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**Originality and Authorship in AI-generated works:
The Australian Copyright Law perspective.**

SUMMARY: 1. Introduction. Artificial Intelligence & Creativity – 2. Current legal status of AI creations under the Australian Copyright Law. – 3. The authorship issue. – 4. The originality issue. – 5. Conclusions. A comparative overview of alternatives and solutions from other countries and fields. – 6. Suggested readings.

1. Introduction. Artificial Intelligence & Creativity

*' More than iron, more than lead, more than gold I need electricity.
I need it more than I need lamb or pork or lettuce or cucumber.
I need it for my dreams.'*¹

This fine piece of literary work is excerpted from a book called *"The Policeman's Beard is Half Constructed"*. In the introduction, its author – William Chamberlain – claims: 'With the exception of this introduction, the writing in this book was all done by computer [named Racter].'² It was 1984.

The code was yet rudimental, and the algorithm still had to rely heavily on human "syntax directives". In this sense, Racter's output betrays a style (one may say "an intellectual effort") that

¹ Racter, William Chamberlain and Thomas Etter, *The Policeman's Beard is Half-Constructed* (Warner Books, New York, 1984) 11.

² Ibid 3.

in the end is really that of its programmers – W. Chamberlain and T. Etter. This, however, may not be the case anymore. After almost 40 years of rapid advancements in technology since Racter, it should indeed come as no surprise that today the so-called Artificial Intelligence systems (hereinafter “AI”) possess much higher degrees of autonomy – both in their learning process and in their decisions – such that their final creations are less and less distinguishable from human-made works.³ This creates a problematic intersection between the fields of AI and Intellectual Property Law worldwide.⁴ In this essay, I will try to address the question, in particular, if Australian copyright law can protect material generated by AI (*infra*, Chapter 2), and, briefly, what are the other countries’ stances on this matter (*infra*, Chapter 3).

Before exploring that, however, it is important to devote the remaining part of this introduction to clarifying some common misconceptions about Artificial Intelligence systems and AI-generated works.

Firstly, there is a large disagreement about what AI exactly is. AI systems are often cited to encompass anything that is technologically advanced, such as the internet of things, robotics, ‘agents that exist in an environment and perceive and act’.⁵ The bottom line seems to be that AI is

³ See, eg, *The Next Rembrandt* (2016), a project where one AI – fed with large volumes of data – was able to create new paintings in Rembrandt’s style < <http://www.nextrembrandt.com> >; *Portrait of Edmond Bellamy* (2018), another famous AI-generated artwork which was eventually sold at an art auction for 432,500 USD < <https://www.christies.com/features/A-collaboration-between-two-artists-one-human-one-a-machine-9332-1.aspx> >; *Flow Machines* (2016) is an AI capable of autonomously creating music < <https://www.flow-machines.com/history/events/ai-makes-pop-music/> >; *Beautiful the World* (2020) is an AI-generated song developed by the Sydney production studio ‘Uncanny Valley’ and winner of the world’s first ‘AI Song Contest’ < <https://www.rmit.edu.au/news/all-news/2020/may/team-australia-wins-world-s-first-ai-song-contest-> >. See also Ahmed Elgammal et al., *CAN: Creative Adversarial Networks, Generating “Art” by Learning About Styles and Deviating from Style Norms* (Conference Paper, International Conference on Computational Creativity, 21 June 2017) 17 [Elgammal and his fellow researchers carried out an experiment to determine whether humans were capable of distinguishing computer-generated art from human art by its appearance. 75% of the research subjects assumed that the computer-generated paintings were created by a human artist] < <http://arxiv.org/abs/1706.07068> >.

⁴ See Rita Matulionyte, ‘Australian Copyright Law Impedes the Development of Artificial Intelligence: What Are the Options?’ (2021) 52(4) *IIC – International Review of Intellectual Property and Competition Law* 417; Niloufer Selvadurai and Rita Matulionyte, ‘Reconsidering creativity: copyright protection for works generated using artificial intelligence’ (2020) 15(7) *Journal of Intellectual Property Law and Practice* 536; Courtney White and Rita Matulionyte, ‘Artificial Intelligence: Painting the Bigger Picture for Copyright Ownership’ (2020) 30(4) *Australian Intellectual Property Journal* 224; Martin Senftleben and Laurens Buijelaar, ‘Robot Creativity: An Incentive-Based Neighboring Rights Approach’ (2020) 42(12) *European Intellectual Property Review* 717; Bennett, Belinda and Angela Daly, ‘Recognising rights for robots: Can we? Will we? Should we?’ (2020) 12(1) *Law, Innovation and Technology* 60, 72; Dilan Thampapillai, ‘If Value Then Right? Copyright and Works of Non-human Authorship’ (2019) 30(2) *Australian Intellectual Property Journal* 96; Rosa Maria Ballardini, Kan He and Teemu Roos, ‘AI-generated content: authorship and inventorship in the age of artificial intelligence’ in Taina Pihlajarinne, Juha Vesala and Olli Honkkila (eds.), *Online Distribution of Content in the EU* (Edward Elgar Publishing, 2019) 117; Guadamuz, Andrés, ‘Do Androids Dream of Electric Copyright? Comparative Analysis of Originality in Artificial Intelligence Generated Works’ (2017) 2 *Intellectual Property Quarterly* 169; Madeleine de Cock Buning, ‘Autonomous Intelligent Systems as Creative Agents under the EU framework for Intellectual Property’ (2016) 7(2) *European Journal of Risk Regulation* 31.

⁵ Stuart J. Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach* (Pearson, 3rd ed., 2010) 1. See also Zachary C. Lipton, ‘From AI to ML to AI: On Swirling Nomenclature & Slurried Thought’, *ApproximatelyCorrect* (online, 5 June 2018): ‘AI is aspirational, a moving target based on those capabilities that humans possess but which machines do not’ < <http://approximatelycorrect.com/2018/06/05/ai-ml-ai-swirling-nomenclature-slurried-thought/> >.

more of a field of research, rather than a specific application or set of applications.⁶ For the purposes of this essay, however, AI should be identified with only one of its subsets of research – the one subset which addresses AI’s currently most prominent feature (compared to other computer programs and previous algorithms): autonomy,⁷ *id est* the capability of making decisions and generating outputs with ‘little to no human input’.⁸ We call this subset “Machine Learning” (shortened “ML”), which is exactly ‘the study of autonomous systems that are capable of learning without being specifically programmed’.⁹ This specification is very important, because most of the legal discourse around AI (also non-IP-related) concerns in fact only this subset, and not the entire field of research.

Secondly, AI-generated works (or better, ML-generated works) should not be treated as a unitary subject. There are indeed various techniques that fall under ML. Most of them share the fact that the machine is fed with enormous amounts of data and is programmed to mimic the human brain’s way of learning by patterns, inferences, predictions and refinements. However, these techniques differ greatly in the level of human involvement and supervision they require, and with ML not yet capable of supporting full autonomy, ‘human intervention remains necessary at different stages’.¹⁰ Consequently, the works under analysis should be sifted according to at least three variables or “degrees of autonomy”: i) when the AI is used as an ‘intelligent tool’¹¹ powered by appropriate human inputs; ii) when the AI operates autonomously within certain parameters and instructions; iii) when the AI creates works with full autonomy.¹² Many systems today fall between the two extremes: ‘they require significant user input but they also significantly guide and affect the outcome’.¹³ Accordingly, the core of this essay will concern especially the second variable, which we may call “AI-generated works” *strictu sensu*. Variable i) (also known as AI-assisted works), instead, is less likely to constitute a problem under a copyright perspective, since both authorship and creativity would stem from a human;¹⁴ whereas variable iii) (also known as Strong AI, or General AI, or Advanced AI), albeit posing even harder conundrums from the perspective of legal rights and legal personality, is still a matter of theoretical speculations and no ML system has yet reached this level.

⁶ See Robert J. Schalkoff, *Artificial Intelligence: An Engineering Approach* (McGraw-Hill, 1990) 2.

⁷ Ballardini (n 4) 119.

⁸ Ana Ramalho, ‘Will Robots Rule the (Artistic) World? A Proposed Model for the Legal Status of Creations by Artificial Intelligence Systems’ (2017) 21(1) *Journal of Internet Law* 12, 13. This concept of “autonomy” should not be confused with that of “automation”: cf. Stanton Jones, ‘Automation, Autonomy and the Messy In-Between’ (online, 31 January 2018) *Isg*: < <https://isg-one.com/research/articles/automation-autonomy-and-the-messy-in-between> >. Racter (n 1), for example, together with all the exponents of the first generation of AI systems, would be automated but not autonomous: it executed ‘a pre-defined task’ by itself, but it had to rely entirely on human input and creativity. Autonomous AI systems instead imply ‘mimicking the way humans use judgment in an uncertain environment’.

⁹ Jaime G. Carbonell, Ryszard S. Michalski and Tom M. Mitchell, *Machine Learning: An Artificial Intelligence Approach* (Tioga Publishing 1983), 4, as cited in Guadamuz (n 4) 171.

¹⁰ White (n 4) 228. ‘First, humans are needed to create an AI entity (algorithm, AI system etc). Second, humans are often responsible for training data selection and input. Third, after the algorithm is trained, the act of creating works is normally left to the AI system. Finally, as a fourth stage, humans often check the vast volumes of the generated content, select the one they find relevant or interesting, potentially edit it, merge it with other pieces of work and finally deliver it to the end user’: at 228.

¹¹ Thampapillai (n 4) 99.

¹² *Ibid*.

¹³ Ballardini (n 4) 120.

¹⁴ Jani McCutcheon, ‘The Vanishing Author in Computer Generated Works: A Critical Analysis of Recent Australian Case Law’ (2013) 36 *Melbourne University Law Review* 915, 929.

Lastly, since AI (ML) employs data and other potentially copyrighted material as input for generating its works, the question about copyright protection of AI-generated works is only one side of the issue. The flip side, *id est* copyright infringement while generating those works, will not be addressed in this essay.¹⁵

2. Current legal status of AI creations under the Australian Copyright Law

The *Copyright Act 1968* (Cth) (the “CA”) provides that copyright is attributed to ‘the author of a literary, dramatic, musical or artistic work’,¹⁶ when such work is ‘original’,¹⁷ expressed in a ‘material form’¹⁸ and connected to the Australian jurisdiction.¹⁹ While the material form requisite does not raise immediate issues for AI (the latter being capable of storing the work in compliance with the definition given in CA s 10), the requisites of authorship, originality and jurisdiction may do.

The underlying problem with them is that Copyright Law has always been anthropocentric.²⁰ From the Statute of Anne through the CA, the Australian legal framework – together with many other Common Law and Civil Law countries – still reflects today an assumption internationally codified (at least in part) in the Berne Convention:²¹ that Intellectual Property protects human creations.²² Thus it is argued that authorship requires a natural person, which the AI is not; originality requires an intellectual effort, which the AI has not; and the connection criterion requires a ‘qualified person’, *i.e.* ‘an Australian citizen or a person resident in Australia’,²³ which the AI is not. The last argument can be quickly dismissed, as the CA allows for works and other subject matter to be protected under Australian Copyright Law, provided that they are published first²⁴ (or within thirty days)²⁵ in Australia; the first two questions, instead, still cause a heated debate that this essay will attempt to separately discuss hereunder.

¹⁵ On this aspect, lastly, see Rita Matulionyte, ‘Australian Copyright Law Impedes the Development of Artificial Intelligence: What Are the Options?’ (2021) 52(4) *IIC – International Review of Intellectual Property and Competition Law* 417.

¹⁶ *Copyright Act 1968* (Cth) s 35 (“CA”).

¹⁷ *Ibid* pt III. Note that this element is not required for other subject matter: cf pt IV. See also *Telstra Corp Ltd v Phone Directories Co Pty Ltd* (2010) 194 FCR 142, 172 [100] (Perram J).

¹⁸ *Ibid* s 22 para 1.

¹⁹ *Ibid* s 32 paras 1–2,4.

²⁰ Copyright Law Review Committee, *Simplification of the Copyright Act: Part 2 - Categorisation of Subject Matter and Exclusive Rights, and Other Issues* (1999) CLRC 14, [5.43] < <http://www.austlii.edu.au/cgi-bin/viewdoc/au/other/lawreform/CLRC//1999/14.html> >. See also Edwin C. Hettinger, ‘Justifying Intellectual Property’ (1989) 18 *Philosophy & Public Affairs* 31, as cited in Guadamuz (n 4) 173; Senftleben (n 4) 7 n 46; Daniel Gervais, ‘Machine Authors’ (Vanderbilt Law Research Paper No 19-35, 25 March 2019) 22. But see David Brennan, *The Root of Title to Copyright in Works* (2015) *Intellectual Property Quarterly* 289, in which Brennan argues that historically both human authorship and first publication have valid claims for being the ‘root of title’ in copyright works.

²¹ *Berne Convention for the Protection of Literary and Artistic Works*, signed on 9 September 1886, 828 UNTS 221 (entered into force 5 December 1887).

²² See Jane Ginsburg, ‘People Not Machine: Authorship and What It Means in the Berne Convention’ (2018) 49(2) *IIC – International Review of Intellectual Property and Competition Law* 131.

²³ CA s 32 para 4. See also *Copyright Amendment Act 1984* (Cth).

²⁴ *Ibid* s 32 para 2.

²⁵ *Ibid* s 29 para 5.

3. The authorship issue

As argued above, this subject is fraught with a general anthropocentric approach, which we can still find in expressions such as ‘author, in relation to a photograph, means the *person* who took the photograph’,²⁶ or ‘70 years after the calendar year in which the author of the work *died*’²⁷ and the requirement that ‘copyright will subsist in [published and unpublished original works] if the “author” of the work was a *qualified person* at the time the work was made’²⁸ (emphases added). Notwithstanding this, the CA does not actually provide any express general definition for “author”, and the existence of a human author is not a requirement for copyright protection of ‘other subject matter’ under Part IV of the CA. Thus, the question of admissibility of non-human authorship is not entirely new.

In 1984, for example, when computer programs (in particular, their source code) gained express protection under the CA definition of ‘literary work’²⁹ and authorship was attributed to their programmer(s), doubts were casted onto the effectiveness of that measure. As a result, the Copyright Law Review Committee (the “Committee”) was inquired in October 1988 into ‘whether [the Act, among other things] ... adequately and appropriately protects ... *works created by or with the assistance of computer programs*’ (emphasis added).³⁰ In the Final Report,³¹ the Committee addressed this point making a very important distinction: computer-assisted material is such when the machine is used as a tool by a human author, e.g. through a word processing program, and consequently it attracts copyright protection in the same way as traditional means; computer-generated material, instead, is such when it cannot be traced back to any pre-determined or pre-identifiable human author, and therefore it cannot properly fall into any category of copyrightable work under the CA. The Committee thus recommended that a new category of subject matter (“computer-generated material”) be added to the CA, with a protection term of 25 years, and that authorship be addressed along the lines of the UK CDPA 1988 (see Chapter 3), attributing it to the person who undertakes the arrangements necessary for the creation of that material. Interestingly, in a subsequent report,³² the Committee partly changed its approach by reckoning that the technological advancements were such that ‘an approach that distinguishes between material created “with the assistance of” a computer and material created “by” a computer is likely to prove difficult to understand and apply in practice’.³³ Adoption of the CLRC’s latest recommendations would therefore see computer-generated works protected under Part III of the Copyright Act in the same way computer-assisted works are, i.e. as human-authored works, and would be afforded the same bundle of exclusive rights and terms of protection.³⁴

Considering the above, can we use the same provisions and lines of reasoning for AI systems? Although the CLRC never mentions them in these terms, it can be safely argued that when AI is

²⁶ Ibid s 10 (definition of ‘author’).

²⁷ Ibid s 33 paras 2–3.

²⁸ Copyright Law Review Committee (n 20) [5.42].

²⁹ CA s 10 (definition of ‘literary work’).

³⁰ Government of Australia, *Terms of reference to the CLRC* (October 1988), as quoted in Anne Fitzgerald and Cristina Cifuentes, ‘Australian Recommendations on Computer Software Protection’ (1996) 39(7) *The Computer Journal* 566, 566.

³¹ Copyright Law Review Committee, *Computer Software Protection* (1994) CLRC 10 < <http://www.austlii.edu.au/cgi-bin/viewdoc/au/other/lawreform/CLRC//1994/10.html> >.

³² Copyright Law Review Committee (n 20).

³³ Ibid [5.47].

³⁴ Anne Fitzgerald and Tim Seidenspinner, ‘Copyright and Computer Generated Materials – Is it Time to Reboot the Discussion About Authorship?’ (2013) 3(1) *Victoria University Law and Justice Journal* 47, 59.

powered by a source code or a set of instructions (hence a literary work), copyright ‘subsists and is held by the person or company that developed the artificially intelligent machine’.³⁵ The problem is that the analogy – just like the original provision on computer programs – grants protection only to the AI itself, and not to the material it generates. Absent an adoption of the above CLRC recommendations, whereas AI-assisted works (our “first variable”) may still find a protection under the assumption that a human user is primarily responsible for the final form of the work,³⁶ to overcome the copyright-wall for AI-generated works we should instead make a logical leap and pretend that authorship of the machine’s source code equates to authorship of the machine’s outputs – which is something currently not supported by any statute nor case law in Australia.

Recent case law, in fact, seems to move towards the opposite direction. Let us consider the following four cases (further expanded below under par. B): *Data Access Corp v Powerflex Services Pty Ltd* (*‘Data Access’*);³⁷ *IceTV Pty Ltd v Nine Network Australia Pty Ltd* (*‘Ice TV’*);³⁸ *Telstra Corp Ltd v Phone Directories Co Pty Ltd* (*‘Telstra’*);³⁹ and *Acohs Pty Ltd v Ucorp Pty Ltd* (*‘Acohs’*).⁴⁰

There are implicit references to human authorship in *Data Access* and *IceTV*, in relation to the subsistence of copyright respectively in a table generated by a computer program and in a TV schedule. For example, the lead judgment in *Data Access* held that the ‘work must emanate from a person claiming to be its author’.⁴¹ In *IceTV*, the Court referred to ‘the classical notion of an individual author’.⁴² Such references became explicit in the later case *Phone Directories*, where Justice Yates stated: ‘[i]n relation to works, an author is, under Australian law, a human author’.⁴³ In the latest judgment of *Acohs*, the Court confirmed that no copyright protection would have been granted to an HTML source code, because it was generated by a computer program and it was not authored by a natural person;⁴⁴ moreover, the Court also expressly considered our logical leap (i.e. whether the author of the computer program could be the author of a computer-generated HTML source code), and it concluded that it would be ‘artificial’ to regard the programmers in that way.⁴⁵

In conclusion, it remains highly unlikely that non-human authorship can be directly attributed to a work, and Courts do not seem to endorse the thesis of a fictional human authorship. A subject matter other than work, on the other hand, does not require human authorship for obtaining copyright protection, but the CLRC Recommendation that the Part IV of the CA be accordingly integrated so to encompass ‘computer-generated works’ (and, I would add, ‘AI-generated works’) remains, at the present time, unheeded.

³⁵ Nina Fitzgerald, Eoin Martyn and Andrew McClenahan, ‘An in-depth analysis of copyright and the challenges presented by artificial intelligence’, *Ashurst* (online, 11 March 2020) <<https://www.ashurst.com/en/news-and-insights/insights/an-indepth-analysis-of-copyright-and-the-challenges-presented-by-artificial-intelligence/>>.

³⁶ See n 14.

³⁷ (1999) 202 CLR 1 (*‘Data Access’*).

³⁸ (2009) 239 CLR 458 (*‘IceTV’*).

³⁹ (2010) 194 FCR 142 (*‘Phone Directories’*).

⁴⁰ (2010) FCA 577 (*‘Acohs’*).

⁴¹ *Data Access* (n 37), [122]. See also at [32]–[34] (Gleeson CJ, Gummow, McHugh and Hayne JJ).

⁴² *IceTV* (n 38), [23] (French CJ, Crennan and Keifel JJ). As Thampapillai (n 4) pointed out, ‘it stands to reason that only a human being can be an individual’: at 106.

⁴³ *Phone Directories* (n 39), [134] (Yates J).

⁴⁴ *Acohs* (n 40), [50].

⁴⁵ *Ibid* [53].

4. The originality issue

'The concept of originality is in a state of disharmony internationally'.⁴⁶ Only in Australia, there have been six occasions upon which the High Court has considered originality within the context of subsistence and infringement of copyright.⁴⁷

Historically, even though (again) no definition is clearly provided under the CA, the standard of originality under Australian copyright law relied on the mere 'sweat of the brow': in *Sands & McDougall v Robinson*, for example, it was held that the exercise of judgment and discrimination was sufficient to confer originality – and this was the only condition, no speculations over authorship were made. This low threshold, ironically much more technologically neutral than the current one,⁴⁸ allowed authors to protect works solely on the basis of the required 'investment of time, money and effort',⁴⁹ as the Court later held in *Desktop Marketing Systems Pty Ltd v Telstra Corp Ltd*.⁵⁰

With the increasing role of computer software and machines in the creation of works, the concept of originality began to be revisited. In *IceTV*, the High Court delivered a landmark ruling which rebutted *Desktop Marketing* and established a new originality criterion: mere skill and labour is not sufficient, originality needs the exertion of an 'independent intellectual effort'.⁵¹

This new standard makes it difficult to award copyright protection to works created by AI, as it concretely represents a reflection of the authorship requirement: under the *Phone Directories* formula, indeed, the user needs to be 'directing or fashioning the material form of the work',⁵² and for the reasons widely explained under (A) this is not likely to happen in AI-generated works.

On the other hand, Thampapillai and Brennan⁵³ point out several contradictions within the Australian doctrine of originality. In *Data Access* the High Court found copyright subsisting in the computer table, even though it was created by an algorithm; and generally in photography, copyright is normally granted even though the act of fixation is done by a machine and hence the author cannot fully predetermine the output.

In my view, however, these arguments just reinforce the thesis that copyright protection of AI- and computer-assisted works is possible, because the machine's contribution – albeit possessing a certain degree of autonomy and therefore escaping human's full control (this problem is often known as the "black-box issue") – can still be reduced to that of a tool in the hands of a human being. Conversely, AI- and computer-generated works are likely to be treated as cases in which no authorship is attributed (hence no copyright protection is granted) because no human being had decisive control over the final outcome and non-human agents cannot be authors, as it was aptly illustrated overseas in the (in)famous *Naruto* case.⁵⁴

⁴⁶ Guadamuz (n 4) 185.

⁴⁷ See *Sands & McDougall Pty Ltd v Robinson* (1917) 23 CLR 49 ('Sands & McDougall'); *Computer Edge Pty Ltd v Apple Computer Inc* (1986) 161 CLR 171 ('Apple Computer'); *Autodesk Inc v Dyason* (1992) 173 CLR 330 ('Autodesk No.1'); *Autodesk Inc v Dyason [No 2]* (1993) 176 CLR 300 ('Autodesk No.2'); *Data Access* (n 37); and *IceTV* (n 38).

⁴⁸ White (n 4), 229. 'If this lower originality standard applied today, it is arguable that works created by AI could meet this low originality standard': at 229.

⁴⁹ Copyright Law Review Committee (n 31), [14.63].

⁵⁰ *Desktop Marketing Systems Pty Ltd v Telstra Corp Ltd* (2002) 119 FCR 491.

⁵¹ *IceTV* (n 38), [33].

⁵² McCutcheon (n 14) 931.

⁵³ Thampapillai (n 4) 111–112.

⁵⁴ *Naruto v David John Slater* (ND Cal, Case No 315-cv-04324 WHO, 2016).

5. Conclusions. A comparative overview of alternatives and solutions from other countries and fields.

In light of the current technological advancements in AI & ML and considering the latest evolutions in the Australian doctrine of authorship and originality, Australian copyright laws are unlikely to protect AI-generated works *strictu sensu*. Taking a project such as *The Next Rembrandt*,⁵⁵ its human authors would need to demonstrate that their contribution is of overwhelming significance when compared to that of the AI, and their intellectual effort is manifest in the material form. Otherwise, they better look elsewhere. Trade secrets, for example, are an excellent way to protect technology that cannot be reverse engineered. More literally, other jurisdictions may offer a stronger level of protection: for instance, the UK Copyright, Designs and Patents Act 1988 provides that when there is no human author of a computer-generated work, the author 'shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken'⁵⁶. Currently, with some minor (and partial exceptions) coming from countries such as India and New Zealand, this is the only provision that deals specifically with computer generated content internationally.

European law, instead, currently requires that originality originates from a human author. This is because the case law from the Court of Justice of the European Union (CJEU) in *Infopaq* held that originality as a work must be the 'author's own intellectual creation',⁵⁷ and a similar path was taken in the United States with the case *Feist Publications, Inc v Rural Telephone Service Co.*⁵⁸

To conclude, one should finally consider whether AI-generated works "should" be granted protection. This debate is deep enough to require a further, separate dissertation. In broad terms, the overall analysis of utilitarian and natural rights theories (undertaken, for example, by White and Matulionyte)⁵⁹ underlying copyright law demonstrates that, at least in certain cases, when the human contribution to the creation of a work by AI is sufficiently significant and not too remote from the final output, there might be a good reason to grant copyright protection to such works.

6. Suggested readings

Articles/Books/Reports

Ballardini, Rosa Maria, Kan He and Teemu Roos, 'AI-generated content: authorship and inventorship in the age of artificial intelligence' in Taina Pihlajarinne, Juha Vesala and Olli Honkkila (eds.), *Online Distribution of Content in the EU* (Edward Elgar Publishing, 2019) 117

Bennett, Belinda and Angela Daly, 'Recognising rights for robots: Can we? Will we? Should we?' (2020) 12(1) *Law, Innovation and Technology* 60

Brennan, David, 'The Root of Title to Copyright in Works' (2015) *Intellectual Property Quarterly* 289

Cantatore Francina, 'Creative Machines: AI and IP Rights in Digital Authorship and Patentable Inventions' (2021) 31(3) *Australian Intellectual Property Journal* 176

⁵⁵ See n 3.

⁵⁶ UK Copyright, Designs and Patents Act 1988 (CDPA) s 9 par 3.

⁵⁷ *Infopaq International A/S v Danske Dagblades Forening* (Court of Justice of the European Union, C-5/08, ECLI:EU:C:2009:465, 16 July 2009).

⁵⁸ *Feist Publications, Inc v Rural Telephone Service Co* (1991) 499 US 340.

⁵⁹ White (n 4), 241.

Carbonell, Jaime G., Ryszard S. Michalski and Tom M. Mitchell, *Machine Learning: An Artificial Intelligence Approach* (Tioga Publishing 1983), 4.

de Cock Buning, Madeleine, 'Autonomous Intelligent Systems as Creative Agents under the EU framework for Intellectual Property' (2016) 7(2) *European Journal of Risk Regulation* 310

De Roza, Jolyn, 'The Impact of Artificial Intelligence on The Culture Industries and Copyright Law' (2020) 20(26) *University of New South Wales Law Journal Student Series* <<http://classic.austlii.edu.au/au/journals/UNSWLawJlStuS/2020/26.html>>

Elgammal Ahmed, Bingchen Liu, Mohamed Elhoseiny, Marian Mazzone, 'CAN: Creative Adversarial Networks, Generating "Art" by Learning About Styles and Deviating from Style Norms' (Conference Paper, International Conference on Computational Creativity, 21 June 2017) <<http://arxiv.org/abs/1706.07068>>

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Ginsburg, Jane, 'People Not Machine: Authorship and What It Means in the Berne Convention' (2018) 49(2) *IIC – International Review of Intellectual Property and Competition Law* 131

Girasa, Rosario, *Artificial Intelligence as a Disruptive Technology* (Palgrave Macmillan, 2020) Ch 8 227-254

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Guadamuz, Andrés, 'Artificial Intelligence and copyright' [2017] (October) *WIPO Magazine* 14

Matulionyte, Rita, 'Australian Copyright Law Impedes the Development of Artificial Intelligence: What Are the Options?' (2021) 52(4) *IIC – International Review of Intellectual Property and Competition Law* 417

McCutcheon, Jani, 'The Vanishing Author in Computer Generated Works: A Critical Analysis of Recent Australian Case Law' (2013) 36 *Melbourne University Law Review* 915, 929

Racter, William Chamberlain and Thomas Etter, *The Policeman's Beard is Half-Constructed* (Warner Books, New York, 1984) <https://www.ubu.com/media/text/racter/racter_policemansbeard.pdf>

Ramalho, Ana, 'Will Robots Rule the (Artistic) World? A Proposed Model for the Legal Status of Creations by Artificial Intelligence Systems' (2017) 21(1) *Journal of Internet Law* 12

Russell, Stuart and Peter Norvig, *Artificial Intelligence: A Modern Approach* (Pearson, 3rd ed., 2010)

Selvadurai, Niloufer and Rita Matulionyte, 'Reconsidering creativity: copyright protection for works generated using artificial intelligence' (2020) 15(7) *Journal of Intellectual Property Law and Practice* 536

Senftleben, Martin and Laurens Buijtelaar, 'Robot Creativity: An Incentive-Based Neighboring Rights Approach' (2020) 42(12) *European Intellectual Property Review* 717

Schalkoff, Robert J., *Artificial Intelligence: An Engineering Approach* (McGraw-Hill, 1990)

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ABSTRACT: *Under the Australian Copyright Law, copyright is attributed to ‘the author of a literary, dramatic, musical or artistic work’, when such work is ‘original’, expressed in a ‘material form’ and connected to the Australian jurisdiction. As in many other civil law and common law systems of the world, this framing has led to a problematic intersection between Intellectual Property (IP) Law the emerging field of Artificial Intelligence (AI) creations – the latter having become, today, less and less distinguishable under the classic standards of authorship, originality and creativity. At the same time, this issue is fraught with several misconceptions that often hamper a correct assessment of the questions it raises. This short paper is aimed at providing a first basic understanding of such technical and legal gaps between AI and the current Australian IP Law framework, calling for ways to address them. In the conclusions, briefly, the current state of play on AI & Creativity will be presented from other countries’ and other fields’ perspectives.*

KEYWORDS: Artificial Intelligence – Intellectual Property – Copyright – Creativity – Australia