1. THE GATEKEEPER DOCTRINES: ORIGINALITY AND AUTHORSHIP IN AUSTRALIA IN THE AGE OF ARTIFICIAL INTELLIGENCE

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ABSTRACT

Copyright law in Australia has long recognised that authorship and originality are companion doctrines. Within Australian copyright law, and that of many other jurisdictions, authorship and originality serve a function of demarcating the boundaries of copyright protection. They designate who and what works are entitled to protection. Where this has been most controversial is in relation to phone directories, television-listings and other compilations that raise the fact-expression dichotomy. Yet what has now occurred in light of the advances in technology is that artificial intelligence can produce works that should lie at the heart of creative expression. Their one deficiency is the lack of a human author. If copyright can look past this deficiency - a huge ask considering that copyright operates on the fundamental premise that human beings have a monopoly on creativity - the law will enter into uncharted waters. Whether this should happen at all is open to some debate. In this paper, I offer a cautious argument in favour of extending copyright protection to works of non-human authorship.

1. INTRODUCTION

Copyright law has long operated on the fundamental assumption that human beings have a monopoly on creativity.[1] It is on this basis that the incentive theory informs many of the domestic laws of copyright.[2] However, the emergence of artificial intelligence (AI) as a serious player in the field of creativity appears to have the potential to dramatically undermine this assumption.[3] Moreover, AI looms as a credible replacement for the human author in a number of fields. For example, the rise of automated journalism has resulted in the displacement of human authors in a field where copyright law often served as an ancillary means to protection for productive outputs.[4] Likewise, the Jill Watson technology,[5] which served a teaching and administrative function in courses as Georgia Institute of Technology (Georgia Tech) in the United States, highlights the

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[1] Daniel Gervais, 'The Machine as Author' (2019) 105 Iowa Law Review 2, 4. As Gervais notes, 'machines are increasingly good at emulating humans and laying siege to what has been a strictly human outpost: intellectual creativity.'

[2] *IceTV Pty Ltd v Nine Network Pty Ltd* (2009) 239 CLR 458, 474 (French CJ, Crennan and Kiefel JJ) (*IceTV*). See also *Global Yellow Pages Ltd v Promedia Directories Pte Ltd* [2017] SGCA 28.

[3] See Gervais (n 1). See Andre Guadamuz, 'Do Androids Dream of Electric Copyright? Comparative Analysis of Originality in Artificial Intelligence Generated Works' (2017) 2 Intellectual Property Quarterly 169. See also Jane Ginsburg and Luke Budiardjo, 'Authors and Machines' (2019) 34 Berkeley Technology Law Journal 1, 2. See

further, Annemarie Bridie, 'Coding Creativity: Copyright and the Artificially Intelligent Author' (2012) 5 Stanford Technology Law Review 5.

[4] See Matt Carlson, 'The Robotic Reporter' (2015) 3(3) Digital Journalism 416. See also David Caswell and Konstantin Dorr, 'Automated Journalism 2.0: Event-driven narratives' (2018) 12(4) Journalism Practice 477. Caswell and Dorr describe the evolving use of natural language generation (NLG) technology within journalism to produce useful text with commercial applications within the news industry. What emerges from this process is a state of augmentation and supplementation within the market for journalistic labour.

[5] Bobbie Eicher, Lalith Polepeddi and Ashok Goel, 'Jill Watson Doesn't Care if You're Pregnant: Grounding AI Ethics in Empirical Studies' (2018) Proceedings of the 2018 AAAI/ACM Conference on AI, Ethics and Society 88. See also Ashok Goel and Lalith Polepeddi, 'Jill Watson: A Virtual Teaching Assistant' (2016) Georgia Institute of Technology Discussion Paper <https://smartech.gatech.edu/bitstream/handle/1853/59104/goelpolepeddi-harvardvolume-v7.1.pdf> accessed 11 December 2019.

potential for AI technology to take on roles that were previously performed by human beings.[6] Similarly, the 'Next Rembrandt' project demonstrates the capacity for AI technology to generate art that can attract significant interest from prospective buyers.[7]

Using Australian copyright law as its basis, this paper considers whether advances in AI technology mean that authorship and originality should no longer play a gatekeeper function within copyright law. This idea is self-evidently controversial. There is resistance to the idea that copyright can accommodate works of non-human authorship.[8] Moreover, the entrenched position of Australian copyright law, as drawn from the *Copyright Act 1968* (Cth),[9] clearly precludes extending protection to works of non-human authorship.

What is then required is a radical redrawing of the rules of copyright. This is permissible, but only on the basis that the rules of international copyright law – namely, the Berne Convention for the Protection of Literary and Artistic Works 1886[10] (the Berne Convention) and the Agreement on Trade-Related Aspects of Intellectual Property Rights[11] (TRIPS Agreement) – do not prohibit extending copyright protection to works of non-human authorship. Professor Ricketson's masterful analysis of the Berne Convention has clearly set out

that the Berne Convention does not contemplate non-human authorship.[12] To the extent that the TRIPS Agreement incorporates the relevant articles of the Berne Convention, this position holds true as well for the primary intellectual property treaty under the World Trade Organization treaties. However, the fact that Berne and TRIPS do not contemplate non-human authors does not necessarily preclude domestic law from including non-human authorship within the umbrella protection of copyright.

There is then a free space for jurisdictions, such as Australia to rethink their copyright laws given the rapid advances in AI technology. However, this will have dramatic consequences for the doctrines of originality and authorship. Even within a bifurcated copyright system – with one set of rules for human authors and another for AI authors – many of the key precepts of originality and authorship will fracture. Copyright in this context would be unrecognisable. At the very least, it would risk returning copyright in Australia to a state of existence predating the Copyright Act 1911 (UK) within which originality was not a stated requirement of protection.[13] The path forward is therefore less than certain. Already, there are significant voices emerging in opposition to the prospect of AI authorship within copyright law.[14]

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[6] Todd Leopold, 'A professor built an AI teaching assistant for his courses — and it could shape the future of education' *Business Insider* (New York, 23 March 2017) <https://www.businessinsider.com/a-professor-built-an-ai-teaching-assistant-for-his-courses-and-it-could-shape-the-future-of-education-2017-3?IR=T> accessed 11 December 2019. The Jill Watson technology took on online work that would otherwise have had to have been done by a human being.

[7] See Shlomit Yanisky-Ravid, 'Generating Rembrandt: Artificial Intelligence, Copyright, And Accountability in the 3A Era – the Human-like Authors Are Already Here – A New Model' (2017) Michigan State Law Review 659, 662. See also 'The Next Rembrandt' (2019) <https://www.nextrembrandt.com/> accessed 11 December 2019.

[8] See Gervais (n 1). See also Ginsburg and Budiardjo (n 3).

[9] For further discussion see below n 16-19.

[10] Berne Convention for the Protection of Literary and Artistic Works 1886 (adopted 9 September 1886, entered into force 5 December 1887) 1161 UNTS 3.

[11] Agreement on Trade-Related Aspects of Intellectual Property Rights (entered into force 1 January 1995) 1869 UNTS 299.

[12] Sam Ricketson, 'People or Machines: The Berne Convention and the Changing Concept of Authorship,' (1991) 16(1) Columbia VLA Journal of Law and the Arts 1.

[13] Australia only gained its own copyright legislation in 1968. Prior to this time the UK statutes served as the imperial copyright laws within the colonies. The most notable 'originality' case preceding the 1911 Act is *Walter v Lane* [1900] AC 539. Originality had been recognised within the common law before entering into the statute book in the 1911 Act. See *IceTV* (n 2) 33.

[14] See above n 7. It is beyond the scope of this article to provide a substantial response to the objections raised by other authors. Instead, in this piece, noting the existence of counter-arguments

In the author's view, the only feasible response to the objections raised by other authors is to offer a truncated copyright model that might serve AI technologies. This model, sketched out in slightly more detail below, would offer a minimal level of disruption to the existing copyright law. Yet it would serve as a recognition that the balance of power between the human author and the intelligent algorithm is shifting. While the decisive event or technology that substantially replaces human labour in the field of creativity has yet to come, it is increasingly likely that it will happen and that such a development will provide ample economic and productive opportunities for some. It makes sense then that copyright should shift its rules – or at least re-examine them – lest it lose its primacy in the sphere of creative outputs to other forms of law such as contract and unfair competition.

Part I of this paper has set out the basic context and aims of this paper. Part II addresses the originality and authorship doctrines as they presently stand in Australia. From this, four propositions arise. Each of these has differing implications for works generated by AI programs. Part III of this paper considers the scope of a proposed scheme and the arguments in favour of extending protection to works of non-human authorship. Part IV considers whether those arguments can prevail in light of the difficult policy and doctrinal questions that would then arise. In brief, I conclude that we should seek to find a path forward that includes AI within the parameters of copyright.[15]

2. ORIGINALITY AND AUTHORSHIP UNDER AUSTRALIAN COPYRIGHT LAW

Two cases cumulatively represent the current Australian position on originality and authorship. These are the decision of the High Court of Australia in *IceTV Pty Ltd v Nine Network Pty Ltd*[16] and the decision of the Full Court of the Federal Court in *Telstra Corporation Limited v Phone Directories Company Pty Ltd*.[17] As *IceTV* was a case concerned with infringement, rather than subsistence per se, there is an element of doubt as to whether the statements of the High Court in *IceTV* definitively represent the Australian position on originality.[18] However, as originality must have a unified and consistent meaning under the *Copyright Act*, it stands to reason that *IceTV* is binding with regard to subsistence.

In *IceTV*, an Australian television network, Channel Nine, sued a company that was producing aggregate guides of its television guides. Channel Nine was unable to demonstrate that *IceTV* had taken an original part of the guides that it had reproduced. In *Phone Directories*, an Australian telecommunications company, Telstra, sued over the reproduction of their white pages and yellow pages phone directories. Telstra was ultimately unsuccessful in *Phone Directories* on the basis that its directories were produced primarily by the operation of computer programs with human input taking place only at the initial stages of production. The existence of some human curation of the directories at the later stages was not sufficient to amount to authorship. As

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and their basic nature, I will put forward the case for including AI works within the rubric of copyright protection.

[15] There is a further choice to be made here, which is beyond the scope of this paper to address in detail. Namely, the outputs of AI could be protected under Part III of the *Copyright Act* as works, or under an analogous scheme, in which case originality and authorship must be addressed as they are here in this paper. Alternately, the Australian *Copyright Act* does protect subject matter, wherein a human 'maker' directs a mechanical process that results in a sound recording, cinematograph film or broadcast under Part IV of the Act. The concept of 'maker' is surprisingly under-explored in Australian copyright law, but as it involves driving control of the enterprise, something that does not occur in an AI context for any human, and, as AI produces outputs that are exactly

like Part III works, I have directed my analysis at authorship and originality in the context of works.

[16] *IceTV* (n 2).

[17] *Telstra Corporation Limited v Phone Directories Company Pty Ltd* [2010] FCAFC 149 (*Phone Directories*). I have addressed both the *IceTV* and *Phone Directories* in substantially more detail in another publication. See Dilan Thampapillai, 'If Value Then Right?' Australian Intellectual Property Journal (forthcoming). In this paper, I offer a shorter summary of both decisions so as to explore their implications in the context of the emerging AI technologies.

[18] Sam Ricketson, 'Common Law Approaches to the Requirement of Originality' in Ng, Bently and D'Agostino (eds), *The Common Law of Intellectual Property* (Oxford University Press, 2010) 246.

Gordon J noted in her decision at first instance, the entire system was designed to minimise human involvement.[19]

For present purpose, the significance of both *IceTV* and *Phone Directories* lies in the series of propositions that emerge from the judgments. There are four propositions that warrant attention in the context of AI.

First, originality exists in order to serve the social contract that is contained within copyright protection.[20] In the lead judgment in *IceTV*, French CJ, Crennan and Keifel JJ stated:

> In both its title and opening recitals, the Statute of Anne of 1709 echoed explicitly the emphasis on the practical or utilitarian importance that certain seventeenth century philosophers attached to knowledge and its encouragement in the scheme of human progress. The 'social contract' envisaged by the Statute of Anne, and still underlying the present Act, was that an author could obtain a monopoly, limited in time, in return for making a work available to the reading public.[21]

The lead judgment in *IceTV* made further reference to this social contract in addressing the expression-fact dichotomy. There, their Honours stated:

> Copyright, being an exception to the law's general abhorrence of monopolies, does not confer a monopoly on facts or information because to do so would impede the reading public's access to and use of facts and information. Copyright is not given to reward work distinct from the production of a particular form of expression.[22]

These statements were cited with approval in *Phone Directories,* and formed the basis for the Federal Court of Appeal's reasoning vis-à-vis authorship and originality.[23] This does beg the question of whether the concepts of authorship and originality would have any value unless they were in place to serve as qualifying (or gatekeeping) requirements with respect to the social contract of copyright. Where AI is concerned, society would still have the benefit of the creative output, but without any immediate human author to reward.[24]

Second, originality requires independent intellectual effort,[25] but is not solely defined by a high degree of skill and labour.[26] *IceTV* represented a turning point in Australian copyright law. Whereas the US Supreme Court in *Feist Publications Inc v Rural Telephone Service Co Inc*[27] decisively rejected the sweat of the brow theory of copyright protection, the High Court in *IceTV* merely downgraded the role of originality within the context of originality. However, in addressing the element of independent intellectual effort, the High Court in *IceTV* tied it to the creation of an output within which copyright could exist. As such, the preparatory work for the creation of a copyright work, such as the development of skill or the application of labour, is of diminished importance in relation to originality. Instead, what matters is that a human being is engaging in some intellectual endeavour, but not slavishly copying another work,[28] in order to produce a copyright work.

Third, as a doctrinal concept within copyright, authorship denotes human authorship. This much was implicit in *IceTV* where the lead judgment referred to 'the classical notion of an individual author.'[29] Similarly, the concurrence in *IceTV*

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[19] *Phone Directories* (n 17) 92.

[20] See Trotter Hardy, 'Property (and Copyright) in Cyberspace' (1996) University of Chicago Legal Forum 217, 220-228. Hardy describes the granting of copyright as being not so much the conferral of a property right, but rather the assurance that unauthorised copying will be limited.

[21] *IceTV* (n 2) 25.

[22] *IceTV* (n 2) 28.

[23] [2010] FCAFC 149, 134.

[24] This is explored below. See the discussion below nn 34-50.

[25] *IceTV* (n 2) 47.

[26] ibid 48.

[27] *Feist Publications Inc v Rural Telephone Service Co Inc* (1991) 499 US 340.

[28] *IceTV* (n 2) 33. *Robinson v Sands & McDougall Pty Ltd* (1916) 22 CLR 124, 132-133 (Barton J); *Autodesk Inc v Dyason* (1992) 173 CLR 330, 347 (Dawson J); *Data Access v Powerflex Services* (1999) 202 CLR 1, 16 (Gleeson CJ, McHugh, Gummow and Hayne JJ).

[29] *IceTV* (n 2) 23.

made repeated reference to individual and 'person.'[30] The requirement of human authorship was explicitly addressed in *Phone Directories*, where Yates J stated:

> In relation to works, an author is, under Australian law, a human author. So much is made clear (if it be doubted) by Section 33 of the Act, which conditions the duration of copyright on the year of the author's death. Section 34, which deals with the duration of copyright in anonymous and pseudonymous works, and which conditions duration on first publication (rather than the death of an author), does not compel a different conclusion. See also the presumptions created by Section 129 of the Act which make plain that the concept of authorship in respect of works means human authorship.[31]

Self-evidently, a requirement of human authorship is an impermeable barrier to copyright protection for works created by AI under the Australian *Copyright Act* in its present form.

There is one slightly discordant note within this sphere. In *Data Access v Powerflex Services*,[32] a decision that predates *IceTV*, the High Court of Australia held that copyright, as applied to a literary work, existed in a data table known as the Huffman Compression Table even though the Huffman algorithm authored the table itself. In *Data Access*, Gleeson CJ, Gummow, McHugh and Hayne JJ stated:

> The skill and judgment employed by *Dataflex* was perhaps more directed to writing the program setting out the Huffman algorithm and applying this program to a representative sample of data than to composing the bit strings in the Huffman table. Nevertheless, the standard *Dataflex* Huffman table emanates from *Dataflex* as a result of substantial skill and judgment.[33]

The argument here appears to be that as originality existed in the *Dataflex* program, there would then be originality in the outputs emerging from its operation. The reasoning of the Court in *Data Access* would appear to be at odds with the later decisions of *IceTV* and *Phone Directories*.

Fourth, in *Phone Directories*, human authorship in the context of originality was tied to control.[34] In the Full Court, Perram J stated:

> … there will be cases where the *person* operating a program is not controlling the nature of the material form produced by it and in those cases that person will not contribute sufficient independent intellectual effort or sufficient effort of a literary nature to the creation of that form to constitute that person as its author: a plane with its autopilot engaged is flying itself. In such cases, the performance by a computer of functions ordinarily performed by human authors will mean that copyright does not subsist in the work thus created.[35]

This is a relevant point given the emergence of collaborative works involving human authors and AI. The argument that human authors and AI technologies could be joint authors begins to flounder here. The problem is simply that AI operates without control from human beings, thereby obviating the potential for any collaboration. Moreover, a black box problem emerges that frustrates any attempt at control of AI.[36] As Rich notes, 'machine learning tends to create models that are so complex that they become 'black boxes,' where even the original programmers of the algorithm have little idea exactly how or why the generated model creates accurate predictions.'[37]

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[30] ibid 95 - 105.

[31] *Phone Directories* (n 17) 134.

[32] *Data Access* (n 28).

[33] ibid 123.

[34] *Phone Directories* (n 17) 118.

[35] ibid (emphasis added).

[36] See Michael Rich, 'Machine Learning, Automated Suspicion Algorithms, and the Fourth Amendment' (2016) 164 University of Philadelphia Law Review 871, 886.

[37] ibid. See also Ginsburg and Budiardjo (n 3) 61.

3. EXTENDING COPYRIGHT PROTECTION TO WORKS OF NON-HUMAN AUTHORSHIP?

Having established that the current state of the law does not support copyright protection in works of non-human authorship, it is pertinent to consider whether there are compelling reasons to change the law. Two necessary steps must be undertaken here. The first step is to map out the rough parameters of a protection scheme. The second is to assess that scheme against (i) the purpose of copyright law and (ii) the emerging arguments in support of protecting works of non-human authorship. As noted above, what emerges from that process is not a compelling case for protection, but rather an argument grounded in inevitability. What is missing here is the threshold event that would give rise to a paradigm shift in our thinking about AI. That is, a technological development has yet to occur that would represent a tipping point wherein AI moves from being a mere tool to being something akin to the master, thereby comprehensively replacing a substantial tranche of human labour. In the absence of such an event or development, the argument for extending copyright protection to works of non-human authorship is somewhat speculative. We cannot be entirely sure what will transpire. Instead, we have to assess the trajectory of AI and position copyright law accordingly. This approach seems sensible in theory, but it is not without risks.[38]

As it stands, all works of non-human authorship are presumptively in the public domain in Australia. Protection under copyright can take a number of different forms. First,

the duration period can be shorter or the same as it is for human beings. The duration period could be set as low as five to ten years. This would calibrate to immediate market value, but little more. The benefit of a short duration period is that the new model of AI copyright protection would give rise to significantly less interference with the existing norms of copyright law. There would be lesser potential for AI authors to crowd out human authors in creative markets, as the former would soon lose their copyrights. Second, protection gives rise to the question of liability for infringement. In turn, the rules on infringement could be modified to take into account the existence of non-human authorship. I would suggest that only direct copying and substantively exact duplication should give rise to liability for infringement.[39] Altogether, this would be a very thin model of copyright protection.

As it stands, some jurisdictions have already allocated copyright protection to the programmer in instances where a computer program generates a work. This is the case in India, Ireland, New Zealand, Hong Kong (SAR) and the UK.[40] Notably, a court in Shenzhen has ruled that AI-generated news articles may obtain copyright protection under Chinese law.[41] There is then at least some support from other jurisdictions for consider an AI copyright scheme.

Copyright law's purpose is open to some debate.[42] It would appear that in the context of works it is a law to protect authorship.[43] However, as plurality observation in *IceTV*

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[38] Namely, that the law is designed for technology or a market that never comes to pass.

[39] See Robert Yu, 'The Machine Author: What Level of Copyright Protection is Appropriate for Fully Independent Computer Generated Works' (2017) 165 University of Pennsylvania Law Reports 1241, 1268-1269. Yu suggests that infringement should only occur in the context of AI works where there is direct copying.

[40] For a discussion of comparative law on this topic see Andres Guadamuz, 'Artificial Intelligence and Copyright' (WIPO Magazine, October 2017) <http://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html> accessed 11 December 2019.

[41] See Shenzhen Tencent v Yinxun reported in Kan He, 'Another decision on AI-generated work in China: Is it a Work of Legal Entities?' (29 January 2020) <http://ipkitten.blogspot.com/2020/01/another-decision-on-ai-generated-work.html> accessed 11 December 2019.

[42] Gervais (n 1) places that purpose solely in the realm of authorship. Other commentators have noted the dominant presence of the publishing industry. See David Brennan, 'The Root of Title to Copyright in Works' (2015) Intellectual Property Quarterly 289. See also Ronan Deazley, *On the Origin of the Right to Copy* (Hart Publishing, 2004).

[43] *Phone Directories* (n 17) 134.

suggests,[44] this is motivated by a reciprocal exchange. The utilitarian bargain that copyright seeks to foster – monopoly rights in exchange for creative and useful works – would appear to be the driving purpose of the law. Whether expanding copyright protection to include works of non-human authorship would frustrate that purpose is considered below. Here, however, that utilitarian bargain is a useful starting point for the two arguments that support protection of AI copyright.

The first argument centres on investment. The basic idea is that copyright in code is insufficient and that unless developers are given copyright in the outputs created by AI technologies, there will be insufficient motivation for them to invest in AI itself. This investment and incentives argument stands one step removed from the putative copyright work. As is well known, under the existing incentive theory, the author is incentivised to create a work in exchange for a temporary monopoly. In the context of AI, the technology developer is incentivised to invest in creating new forms of AI because the developer or end user may want copyright protection in the outputs that then emanate from the operation of the AI. Here, copyright becomes something of an 'investment protection scheme.'[45]

The investment argument is tenuous. The Jill Watson technology was not developed to secure copyright in her output. Instead, she was designed as a labour-saving device to attend to routine queries. Even in the field of journalism, QuakeBot,[46] used by the LA Times, and, ReporterMate,[47] used by the Guardian Australia, were designed to attend to formulaic stories. Copyright matters here, in that the newspapers would presumably be affronted if their content was simply taken by a third party, but it is a by-product of the

operation of the system rather than an end in itself. The investment in the technology was designed to free up existing resources for more productive purposes in circumstances where functionality of journalistic endeavour was the primary concern and copyright protection was a significantly lower order priority. Notably, in the account of ReporterMate, the Guardian Australia describes the technology as an efficiency-promoting device.[48] At best, copyright is an ancillary concern. Nonetheless, there is significant potential for copyright to serve as a useful regime once the content generated by AI proves to be of value.

The second argument for protecting works of non-human authorship is that copyright serves as a base property to facilitate useful exchanges. For example, the use of Creative Commons licences by the Australian Government to licence out datasets to the public via the government entity Data.gov.au[49] relies solely on the presence of copyright in the datasets. However, as the datasets are produced using big data analytics, it is unlikely that any copyright exists in them at all. As such, any attempts by the Australian Government to control licensee behaviour would likely be frustrated by the unenforceability of the licences.[50] Extending copyright here cures an immediate problem. Likewise, where automated journalism and other creative endeavours are concerned, copyright serves as the muscle to enforce contractual obligations.

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[44] *IceTV* (n 2) 25.

[45] Gervais (n 1) 30.

[46] Yu (n 39) 1246-1247.

[47] Nick Evershed, 'Why I created a robot the write news stories' *Guardian Australia* (Sydney, February 1, 2019) <https://www.theguardian.com/commentisfree/2019/feb/01/why-i-created-a-robot-to-write-news-stories> accessed 11 December

2019. Evershed describes ReporterMate as 'a system that can automate the analysis and writing of these formulaic stories.'

[48] ibid.

[49] See further: Data.gov.au, 'data.gov.au – beta' (2019) <www.data.gov.au> accessed 11 December 2019.

[50] If there is no copyright, then on a contract level there is no consideration. See *Placer Development Ltd v Commonwealth* (1969) 121 CLR 353.

4. WHITHER THE GATEKEEPERS?

Even if one were to accept the case for extending copyright protection to works of non-human authorship, some particularly tricky questions remain. Three will be addressed here. First, would the purposes underpinning copyright law be frustrated by the removal of the authorship and originality requirements in relation to works? Second, can copyright law withstand the doctrinal incoherency of having one scheme in place for human beings and an entirely different scheme running for AI technology? Third, to what extent should it even matter that AI technology, with or without copyright protection, will continue to increasingly chip away at the role of human beings in the labour market for copyright works?

The plurality's statement in *IceTV*, clearly indicates that the statutory monopoly conferred by copyright protection is a result of a social contract rather than the cause for one. That is to say, that the interests of the author are only accommodated because he or she provides something of value to the society, which provides the protection through its laws.[51] Copyright under the Act might be termed an 'op-out system' wherein the owner presumptively has protection under the law, but this position is the result of Parliament recognising that authors can enhance the welfare of society and thereby putting the default position of the law in a shape to reflect this view. Put simply, copyright protection is not a naturally occurring thing, it is a deliberate policy choice.

If works of non-human authorship can deliver similar value to society then it makes sense that some measure of protection should be afforded. The difference lies in the way in which the incentive argument works as between human and non-human authors. The traditional incentive theory posits that human authors are incentivised to create more works that are useful by the lure of copyright protection.[52] However, an algorithm requires no incentive. The technology developer stands one-step removed from the production of the creative work that AI produces.

A further problem arises around control in the context of originality. Authorial decisions, at least all of the decisive ones, are taken by the AI program as part of its normal operation. Further, this function is unintelligible to the technology developer or the user because of the black box problem.

A decision has to be made here. Do we accept the function of the AI program, replete with the black box problem, as a routine feature of the running of AI technologies and thereby no barrier to copyright protection? Alternately, is the lack of transparency with regard to authorial decisions too problematic to warrant copyright protection?

The importance of control within originality, and the definable nature of authorial activities, would be undermined by AI's black box problem. In *IceTV*, Gummow, Hayne and Heydon JJ observed, '[t]he subject matter of the Act now extends well beyond the traditional categories of original works of authorship, but the essential source of original works remains the activities of authors.' Consequently, anything that can be protected by copyright within the confines of Part III of the Act must adhere to this authorship requirement. In Australia, the *Copyright Act* does observe a distinction between Part III works and Part IV subject matter. Where Part IV subject matter is concerned, a human being as 'maker' creates either a sound recording, a cinematograph film or a broadcast. There is here a utilisation of mechanical means to create copyright protected subject matter, but the human being is driving the process. Control thus remains a concept within Part IV subject matter as well. The same is just not true of AI technologies. Where AI is concerned, the human being may have a causative role, but they do not drive the process and make the key authorial choices. It follows then that AI has the potential to put doctrinal strain on both Part III works and Part IV subject matter.

Taken as a whole, the emergence of a parallel scheme within the *Copyright Act* for works of non-human authorship has the clear potential to render vast tracts of the existing law on

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[51] *IceTV* (n 2) 25.

[52] This idea itself is highly contested. See Sara Stadler, 'Incentive and Expectation in Copyright,' (2006) 58 *Hastings Law Journal* 433.

originality and authorship otiose. The decisions in *IceTV* and *Phone Directories* would be practically redundant. The plaintiffs in those or similar cases could simply rely on a work-around scheme involving AI. In turn, this would further strain the application of the law on human subjects. Whether a shorter version of duration would ameliorate, this problem is unclear.

A further problem lies in the way that AI will supplant some human labour. Indeed, even if automated journalism is labour saving, it takes away the need to employ a journalist to do routine tasks. The same can be said for the Jill Watson technology. Copyright has never been entirely divorced from the realities of the industries that rely upon it, but never has it been entirely subservient to them. Yet, the base objection that some might raise is that a copyright law that encompasses AI technology could become both a de facto unfair competition law and a tool for furthering human inequality.

5. CONCLUSIONS

Any moves to extend copyright protection to works of non-human authorship will have significant ramifications for authorship and originality. The qualifying role that these doctrinal concepts currently serve under sections 32, 33, 35 and 36 of the *Copyright Act* will cease to function as it once did. What lies beyond that is extremely uncertain. Nevertheless, the continued emergence of AI technologies, and the commercial and productive potential that they offer, demands a rethink of the rules of copyright law. The questions which are difficult to resolve are whether the doctrinal incoherency that might result can be overcome and whether, when the law becomes a tool by which some human authors are tacitly supplanted, it can retain its place and purpose. Even so, it is important that the law should not lag behind the rapid advances of technology. If copyright law fails to seize the moment and to respond to advances in AI, then those actors who are concerned with the creative use of AI will likely revert to other legal mechanisms such as contracts or technology protection measures to secure some return on their investments. Copyright law has to maintain its relevance

in this area, but it must strive to do so in a manner that addresses many of the issues raised in this paper.

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