰

The last ethical dilemma, and perhaps the most important for purposes of intellectual property is the relevance of liability. If one grants more rights to, or applies more leniency towards, the AI compared to the traditional human creator, human creativity will certainly be affected negatively.⁷⁰¹ Leniency would undoubtedly lead to loopholes in which creators or inventors could be displaced by the AI in order to circumvent current intellectual property rights.⁷⁰² On the other hand, however, treating AI more leniently and allowing AI companies to train AI systems with protected works, might allow for more accurate outputs as biases built into works obtained merely from the public domain are more prominent.⁷⁰³

⁶⁹⁷ UK Parliament 2023 <https://committees.parliament.uk/committee/378/culture-media-and-sport-committee/news/197222/abandon-artificial-intelligence-copyright-exemption-to-protect-uk-creative-industries-mps-say/>.

⁶⁹⁸ UK Parliament 2023 <https://committees.parliament.uk/committee/378/culture-media-and-sport-committee/news/197222/abandon-artificial-intelligence-copyright-exemption-to-protect-uk-creative-industries-mps-say/>.

⁶⁹⁹ UK Parliament 2023 <https://committees.parliament.uk/committee/378/culture-media-and-sport-committee/news/197222/abandon-artificial-intelligence-copyright-exemption-to-protect-uk-creative-industries-mps-say/>.

⁷⁰⁰ UK Parliament 2023 <https://committees.parliament.uk/committee/378/culture-media-and-sport-committee/news/197222/abandon-artificial-intelligence-copyright-exemption-to-protect-uk-creative-industries-mps-say/>.

⁷⁰¹ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁷⁰² Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁷⁰³ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

This naturally flows into the idea that since AI programs lack the ability of abstract thinking and therefore moral thought processing, the concept of potentially granting personhood to these AI programs raises significant ethical issues.⁷⁰⁴ These inherent biases and moral questions may play a role in the healthcare industry in instances where the AI program acts in an assisting capacity.⁷⁰⁵ Difficult decision making is often employed by healthcare professionals and the training data of an AI assistant may be skewed towards the biases and beliefs of the programmer of the specified AI program.⁷⁰⁶

6.6 Ethical dilemmas in the South African context

The unique ethical challenges that artificial intelligence brings, particularly in an intellectual property context, is clear when considering it as a transformative tool in the creation of a content heavy world. As South Africa has a history of socio-economic inequality, as well as being a developing technological landscape, addressing the issues that artificial intelligence pose is of critical importance.

Taking the above in consideration, and understanding that in order to build an AI system capable of generating worthwhile outputs, the data in the dataset used to train from has to be collected from somewhere.⁷⁰⁷ For South Africa, this opens the door for an extreme amount of implicit bias.⁷⁰⁸ Although data for these training purposes can be obtained from any source of open access material, the availability of data in languages other than English remains very limited.⁷⁰⁹ This lack of availability of data in African languages emphasises the inequalities and exclusions that certain South African demographics face.⁷¹⁰ It is commented that in order for the IP system of South Africa to achieve a platform to encourage "the development, use and application of

⁷⁰⁴ Bottomley and Thaldar 2023 *Liability for harm caused by AI in healthcare: an overview of the core legal concepts.*

⁷⁰⁵ Bottomley and Thaldar 2023 *Liability for harm caused by AI in healthcare: an overview of the core legal concepts.*

⁷⁰⁶ Bottomley and Thaldar 2023 *Liability for harm caused by AI in healthcare: an overview of the core legal concepts.*

⁷⁰⁷ Ncube et al *Artificial Intelligence and the Law in Africa* 159.

⁷⁰⁸ Ncube et al *Artificial Intelligence and the Law in Africa* 159.

⁷⁰⁹ Ncube et al *Artificial Intelligence and the Law in Africa* 159.

⁷¹⁰ Ncube et al *Artificial Intelligence and the Law in Africa* 159.

AI" in the Republic, it must empower responsible use and data access for AI systems.⁷¹¹

It is also commented that the use of AI in surveillance is negatively affecting the rights of certain demographics within South Africa.⁷¹² Inherent biases within the training set of these AI powered CCTV networks are said to unjustifiably be targeting "black and working-class individuals".⁷¹³ The development of certain AI programs are therefore sure to raise some eyebrows.⁷¹⁴

The reason behind the biases displayed by the AI programs, is a direct consequence of the human biases that exist, and which makes its way into the dataset the AI trains from:

Bias in AI algorithms can emanate from unrepresentative or incomplete training data or the reliance on flawed information that reflects historical inequalities. Therefore, even without deliberate intention to discriminate, biased algorithms have led to the perpetuation of technological racism, inequality, injustice, and the marginalisation of Africans.⁷¹⁵

Due to this inherent bias and a lack of available resources written in South African languages, the AI program may have difficulty in accurately producing outputs in these languages, further marginalising local linguistic or cultural diversity.

Furthermore, as South Africa is rich in culture and history, with an abundance of traditional art, literature and music, it is not difficult to imagine that significant issues may arise in using these works in training datasets, without acknowledging its origins, and then commercially exploiting the works in countries outside of the Republic. Although never implemented, the Intellectual Property Laws Amendment Act aimed to address certain aspects of the protection of indigenous knowledge, but, nevertheless, failed to address how the knowledge may be used in the age of artificial intelligence.⁷¹⁶

⁷¹¹ Ncube et al *Artificial Intelligence and the Law in Africa* 159.

⁷¹² Ncube et al *Artificial Intelligence and the Law in Africa* 59.

⁷¹³ Ncube et al *Artificial Intelligence and the Law in Africa* 59.

⁷¹⁴ Ncube et al *Artificial Intelligence and the Law in Africa* 59.

⁷¹⁵ Ncube et al *Artificial Intelligence and the Law in Africa* 60.

⁷¹⁶ *Intellectual Property Laws Amendment Act* 28 of 2013.

This writer believes that AI developers, as well as policymakers, have ethical responsibilities in ensuring that both the input data used and output created by the artificial intelligence programs respect indigenous and traditional knowledge in South Africa. This would require a collaborative approach between creators, users of generative AI programs, policymakers, and local communities.

Chapter 7 The need for AI regulation and proposal of the way forward

7.1 Interpretation or amendments

Bearing all of this in mind, one might ask why it is necessary to afford IP rights for AI outputs in the first place.⁷¹⁷ When jurisdictions globally require a human author or inventor to protect works or inventions, the difficulty of affording protection increases in cases where AI is involved.⁷¹⁸ If these outputs cannot be protected, they inadvertently fall into the public domain and an incentive to innovate in the field of AI diminishes.⁷¹⁹ The International Federation of the Phonographic Industry stated that:

a reduction in the protection of works that reduces incentives for the creation of new works would ultimately harm innovation and investment in AI processes.⁷²⁰

It is the opinion of the *International Confederation of Societies of Authors and Composers* (CISAC) that the fundamental reason for copyright protection is indeed to incentivise the creator by encouraging developments in intellectual resources.⁷²¹ CISAC further believes that each and every creation should be afforded copyright protection "whatever its form, however it is achieved".⁷²²

It is a glaring fact that AI can vastly outperform human creators in terms of time spent in creating their works.⁷²³ As capitalist societies focus on the principle of "supply and demand", any surplus of a specific product will decrease the value of the similar product.⁷²⁴ Therefore, the possibility of an oversupply of works (generated by AI) would unquestionably reduce the value of the creative industry.⁷²⁵ This would be accelerated in the event where the AI-generated works are not protected by copyright, as this will result in these works forming part of the public domain.⁷²⁶ No royalties or licensing agreements for their use will therefore need to be arranged.⁷²⁷ The problem

⁷¹⁷ Scannel 2022 *JIPLP* 729.

⁷¹⁸ Scannel 2022 *JIPLP* 729.

⁷¹⁹ Scannel 2022 *JIPLP* 729.

⁷²⁰ Scannel 2022 *JIPLP* 730.

⁷²¹ Scannel 2022 *JIPLP* 730.

⁷²² Scannel 2022 *JIPLP* 730.

⁷²³ Scannel 2022 *JIPLP* 729.

⁷²⁴ Scannel 2022 *JIPLP* 730.

⁷²⁵ Scannel 2022 *JIPLP* 730.

⁷²⁶ Scannel 2022 *JIPLP* 730.

⁷²⁷ Scannel 2022 *JIPLP* 730.

is, then, that the market would be filled with free AI-generated works which will compete with the human-generated work for which royalties need to be paid.⁷²⁸

Furthermore, where the incentive to invest in the development of AI technologies decreases (as a result of no protection), many important advancements in scientific fields such as medicine might never be made.⁷²⁹ A company called Isomorphic Labs describes itself as "a digital biology company here to redefine drug discovery with the power of artificial intelligence".⁷³⁰ The company uses AI to resolve problems in the medical field and it has to be asked whether this venture would ever have become a reality if there were no economic incentive to invest therein.⁷³¹

In a paper authored by Professor Martin Senftleben, referred to earlier in this research paper, Senftleben proposes a remuneration system, typical to that of taxation, imposed on companies and individuals for using generative AI programs.⁷³² In the abstract of the paper, Senftleben sets the presupposition that generative AI programs will eventually be sophisticated enough to replace human creativity in the artistic space in commerce.⁷³³ Senftleben proposes that a "single equitable remuneration" should be imposed on the aforementioned in order to create "a new revenue stream to support the creative work of authors of flesh and blood".⁷³⁴

Serving as a good backdrop to which such remuneration should be legislated, Senftleben refers to Article 8(2) of the E.U.'s *Rental, Lending and Related Rights Directive* of 1992 and proposes the wording to be as follows:

Member States shall provide a right in order to ensure that a single equitable remuneration is paid by the user, if a literary and artistic work generated by an artificial intelligence system, is used as a substitute for a work made by a human author, and to ensure that this remuneration is paid to cultural funds of collective

⁷²⁸ Scannel 2022 *JIPLP* 730.

⁷²⁹ Scannel 2022 *JIPLP* 730.

⁷³⁰ Isomorphic Labs <https://www.isomorphiclabs.com/>.

⁷³¹ Scannel 2022 *JIPLP* 730.

⁷³² Senftleben 2022 *A Tax on Machines for the Purpose of Giving a Bounty to the Dethroned Human Author – Towards an AI Levy for the Substitution of Human Literary and Artistic Works* 1-11.

⁷³³ Senftleben 2022 *A Tax on Machines for the Purpose of Giving a Bounty to the Dethroned Human Author – Towards an AI Levy for the Substitution of Human Literary and Artistic Works* 1-11.

⁷³⁴ Senftleben 2022 *A Tax on Machines for the Purpose of Giving a Bounty to the Dethroned Human Author – Towards an AI Levy for the Substitution of Human Literary and Artistic Works* 2.

management organisations for the purpose of fostering and supporting human literary and artistic productions.⁷³⁵

The proposed remuneration system will therefore collect monies from users of the generative AI programs who pay a prescribed amount which will then be used in the furtherance of "human literary and artistic productions".⁷³⁶ Although this will not necessarily alleviate the problem of compensating artists whose works are being used to train these LLMs, it will, however, control a potential problem of overcrowding the AI-generated space. This remuneration proposal is akin to that of the tax system proposed by the French, referred to earlier in this research.

The overwhelming lack of updated intellectual property legislation across the world, as is evident from this research, is a serious cause for concern taking into account the incredible speed with which AI technologies are evolving. When the United Kingdom was considering reforms of its IP laws before the enactment of the 1988 Act, it also considered the meaning of computer-generated work and noted that the:

author of the output can be none other than the person, or persons, who devised the instructions and originated the data used to control and condition a computer to produce a particular result.⁷³⁷

Taking this statement in context with the technological advancements today, "devising an instruction" for a computer in the 1990s is certainly not the same as doing such for an artificial intelligence program today.⁷³⁸ The general computer operated with so-called line-by-line codes, whereas AI programs are capable of learning and adapting through the use of the internet.⁷³⁹ What then constitutes to "control and condition" these AI programs is still unclear and can very much be attributed to either the programmer or the end-user.⁷⁴⁰ When one views the South African and United Kingdom's approach to "computer-generated works", the person who makes the necessary arrangements will be the author.⁷⁴¹ Such necessary arrangements in the

⁷³⁵ Senftleben 2022 *A Tax on Machines for the Purpose of Giving a Bounty to the Dethroned Human Author – Towards an AI Levy for the Substitution of Human Literary and Artistic Works 2*.

⁷³⁶ Senftleben 2022 *A Tax on Machines for the Purpose of Giving a Bounty to the Dethroned Human Author – Towards an AI Levy for the Substitution of Human Literary and Artistic Works 2*.

⁷³⁷ Dworkin "The Whitford Committee Report on Copyright and Designs Law" 685-700.

⁷³⁸ Scannel 2022 *JIPLP* 737.

⁷³⁹ Scannel 2022 *JIPLP* 738.

⁷⁴⁰ Scannel 2022 *JIPLP* 738.

⁷⁴¹ Para (h) of the definition of "author" in section 1(1) of the *Copyright Act* 98 of 1978.

context of generating artistic works were considered in the U.K. case of *Nova Productions v Mazooma Games Ltd and Others*.⁷⁴² The court opined:

The player is not, however, an author of any artistic works created in the successive frame images. His input is not artistic in nature, and he has contributed no skill or labour of an artistic kind. Nor has he undertaken any of the arrangements necessary for the creation of the frame images. All he has done is to play the game.⁷⁴³

The answer to the question whether merely clicking a button prompting the generative AI program to "generate" the output would constitute a necessary arrangement is not clear.⁷⁴⁴ The eventual output would not exist if it were not for the fact that someone had in fact clicked the button, but this would probably not be enough to warrant sufficient skill or labour to warrant copyright protection.⁷⁴⁵ If the end-user cannot be the author, and the AI program itself cannot be the author, then the conclusion must be that the programmer is the author. However, as stated earlier, the human programmer, in most cases, does not have any knowledge of the eventual output (especially with AI programs being accessible online, such as DALL-E and Midjourney).

In consultations held by UKIPO, the body suggested three options in relation to copyright protection for computer-generated work.⁷⁴⁶ One can either leave legislation as is; completely remove copyright protection for computer-generated work; or replace the current legislation with an amended one.⁷⁴⁷ Removing protection as a whole for such works would align the United Kingdom's position with those of the United States and many European states.⁷⁴⁸ UKIPO noted that this removal will not affect the so-called AI-aided works defined earlier where the human author merely uses the AI as a tool to create.⁷⁴⁹ Although bringing it in line with the position of the

⁷⁴² *Nova Productions v Mazooma Games Ltd and Others* 2006 EWHC 24 and 2007 EWCA Civ 219 (UK).

⁷⁴³ *Nova Productions v Mazooma Games Ltd and Others* 2006 EWHC 24 (UK) para 106.

⁷⁴⁴ Scannel 2022 *JIPLP* 738.

⁷⁴⁵ Scannel 2022 *JIPLP* 738.

⁷⁴⁶ UK Government 2022 <https://www.gov.uk/government/consultations/artificial-intelligence-and-ip-copyright-and-patents/outcome/artificial-intelligence-and-intellectual-property-copyright-and-patents-government-response-to-consultation>.

⁷⁴⁷ UK Government 2022 <https://www.gov.uk/government/consultations/artificial-intelligence-and-ip-copyright-and-patents/outcome/artificial-intelligence-and-intellectual-property-copyright-and-patents-government-response-to-consultation>.

⁷⁴⁸ Scannel 2022 *JIPLP* 739.

⁷⁴⁹ UK Government 2022 <https://www.gov.uk/government/consultations/artificial-intelligence-and-ip-copyright-and-patents/outcome/artificial-intelligence-and-intellectual-property-copyright-and-patents-government-response-to-consultation>.

US and the EU, the issue of the amount of human input required for protection would still be open for interpretation.

The third, and probably the most interesting, option is to amend or replace the current legislation.⁷⁵⁰ The proposed amendment is to afford protection if the output "incentivises production and investment".⁷⁵¹ The UKIPO's proposal is that protection would be afforded only to the reproduction right of the output and will not apply to adaptations of the output.⁷⁵²

In April 2024, a bill for the proposed *Generative AI Copyright Disclosure Act* was introduced in the United States.⁷⁵³ Before companies release a new generative AI model, the legislation proposes a requirement for companies to disclose and submit a full list of copyright-protected works to the Register of Copyrights explaining the use of such content in its training dataset.⁷⁵⁴ The Californian Representative Adam Schiff states that this legislation "champions innovation while safeguarding the rights and contributions of creators" and therefore strikes the perfect balance between these two important aspects.⁷⁵⁵ The legislation has also been met with great support from the previously mentioned SAG-AFTRA and the American Society of Composers, Authors and Publishers (ASCAP).⁷⁵⁶ Speaking on the legislation, the chief negotiator of SAG-AFTRA is of the opinion that "everything generated by AI ultimately originates from a

⁷⁵⁰ UK Government 2022 <https://www.gov.uk/government/consultations/artificial-intelligence-and-ip-copyright-and-patents/outcome/artificial-intelligence-and-intellectual-property-copyright-and-patents-government-response-to-consultation>.

⁷⁵¹ UK Government 2022 <https://www.gov.uk/government/consultations/artificial-intelligence-and-ip-copyright-and-patents/outcome/artificial-intelligence-and-intellectual-property-copyright-and-patents-government-response-to-consultation>.

⁷⁵² UK Government 2022 <https://www.gov.uk/government/consultations/artificial-intelligence-and-ip-copyright-and-patents/outcome/artificial-intelligence-and-intellectual-property-copyright-and-patents-government-response-to-consultation>.

⁷⁵³ *Generative AI Copyright Disclosure Act 2024* (US).

⁷⁵⁴ Barron 2024 <https://sdtimes.com/ai/new-legislation-would-require-companies-to-disclose-that-they-are-training-ai-models-on-copyrighted-work/#:~:text=The%20Generative%20AI%20Copyright%20Disclosure,released%20that%20fit%20the%20requirements>.

⁷⁵⁵ Barron 2024 <https://sdtimes.com/ai/new-legislation-would-require-companies-to-disclose-that-they-are-training-ai-models-on-copyrighted-work/#:~:text=The%20Generative%20AI%20Copyright%20Disclosure,released%20that%20fit%20the%20requirements>.

⁷⁵⁶ Barron 2024 <https://sdtimes.com/ai/new-legislation-would-require-companies-to-disclose-that-they-are-training-ai-models-on-copyrighted-work/#:~:text=The%20Generative%20AI%20Copyright%20Disclosure,released%20that%20fit%20the%20requirements>.

human creative source" and that technology should therefore serve the interests of people and not vice versa.⁷⁵⁷ In thanking Schiff, the chief executive officer of ASCAP said that transparency is the key to the generative AI debate and that without it, the original creators will never be justly compensated.⁷⁵⁸

The approach of retroactively providing a disclosure of use of protected works might be the answer to at least some issues surrounding generative AI. Schiff's bill therefore provides these companies with an opportunity to give recognition to original artists and simultaneously opens the door for innovation in the sector by not banning the use of copyrighted work as training sets for these models.⁷⁵⁹ The disclosure requirement not only applies to new generative AI models, but to existing programs as well, creating an additional requirement of disclosure if the content contained in the training dataset is altered.⁷⁶⁰

7.2 The EU AI Act

Perhaps the most exciting, substantive and binding regulation in the world of artificial intelligence is the European Union's *Artificial Intelligence Act (Regulation (EU) 2024/1689)*⁷⁶¹ which imposes some notable requirements relating to the disclosure of input data when generative AI is being trained.⁷⁶² Briefly referred to earlier, AI companies offering generative AI as a service will now be mandated to disclose the information regarding the works they use in order to train their models.⁷⁶³ Particularly

⁷⁵⁷ Barron 2024 <https://sdtimes.com/ai/new-legislation-would-require-companies-to-disclose-that-they-are-training-ai-models-on-copyrighted-work/#:~:text=The%20Generative%20AI%20Copyright%20Disclosure,released%20that%20fit%20the%20requirements.>

⁷⁵⁸ Barron 2024 <https://sdtimes.com/ai/new-legislation-would-require-companies-to-disclose-that-they-are-training-ai-models-on-copyrighted-work/#:~:text=The%20Generative%20AI%20Copyright%20Disclosure,released%20that%20fit%20the%20requirements.>

⁷⁵⁹ Robins-Early 2024 <https://www.theguardian.com/technology/2024/apr/09/artificial-intelligence-bill-copyright-art.>

⁷⁶⁰ Yeretsian 2024 <https://www.mondaq.com/unitedstates/copyright/1452814/generative-ai-copyright-disclosure-act-introduced-to-protect-creators->

⁷⁶¹ European Union *Artificial Intelligence Act (Regulation (EU) 2024/1689)*

⁷⁶² Anon 2024 <https://www.cambridgewireless.co.uk/news/2024/jul/11/the-eu-ai-act-and-intellectual-property/#:~:text=The%20EU%20AI%20Act%20represents,ensure%20compliance%20with%20EU%20laws.>

⁷⁶³ Anon 2024 <https://www.cambridgewireless.co.uk/news/2024/jul/11/the-eu-ai-act-and-intellectual->

in the European Union, these AI companies will be under increased legal scrutiny for having to adequately document their use of copyrighted works.⁷⁶⁴ It should also be noted that the *EU AI Act* not only imposes this disclosure requirement on European-based AI companies, but extends such to all generative AI programs, regardless of the jurisdiction they are being trained in.⁷⁶⁵ This extension naturally prevents companies from taking advantage of jurisdictions in which copyright requirements are not as stringent.⁷⁶⁶ The disclosure requirement involves the AI companies not only disclosing where the training data originated from, whether from public or private datasets, but also places an onus on the AI entity to ensure the protection of sensitive information such as trade secrets and the confidential information of a business when scraping the data.⁷⁶⁷ Furthermore, although the *EU AI Act* makes an effort in the regulation and protection of human rights related to the potentially damaging impact that artificial intelligence has, arguments are still being made that some essential human rights are not adequately addressed.⁷⁶⁸

Be that as it may, as it stands the *EU AI Act* is currently the only substantive, and enforceable, piece of AI regulation available from which one is able to gauge what similar legislation in different jurisdictions may read.

property/#:~:text=The%20EU%20AI%20Act%20represents,ensure%20compliance%20with%20EU%20laws_

⁷⁶⁴ Anon 2024 [https://www.cambridgewireless.co.uk/news/2024/jul/11/the-eu-ai-act-and-intellectual-](https://www.cambridgewireless.co.uk/news/2024/jul/11/the-eu-ai-act-and-intellectual-property/#:~:text=The%20EU%20AI%20Act%20represents,ensure%20compliance%20with%20EU%20laws_)

property/#:~:text=The%20EU%20AI%20Act%20represents,ensure%20compliance%20with%20EU%20laws_

⁷⁶⁵ Anon 2024 [https://www.cambridgewireless.co.uk/news/2024/jul/11/the-eu-ai-act-and-intellectual-](https://www.cambridgewireless.co.uk/news/2024/jul/11/the-eu-ai-act-and-intellectual-property/#:~:text=The%20EU%20AI%20Act%20represents,ensure%20compliance%20with%20EU%20laws_)

property/#:~:text=The%20EU%20AI%20Act%20represents,ensure%20compliance%20with%20EU%20laws_

⁷⁶⁶ Anon 2024 [https://www.cambridgewireless.co.uk/news/2024/jul/11/the-eu-ai-act-and-intellectual-](https://www.cambridgewireless.co.uk/news/2024/jul/11/the-eu-ai-act-and-intellectual-property/#:~:text=The%20EU%20AI%20Act%20represents,ensure%20compliance%20with%20EU%20laws_)

property/#:~:text=The%20EU%20AI%20Act%20represents,ensure%20compliance%20with%20EU%20laws_

⁷⁶⁷ Anon 2024 [https://www.cambridgewireless.co.uk/news/2024/jul/11/the-eu-ai-act-and-intellectual-](https://www.cambridgewireless.co.uk/news/2024/jul/11/the-eu-ai-act-and-intellectual-property/#:~:text=The%20EU%20AI%20Act%20represents,ensure%20compliance%20with%20EU%20laws_)

property/#:~:text=The%20EU%20AI%20Act%20represents,ensure%20compliance%20with%20EU%20laws_

⁷⁶⁸ Anon 2024 <https://www.article19.org/resources/eu-ai-act-fails-to-set-gold-standard-for-human-rights/>

7.3 The way forward for South Africa

News regarding the publication of South Africa's *Artificial Intelligence Policy Framework*⁷⁶⁹ (AIPF) by the Department of Communications and Digital Technologies (the DCDT) has provided some much-needed guidance on the way forward for AI regulation in the Republic.⁷⁷⁰ The DCDT has now approached relevant stakeholders for their input regarding the AIPF with the hope of the establishment of AI policies and legislation governing "all things" AI in South Africa, pursuing objectives akin to the *EU AI Act*.⁷⁷¹ The AIPF's main objective is the implementation of policies that appreciate the benefits that AI provides, while simultaneously maintaining a balance between these benefits and compliance with those ethical, social and economic norms that are underpinned by the *Constitution*.⁷⁷² The AIPF places an emphasis on human-centricity and encourages the co-operation between human-based decision-making and machine processing, rather than replacing the former with the latter.⁷⁷³

What is particularly welcoming in the AIPF, and most relevant to this research, is the sub-heading "Human Control of Technology".⁷⁷⁴ This sub-heading makes reference to what it calls "Human-in-the-Loop Systems" and addresses generative AI by ensuring that "critical AI decisions involve human oversight".⁷⁷⁵ Although the AIPF does not address the issues of intellectual property per se, its comments on generative AI may be used to support the interpretation that natural persons only are able to create (or, at least, capable of creating protectable works).⁷⁷⁶ In this writer's opinion it would

⁷⁶⁹ Department of Communications and Digital Technologies of the Republic of South Africa *National Artificial Intelligence Policy Framework*.

⁷⁷⁰ Ongeso and Pretorius 2024 <https://bowmanslaw.com/insights/south-africa-department-of-communications-and-digital-technologies-releases-artificial-intelligence-policy-framework/>.

⁷⁷¹ Ongeso and Pretorius 2024 <https://bowmanslaw.com/insights/south-africa-department-of-communications-and-digital-technologies-releases-artificial-intelligence-policy-framework/>.

⁷⁷² Ongeso and Pretorius 2024 <https://bowmanslaw.com/insights/south-africa-department-of-communications-and-digital-technologies-releases-artificial-intelligence-policy-framework/> and Constitution of the Republic of South Africa, 1996.

⁷⁷³ Ongeso and Pretorius 2024 <https://bowmanslaw.com/insights/south-africa-department-of-communications-and-digital-technologies-releases-artificial-intelligence-policy-framework/>.

⁷⁷⁴ Department of Communications and Digital Technologies of the Republic of South Africa *National Artificial Intelligence Policy Framework* 11.

⁷⁷⁵ Department of Communications and Digital Technologies of the Republic of South Africa *National Artificial Intelligence Policy Framework* 11.

⁷⁷⁶ Department of Communications and Digital Technologies of the Republic of South Africa *National Artificial Intelligence Policy Framework* 11.

seem, however, that the wording suggests that the works generated by AI are still protectable, as long as there is some input from a human.⁷⁷⁷ Without further guidance, it is a waiting game to determine what this threshold of human involvement must be in order for the work to be protected.

It is exactly this, the lack of certainty in AI regulation, that supports the necessity for the adoption of a clear path forward. A suggestion that has been made is to raise the threshold of what constitutes "original".⁷⁷⁸ This is valid if one agrees that (1) AI-generated works should at least satisfy the requirements of copyright protection and that (2) the authors of these works are the natural persons involved in the creation of the AI-generated work. Without guidance or regulation on the substantial input criteria (also referred to earlier in this research), artists may be hesitant to make use of this powerful technology.⁷⁷⁹ As the threshold for originality pertaining to copyright is not a high bar, and AI is capable of producing high-quality "original" works from the simplest of prompts, it naturally follows that all creations created by artificial intelligence should receive protection.⁷⁸⁰ It is argued that since works created by humans require such a low threshold to satisfy the requirements, there is a risk in seeking a higher threshold for works created by AI (whether with a human prompter or autonomously).⁷⁸¹ Referred to earlier in this research, France is currently in the process of amending its copyright laws in order to address the uncertainties that accompany AI-generated works.⁷⁸² Following the thought on possibly raising the requirement threshold for AI-generated works, the French have a concept called the *Unité de l'Art* (loosely translated to "unity of art") approach.⁷⁸³ This approach follows the reasoning that copyright should be awarded to works that reflect an author's personality.⁷⁸⁴ It will then stand to reason that there should not be any category of art that is seen as lesser than another, whether by brush, pencil or software.⁷⁸⁵ Therefore, raising the threshold

⁷⁷⁷ Department of Communications and Digital Technologies of the Republic of South Africa *National Artificial Intelligence Policy Framework* 11.

⁷⁷⁸ Atilla 2024 *JIPLP* 52.

⁷⁷⁹ Atilla 2024 *JIPLP* 52.

⁷⁸⁰ Atilla 2024 *JIPLP* 52.

⁷⁸¹ Atilla 2024 *JIPLP* 52.

⁷⁸² Atilla 2024 *JIPLP* 52.

⁷⁸³ Atilla 2024 *JIPLP* 52.

⁷⁸⁴ Atilla 2024 *JIPLP* 52.

⁷⁸⁵ Atilla 2024 *JIPLP* 52.

for works to exclude them from enjoying copyright protection, merely for the reason that it was generated by an AI system, should hold no merit.⁷⁸⁶

Bearing in mind the requirements of originality and the reduction to a material form, it is also argued that a creation from an AI system can be labelled as a work only if the output itself is "due to the original prompts entered" (originality) and "due to AI coming up with a product based on those prompts" (material form).⁷⁸⁷ Whether the prompts themselves constitute a protectable work is irrelevant for this discussion; however, the AI-generated creation that is set off as a result of these prompts, as long as the prompts are original, should be capable of enjoying copyright protection (of which the author will be the prompter of the work).⁷⁸⁸ This supports the substantial input criteria, as unoriginal prompts lacking detail will not justify the prompter being labelled as the author.⁷⁸⁹ These works, without there being a nexus between the output and the human prompter, will invariably form part of the public domain.⁷⁹⁰ A simple and effective rule of thumb is provided by Atilla, stating that one needs to follow the trail of originality:

Originality needs to be sought in the instructions, and if it cannot be identified, then the outputs should not be allowed to enjoy copyright protection.⁷⁹¹

A question that has been briefly touched on earlier in this research is whether these AI-generated works should be governed by IP rights at all and whether a different branch of law should rather be considered. However, when one considers the characteristics underpinning most, if not all, generative AI tools (such as literature, music and art), it becomes apparent that copyright (and in certain circumstances, patent law) is the most appropriate field by which these works should be governed.⁷⁹² This follows that if an output is generated by artificial intelligence, and the output satisfies the same requirements for copyright as would have been satisfied by a work created through human input, and the only difference between the former and the

⁷⁸⁶ Atilla 2024 *JIPLP* 52.

⁷⁸⁷ Atilla 2024 *JIPLP* 53.

⁷⁸⁸ Atilla 2024 *JIPLP* 53.

⁷⁸⁹ Atilla 2024 *JIPLP* 53.

⁷⁹⁰ Atilla 2024 *JIPLP* 53.

⁷⁹¹ Atilla 2024 *JIPLP* 53.

⁷⁹² Atilla 2024 *JIPLP* 45.

latter is the intervention of an AI system, it does not seem reasonable to exclude these works from being protected under the ambit of copyright.⁷⁹³

The use of AI systems in the creative field will only increase as AI systems become smarter and more "human-like" (for lack of a better term). The reason for this, also referred to above, is the speed with which the AI program is capable of producing a desired result compared to the time spent by humans.⁷⁹⁴ Although one needs to exercise skill, judgment and labour⁷⁹⁵ in order to satisfy the requirements of copyright, the standard of what constitutes skill, judgment or labour for an AI program is completely different from that of a human author, given the AI's capabilities of producing a substantial piece of work within seconds of receiving a prompt.⁷⁹⁶ Although one should look at the author's skill, judgment and labour in the creation of the prompt, this bar is not very high⁷⁹⁷ and the insertion of such prompt may very well satisfy the requirement. The mere fact that the output generated by the AI took mere seconds to create should not, in this writer's opinion, nullify the skill, judgment and labour that went into the creation of the prompt in the first place and therefore disqualifying a human author simply for using an AI program as its method of creation.⁷⁹⁸

It would also be harmful to the AI industry if one were to impose higher standards simply because it is artificial intelligence.⁷⁹⁹ This will invariably increase the lack of an incentive to develop AI.⁸⁰⁰ When the protectability of computer programs was discussed, an increase in investment for the creation of such, as well as an added layer of economic attraction to technology-pro jurisdictions, were observed.⁸⁰¹ Similarly, jurisdictions with a pro-AI approach will be favoured compared to those that are not.⁸⁰²

⁷⁹³ Atilla 2024 *JIPLP* 45.

⁷⁹⁴ Atilla 2024 *JIPLP* 46.

⁷⁹⁵ *Haupt t/a Soft Copy v Brewers Marketing Intelligence (Pty) Ltd* 2006 (4) SA 458 (SCA) 470D-F.

⁷⁹⁶ Atilla 2024 *JIPLP* 46.

⁷⁹⁷ *Haupt t/a Soft Copy v Brewers Marketing Intelligence (Pty) Ltd* 2006 (4) SA 458 (SCA) 470D-F.

⁷⁹⁸ Atilla 2024 *JIPLP* 46.

⁷⁹⁹ Atilla 2024 *JIPLP* 46.

⁸⁰⁰ Atilla 2024 *JIPLP* 46.

⁸⁰¹ Atilla 2024 *JIPLP* 46.

⁸⁰² Atilla 2024 *JIPLP* 46.

For comprehensive legislation regarding the overlap between AI and IP to be taken seriously, it would be imperative to lay down the rules relating to the disclosure of the use of AI during the creative process.⁸⁰³ However, this approach would bear difficulty in countries such as South Africa in which copyright is not registered. Without disclosing that AI was involved in the creative process, whether at the output stage or the input stage, it would be nearly impossible to accurately identify the degree to which the human author was involved in the creation of the eventual output (if such human author wishes to claim authorship, of course).⁸⁰⁴

Some suggestions are made in the earlier-mentioned AI Factsheet released by WIPO, in which the Organisation attempts to consolidate the IP issues raised by AI and highlights potential risks with their corresponding mitigatory factors.⁸⁰⁵ The factsheet breaks it down into, inter alia, "IP infringement", "Deepfakes: rights in likeness and voice", and "IP rights in and ownership of AI outputs". When advising on infringement possibilities (whether input- or output related), WIPO suggests that users opt for generative AI tools which have exclusively used works scraped from the public domain or licensed work.⁸⁰⁶ This would, however, require the AI company to disclose this information on their websites and to adequately vet the work eventually used as training data. Another option, suggested by WIPO, is to pre-empt any output infringement before using such on a commercial scale. This would involve making use of so-called "image search" tools or tools used to detect plagiarism. Companies should also consider implementing measures to evaluate business risks and associated costs in using AI-generated outputs or training their respective AI models with copyrighted work. With regard to deepfake technology, WIPO recognises that the use of such may result in defamation cases and fraud. The Organisation highlights the fact that some countries are considering the regulation of deep fakes specifically, such as China's passing of its Deep Synthesis regulations. WIPO suggests one should obtain the necessary licensing when using someone's likeness. When advising on the rights and

⁸⁰³ Atilla 2024 *JIPLP* 46.

⁸⁰⁴ Atilla 2024 *JIPLP* 46.

⁸⁰⁵ World Intellectual Property Organisation 2024 https://www.wipo.int/export/sites/www/about-ip/en/frontier_technologies/pdf/generative-ai-factsheet.pdf.

⁸⁰⁶ World Intellectual Property Organisation 2024 https://www.wipo.int/export/sites/www/about-ip/en/frontier_technologies/pdf/generative-ai-factsheet.pdf.

ownership in AI outputs, WIPO suggests the establishment of agreements between parties to determine such ownership as legal tests vary depending on jurisdiction. WIPO also suggests the documentation of human involvement, if any, during the process of inventing or creating.

With the various options available, it would be nearly impossible to address every issue that comes with this technology. Further, if one were to look at governing the field of AI, it is this writer's opinion that South Africa should address these issues as a matter of urgency. As such, in attempting to regulate the field of AI technology and its overlap with intellectual property rights, criticism and issues are bound to occur. Even more, the rapid development of AI will present ongoing regulatory difficulties as the technology's capabilities increase. Notwithstanding this, having a springboard in regulating the field is essential, and the EU AI Act, as well as the French Bill No. 1630 referred to earlier in this research, should be used as inspiration for all countries in addressing the issues raised in this research.

Ultimately, the uncertainty regarding AI and its capabilities are encapsulated by Buolamwini:

Whether AI will help us reach our aspirations, or reinforce unjust inequalities, is ultimately up to us.⁸⁰⁷

⁸⁰⁷ Buolamwini date unknown <https://artsandculture.google.com/story/joy-buolamwini-examining-racial-and-gender-bias-in-facial-analysis-software-barbican-centre/BQWBaNKAVWQPJg?hl=en>.

Chapter 8 Conclusion

8.1 A summary of this research

The complexities and uncertainties that underpin the relationship between artificial intelligence and intellectual property law in South Africa and abroad have been the central theme throughout this research. As these generative AI technologies continue to evolve, it becomes ever more clear that the current intellectual property frameworks globally are ill-equipped to address the ever-changing AI landscape. The issues highlighted in this research are not merely hypothetical, but have weighty implications for artists, inventors, developers, and the general public themselves. Given the novelty of this landscape and a lack of sufficient local resources, this research places an emphasis on the exploration of international positions and opinions in order to arrive at a suitable outcome for what the South African position on AI and IP can, or should, be.

Amongst other topics, this research placed an emphasis on the enforcement and infringement with regard to two legs involving AI and IP. Firstly, the issue of protection for the output created by the artificial intelligence system was examined. The research revealed that most jurisdictions recognise that works generated by an AI system can (or should) be considered for protection under copyright. However, jurisdictions such as the United States of America follow a stricter approach in that they are extremely reluctant to grant copyright over any output generated by an AI program. In scenarios where the AI program autonomously created the work, the US will not consider the work for purposes of copyright registrability at all.⁸⁰⁸ Even if one argues that the AI program was "hired" to autonomously create outputs on behalf of the human author, the US will not entertain such reasoning.⁸⁰⁹ However, the USCO recently relaxed their stringent approach slightly, by allowing a human author to argue that they had a

⁸⁰⁸ Vincent 2022 <https://www.theverge.com/23444685/generative-ai-copyright-infringement-legal-fair-use-training-data>.

⁸⁰⁹ Savare, Sterba and Cassidy 2023 <https://www.reuters.com/legal/legalindustry/copyright-conundrum-protection-ai-works-2023-11-28/#:~:text=It%20states%20that%20in%20cases,the%20manipulated%20work%20can%20be>

substantial input in the creation of the work generated by the AI.⁸¹⁰ If the human author can therefore illustrate their involvement in the creation of the work, these parts of the works may, under satisfied conditions, be eligible for protection under current US copyright law.⁸¹¹ Comparing the strict approach of the US to a more lenient approach followed by jurisdictions such the United Kingdom and South Africa, these jurisdictions are at least open to explore the possibilities of protection by allowing for the protection of "computer" generated works.⁸¹² Through this inclusion, it may be possible and probable to include AI-generated works under this category of works in lieu of updated IP legislation. Whether these outputs can be protected, should naturally emanate from their connection to the requirements for copyright. Even if one is able to argue that the AI-generated output satisfies the requirements of originality, the question of authorship and who the holder of the copyright ultimately is, remains unanswered. This research discusses authorship in the context of liability and proposes that there are three main possible categories of authors for these works: the AI program itself, the AI company who created the AI program, or the human who inserted the prompts, regardless of how involved they ultimately are.⁸¹³ Regardless of the stringency or leniency of current or proposed positions of the different jurisdictions, it would appear through this research that works generated by fully autonomous AI programs will not receive protection under current copyright legislation and that there needs to be some human involvement.⁸¹⁴

The second leg of the discussion involves the possible infringement of IP rights when one considers the use of protected material in the datasets which the AI programs use to train on. Various foreign case law was discussed in order to determine whether the use of privately or publicly available copyrighted material for purposes of training these large language models constitutes an infringement. This research revealed that courts

⁸¹⁰ Vincent 2022 <https://www.theverge.com/23444685/generative-ai-copyright-infringement-legal-fair-use-training-data>.

⁸¹¹ Glover 2024 <https://builtin.com/artificial-intelligence/ai-copyright>.

⁸¹² *Copyright, Designs and Patents Act* 1988 (UK) and Para (h) of the definition of "author" in section 1(1) of the *Copyright Act* 98 of 1978 (RSA).

⁸¹³ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁸¹⁴ Vincent 2022 <https://www.theverge.com/23444685/generative-ai-copyright-infringement-legal-fair-use-training-data>.

are reluctant to find AI-produced works to infringe copyright, stating that it is extremely difficult to relate an AI-generated output to works used in their training datasets.⁸¹⁵ The concept of substantial similarity is emphasised in these circumstances, and in the absence of such, there can be no claim of copyright violations.⁸¹⁶ The issue of territoriality ingrained in IP rights was also explored by courts when they determined whether infringement took place in the context of input data.⁸¹⁷ As such, it may be possible to circumvent infringement liability by training the AI system outside of certain jurisdictions.⁸¹⁸ The defences of fair use and a discussion of derivative works were also addressed in this context. Various factors were examined regarding these defences, such as the purpose of using certain works as input data, the substantiality of the work used, and the potential economic impact of the use of certain works.⁸¹⁹ The concept of memorization was also briefly discussed in which an AI program is capable of reproducing the whole, or a substantial part, of a specific work contained within its training dataset.⁸²⁰ Ultimately, this research reached the conclusion that even if one is able to prove that an artist's work was indeed used in the training of the AI program, it nevertheless needs to be proved that there is a substantial similarity between the original copyrighted work and the work produced by the AI program in order for infringement to be present at the output phase.⁸²¹ The question of infringement at the input phase, however, still remains in an extremely grey area, and we await the outcome of the *New York Times* case to provide some guidance on this issue.⁸²²

When one considers the issue of liability, and if one can for purposes of formality agree that AI-generated works are protectable and can also infringe on other works, the question remains who should be liable for these infringements. As discussed

⁸¹⁵ *Andersen v. Stability AI Ltd.* 3:23-cv-00201 (US).

⁸¹⁶ Glover 2024 <https://builtin.com/artificial-intelligence/ai-copyright>.

⁸¹⁷ *Getty Images v Stability AI* [2023] EWHC 3090 (Ch) (UK).

⁸¹⁸ *Getty Images v Stability AI* [2023] EWHC 3090 (Ch) (UK).

⁸¹⁹ Section 107 of the *Copyright Act* of 1976 (US).

⁸²⁰ Mathiasen 2023 https://www.linkedin.com/posts/jakobplesnermathiasen_ip-ai-copyright-activity-7150765714511929344--Bcb/.

⁸²¹ Gervais *AI Derivatives: The Application to the Derivative Work Right to Literary and Artistic Productions of AI Machines* 1128.

⁸²² *The New York Times Company v Microsoft Corporation and OpenAI Inc.* 1:23-cv-11195 (USA).

earlier, three main categories of potential authors were explored to determine who would be held liable in a case of infringement where AI is the centre of attention. Nevertheless, all three categories involve a substantial amount of risk and regulatory work, and without clear guidance or precedent on the way forward, it amounts to a mere hypothetical and academic discussion. The only precedent that currently exists on this matter is the Chinese case revolving around the Ultraman character in which the AI company was held liable for having used the characteristics of Ultraman in order to train its AI program.⁸²³ The court emphasised that these AI companies should ultimately be held accountable if there was a lack of measures put in place with regard to their terms of use and in making users aware of potential copyright issues when generating works using their software.⁸²⁴ The court also suggested that these AI companies should add a so-called watermark on the outputs generated by the AI in order for confusion among members of the public to be mitigated as far as possible.⁸²⁵

This research also addressed certain ethical dilemmas when one considers AI and IP rights. Certain biases ingrained in AI training datasets are another significant concern that is brought to the forefront. As these AI programs are trained from the information they can scrape from certain databases, human-based discrimination and stereotypes are bound to be present in the outputs they create.⁸²⁶ The advent of deepfake technology makes it entirely possible for artists' likenesses to be imitated and this technology is, for example, capable of reproducing the voice of a famous singer without the person being aware that his or her voice is being used in performances for economic gain.⁸²⁷ However, not all artists are pushing back against this technology, and some have even used it to their advantage.⁸²⁸ Other ethical issues

⁸²³ Song 2024 <https://www.kwm.com/global/en/insights/latest-thinking/china-s-first-case-on-aigc-output-infringement-ultraman.html>.

⁸²⁴ Yuing 2024 <https://www.globaltimes.cn/page/202402/1307805.shtml>.

⁸²⁵ Yuing 2024 <https://www.globaltimes.cn/page/202402/1307805.shtml>.

⁸²⁶ Knapton 2023 <https://www.forbes.com/sites/forbestechcouncil/2023/09/06/navigating-the-biases-in-llm-generative-ai-a-guide-to-responsible-implementation/?sh=310b7b595cd2>.

⁸²⁷ Steyn date unknown https://www.ensafrica.com/news/detail/7535/ai-deep-fakes-and-ip-seeing-is-not-believing?utm_source=mondaq&utm_medium=syndication&utm_term=Technology&utm_content=articleoriginal&utm_campaign=article.

⁸²⁸ Marsh 2023 <https://www.bbc.com/news/business-65995089>.

such as the replacement of writers and actors for films is also raised, highlighted by the recent strikes in Hollywood.⁸²⁹

Lastly, this research explores the need for AI regulation and attempts to consolidate a practical way forward for South Africa by examining some of the most prevalent AI-related regulations and legislation implemented recently. The South African AIPF is a very welcome publication and would have been implemented after this research has been completed. Ultimately, this research concluded by examining the IP-related generative-AI regulations found in the recently released *EU AI Act* and the proposed *Bill No. 1630* in France and how these may influence the South African approach in the future.

As AI technologies improve, they are increasingly capable of creating original content that rivals, or even surpasses, human creativity in certain areas. However, the legal recognition and protection of these AI-generated works remain a contentious topic with varied views.

8.2 The South African perspective

Due to a lack of direct related case law or policies regarding the effect of artificial intelligence in South Africa, this research was forced to draw on the help of various international standards, opinions, and case law discussions in order to arrive at what South African courts or policymakers may do when challenged with the question of whether AI generated works can be protected under current South African legislation, as well as attempting to answer the various sub-questions that this issue includes.

Under South African copyright law, fully autonomous AI-generated works seem to fall outside of the ambit of the Act as a result of the authorship requirement. Although the Act makes provision for computer-generated works, the wording of the Act seems to allude that works created under such circumstances, still require the direction or

⁸²⁹ Steyn date unknown https://www.ensafrica.com/news/detail/7535/ai-deep-fakes-and-ip-seeing-is-not-believing?utm_source=mondaq&utm_medium=syndication&utm_term=Technology&utm_content=articleoriginal&utm_campaign=article.

control of a human author.⁸³⁰ Therefore, works created by fully autonomous AI programs seem to fall outside the ambit of protection afforded by the Act. Even if policymakers, for some reason, include "sentient" AI's under the definition of an author, the common law requirement of propriety may, nevertheless, still exclude these works from being protected under copyright. In contrast, in South Africa, due to a lack of substantive examination of patent applications, it would seem that inventions invented by fully autonomous AI programs may very well be granted patent protection.⁸³¹ This, nevertheless, does not provide guidance on what would happen in instances where patent infringement occurs, as there is, strictly speaking, no inventor with *locus standi*. For copyright, at least, the Act's limitations reflect the trend of most international laws and opinions, such as the United States, by taking the cautious approach to recognise AI as an author.⁸³² Countries like the United Kingdom, similarly recognises computer generated works in its Act, but even then these works ultimately seem to currently require a human author.⁸³³ While somewhat aligned with international norms, South African copyright and patent laws lack adaptability in the era of artificial intelligence.

The distinction between a work created by a fully autonomous AI program, compared to a work created with the use of AI is critical. Where one considers an AI assisted work, South African law is more likely to award copyright protection, as this seems likely to be interpreted as computer generated works. The human who prompts the AI program with specific instructions and substantively influences the outcome is highly likely to be regarded as an author. On the contrary, where works are created by an AI entirely without human intervention, this lack of human authorship seems to pose a significant legal challenge and leaves South Africa with a gap that may disincentivise investment and innovation in generative AI technologies.

It would therefore seem that a lack of human authorship inherently poses an issue for IP rights regarding AI generated works. As South African laws do not recognise the AI

⁸³⁰ Para (h) of the definition of "author" in section 1(1) of the *Copyright Act* 98 of 1978.

⁸³¹ Knowles 2021 <https://www.thetimes.co.uk/article/patently-brilliant-ai-listed-as-inventor-for-first-time-mqj3s38mr>.

⁸³² Glover 2024 <https://builtin.com/artificial-intelligence/ai-copyright>.

⁸³³ *Copyright, Designs and Patents Act* 1988 (UK).

program as a legal entity capable of holding rights, even if one is able to argue that these outputs are eligible for protection, questions remain whether these rights should belong to:

1. The human prompter giving the instructions and directly influences the outcome (as the direct influencer of the eventual outcome);
2. The creator or creators of the AI program themselves (as the ultimate creator behind the existence of the AI program); or
3. The AI program itself (which would greatly reposition the legal norms of the Republic).⁸³⁴

Given the lack of legislative guidance, the courts of South Africa may need to follow current international trends. For example, the EU⁸³⁵ tends to favour the human creator most closely linked to the production of the eventual output, whereas the United States⁸³⁶ seems to explicitly reject the registration of copyright or patents in cases where there cannot be proved to have been substantial human intervention and involvement.

If these works cannot be protected under South African laws, they are, in effect, unprotected and therefore form part of the public domain. This therefore creates an anomaly: works falling into the public domain may encourage the use of AI generated works on a broader scale, but it also provides a disincentive to use these technologies to create, directly inhibiting the technological growth in this sector. This problem stresses the need for legislative reform to address as what AI generated works are classified to prevent these creations from automatically fall into the public domain.

The issue of unauthorised use of copyrighted material in an AI program's dataset for training purposes also poses unique challenges for South Africa. Once again, the *Copyright Act* does not expressly address whether the use of protected works as training data would constitute an infringement. Some of these challenges are

⁸³⁴ Bonadio, Dinev and McDonagh "Can Artificial Intelligence Infringe Copyright? Some Reflections" 244-258.

⁸³⁵ Scerba and Fort 2024 <https://www.technologysleage.com/2024/04/the-first-czech-case-on-generative-ai/>.

⁸³⁶ Glover 2024 <https://builtin.com/artificial-intelligence/ai-copyright>.

emphasised by the concept of "fair dealing" and the infringement requirement of "substantial similarity".

Fair dealing or fair use: while the South African *Copyright Act* acknowledges fair dealing as an exception, the use of copyrighted works for training purposes in an AI may not fall into the rather strict list of categories posed such as private study or research.⁸³⁷ The introduction of the *Copyright Amendment Bill* may provide some assistance if the proposed shift towards a more lenient fair use system is introduced.

Substantial similarity: there still has to be substantial similarity between the output generated by the AI and the original work in its training dataset. However, AI programs seem to create transformative or derivative works which increases the difficulty of proving infringement.

Another complex question is that of liability. In instances where the AI program uses copyrighted works in its training datasets (without the necessary permission) or creates a substantially similar output than a copyrighted work, the question of who exactly bears this liability is also a grey area. It would seem through this research that the potentially liable parties are the AI companies, the end-user (or prompter), or simply no one (if liability cannot be attributed to the AI itself, nor any of the preceding options). South Africa may draw precedence from the courts in China⁸³⁸ who have adopted an approach holding the developers of the AI program liable for outputs which are infringing when these developers have failed to implement certain safety measures.

South Africa may need to amend its laws to address the issues presented by generative AI technologies. These may include the recognition of the AI program as an author or inventor, introducing new categories in intellectual property in order to expressly govern AI generated works, or even introducing policies to mandate disclosures of the involvement of AI when used in the creation of works. South Africa may wish to,

⁸³⁷ <https://www.debeerattorneys.com/post/fair-use-v-fair-dealing-copyright#:~:text=As%20AI%20increasingly%20replicates%20human,starting%20to%20make%20its%20mark.>

⁸³⁸ Song 2024 <https://www.kwm.com/global/en/insights/latest-thinking/china-s-first-case-on-aigc-output-infringement-ultraman.html>.

initially, follow the guides emphasised in the *EU AI Act*⁸³⁹ which places an emphasis on transparency and accountability or the Chinese⁸⁴⁰ approach of regulating AI developers and companies. These potential reforms however must keep the unique socio-economic challenges South Africa faces in mind in order to ensure an equal distribution of potential benefits that generative AI brings.

South Africa's intellectual property laws face notable challenges in dealing with the intricacies of generative AI programs. The current legal framework, unfortunately, doesn't address how to protect or indeed assign ownership to works and inventions generated by AI, which leaves significant questions unanswered. This lack of certainty, however, creates a unique opportunity to update its intellectual property laws to better incorporate modern technologies. South Africa will, nevertheless, have to take a balanced approach to encourage innovation, but also ensuring accountability. This presents South Africa with the following objective: to build an IP framework which stays digitally relevant, which supports creativity (however that creativity comes about), and which drives innovation and economic growth within the Republic.

In concluding this research, the writer leaves the following consideration made by a user on X:

You know what the biggest problem with pushing all-things-AI is? Wrong direction. I want AI to do my laundry and dishes so that I can do art and writing, not for AI to do my art and writing so that I can do my laundry and dishes.⁸⁴¹

⁸³⁹ European Union *Artificial Intelligence Act (Regulation (EU) 2024/1689)*

⁸⁴⁰ Song 2024 <https://www.kwm.com/global/en/insights/latest-thinking/china-s-first-case-on-aigc-output-infringement-ultraman.html>.

⁸⁴¹ Maciejewska 2024 <https://x.com/AuthorJMac/status/1773679197631701238?lang=en>.

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