**IN THE HIGH COURT OF THE REPUBLIC OF SINGAPORE**

**Collectors Inc. Pte. Ltd.**

**v**

**Opportunity Venture Pte Ltd**

**[2021] SGHC 123**

15 September 2021 Judgment reserved.

**Peter Turing J:**

**Introduction**

1. These proceedings arise out of a civil suit (HC/S 1501 of 2021) brought by Collectors Inc. Pte. Ltd. (the “Plaintiff”), against Opportunity Venture Pte Ltd (the “Defendant”), for copyright infringement.

**Background**

1. The Plaintiff is in the business of owning, managing, and reselling rare art and antiques. In the year 2020, the Plaintiff’s management decided to expand its venture into collecting non-fungible tokens (“NFTs”).
2. NFTs are digital assets that are typically powered by smart contracts, created on an immutable ledger such as a blockchain. A key feature of NFTs is that they are often used to represent other assets, most commonly digital artworks and photographs.
3. On 20 August 2020, a renowned company in the business of creating and selling NFTs, Trend Predictor Pte Ltd (“TP”), released an exclusive NFT (“TP NFT”) of a watercolour image of a futuristic looking robot-computer with hot press machines attached to the end of tubed arms (“Underlying Image”).
4. According to the advertisements for the sale of this NFT, the Underlying Image was created entirely by a computer program (AI-Roger or “AIR”) that was developed by a team of talented programmers employed by TP. AIR initially served as an assistant to recognise current trends relating to NFTs. AIR has self-improvement capabilities through the use of a machine-learning method known as “reinforcement learning”. TP’s team of programmers later fine-tuned the programme so as to include a “reward” system to “incentivise” AIR to pick the images that were in demand. This was done in a bid to ensure that AIR would develop itself so as to generate results with the greatest consistency.
5. However, with further programming, AIR advanced into being able to formulaically generate creative images that became the subject of successful NFTs created by TP based on these generated images. The images created by AIR were so popular, that AIR itself became hugely popular. As a result, the Internet was populated with creative images and artistic impressions depicting AIR which became trendy. AIR also became known as the “*Khaleesi of the NFT,* *Mother of Trends*”. AIR also began generating images of itself, which resulted in the creation of the Underlying Image
6. The Plaintiff purchased the TP NFT from TP on 22 August 2020 for 98 Ather (the native token used on Athereum, the blockchain containing the NFT) which was valued at approximately $500,000 then. The relevant terms of the sale, as specified within the smart contract relating to the proprietary rights were as follows:

“*We know - this is exciting! You now own this one and only, exclusive, non-fungible token. You, and only you, now have the licence to print the Khaleesi artwork on tee shirts, or* *if you’d like to just post the artwork on your Instagram account.”*

(“NFT Term”)

1. Similar to TP, the Defendant is in the business of creating and selling NFTs. On 1 September 2020, the Defendant released what it called the “Grayon edition” (“Grayon NFT”), in which 100 NFTs were offered for sale. The underlying digital asset of the Grayon NFT was a greyscale copy of the Underlying Image with the words “Grayon Edition”, stylised in a cursive font, placed at the top right hand corner.
2. On 7 September 2020, the Plaintiff commenced civil suit HC/S 1501 of 2021 (“Suit 1501”) against the Defendant, claiming an infringement of copyright in the Underlying Image by the Defendant under section 31(1) the Copyright Act (Cap 63, 2006 Rev Ed) (“the Act”).
3. I directed the parties to appear before me at a hearing to determine certain questions which were suitable for determination without a full trial and which would fully determine the entire matter in line with Order 14 Rule 12 of the Rules of Court.
4. The Plaintiff submitted that:
	1. TP’s employees were the authors of the Underlying Image and by virtue of section 213(6) of the Act, TP as the employer was the owner of the copyright in the Underlying Image;
	2. As the Underlying Image was generated as a result of the skilled labour of TP’s employees in the programming of TP, the Underlying Image is original;
	3. By virtue of the purchase of the NFT and the NFT Term, the Plaintiff is the owner of the Underlying Image, or in the alternative the exclusive licensee of the Underlying Image, and therefore has *locus standi* to bring and maintain the action; and
	4. Given that the Plaintiff is either the owner or exclusive licensee in the Underlying Image, the Defendant’s offering for sale of the Grayon NFT with underlying digital asset without a licence from the Plaintiff has infringed the Plaintiff’s exclusive rights in the Underlying Image and has caused the Plaintiff to suffer loss and damage.
5. The Defendant submitted that:
	1. TP’s employees were not the authors of the Underlying Image as they had not exerted any control over the final form of expression of the Underlying Image;
	2. As the Underlying Image lacked an author, the Underlying Image must necessarily also lack the originality necessary to sustain copyright; and
	3. In any case, the Plaintiff does not have *locus standi* to bring the action as the Plaintiff is neither the owner nor the exclusive licensee within the Act.
6. At the conclusion of the hearing, I held that:
	1. The TP employees were not the authors of the Underlying Image;
	2. Given that the Underlying Image lacked an identifiable author, the Underlying Image was not original and therefore it could not sustain copyright; and
	3. Necessarily, I found that there was no infringement of the Plaintiff’s copyright by the Defendant as no copyright subsisted in the Underlying Image. Nevertheless, on the assumption that copyright subsists in the Underlying Image, the Plaintiff did not have *locus standi* under the Act to bring a claim against the Defendant.
7. The Plaintiff has appealed against my holding and I set out my written grounds of decision.

**Decision**

***Copyright infringement***

1. It was not disputed that the Underlying Image falls under the category of artistic works in the Act. Whether the Plaintiff can claim ownership of copyright over the Underlying Image turns on the question of whether they are “original artistic works” within the meaning of Section 27 of the Act.
2. In order for copyright to subsist in the Underlying Image, the Plaintiff must prove the following:
	1. Firstly, that the requirements of either limb (c), (d), or (e) of section 27(2) of the Act, which the Court of Appeal has confirmed are disjunctive requirements (*Asia Pacific Publishing Pte Ltd v Pioneers and Leaders (Publishers) Pte Ltd* [2011] 4 SLR 381 (“*Asia Pacific Publishing*”) at [48]) are met; and
	2. Secondly, the work in question must be original.
3. There was no dispute on whether the Underlying Image was first published in Singapore. Therefore, I turned my mind to the issue of whether or not they were original.
4. I took as my starting point the position laid down by the Court of Appeal in *Asia Pacific Publishing*, which at [38] reiterated the key principles discerned in *Feist Publications v Rural Telephone Service Company Inc* 499 US 340 (1991), namely that the *sine qua non* of copyright is originality, and that “originality simply means that the work was independently created by the author and that it possesses some minimal degree of creativity, the level of creativity required being extremely low”.
5. More importantly, the Court of Appeal in *Global Yellow Pages Ltd v Promedia Directories Pte Ltd* [2017] 2 SLR 185 (“*Global Yellow Pages (CA)*”) clarified at [28] that prescribing a minimum level of sufficient intellectual effort would be “practically impossible” and the focus should instead turn to characterising the human acts and decisions made in the creation of the works. It will ultimately be a question of fact and degree whether such acts and choices demonstrate sufficient intellectual effort and bear a sufficient causal nexus with the final work such that it attracts copyright (*Global Yellow Pages (CA)* at [28]-[30]).
6. The Plaintiff submitted that as the Underlying Image possessed the requisite level of creativity, it was thus original, and capable of sustaining copyright that rightly vested in TP by virtue of section 213(6) of the Act with TP’s employees as their authors. The Plaintiff further submitted that the Plaintiff owned such copyright by virtue of its purchase of the TP NFT and the NFT Term.
7. The Defendant, however, argued that the test for whether the Underlying Image was original should not be whether the Underlying Image appeared novel or creative, but rather whether an identifiable human author had provided that intellectual creativity.
8. In support of this proposition, the Defendant cited *Telstra Corporation Limited v Phone Directories Company Pte Ltd* [2010] FCAFC 149 (“*Telstra*”) at [32] (approved of by the Court of Appeal in *Asia Pacific Publishing* at [74] – [75]): “The question of whether copyright subsists is concerned with the particular form of expression of the work. … *Start with the work. Find its authors*.” The Court of Appeal in *Asia Pacific Publishing* went on to state at [75] that “An author must first be identified before the work in question can be deemed to be original.”
9. The Defendant concluded that as no human author of the Underlying Image could be identified, it could therefore not be original.

Who, if anyone, authored the Underlying Image?

The Plaintiff’s submissions

1. The Plaintiff submitted that “the mere fact that a literary work is reduced into its final form of expression through the instrumentality of computer software does not divorce the work’s origination from the person operating the machine” (per Wei J, *Global Yellow Pages Ltd v Promedia Directories Pte Ltd* [2016] 2 SLR 165 (“*Global Yellow Pages (SGHC)*”) at [253]). Based on that logic, the Plaintiff argued that TP had ultimate control over the computer software in the same way that a painter controlled his brush, thus making its programmers the authors of the Underlying Image.
2. The Plaintiff further argued that there could not be any such thing as a computer-generated work. Citing James Grimmelmann, *There’s No Such Thing as a Computer-Authored Work — And It’s a Good Thing, Too*, 39 Colum. J. L. & Arts 403 (2016) (“*Grimmelmann*”), the Plaintiff claimed that all creative processes were essentially algorithmic: that it involved the selection of, and then adherence to, various rules of composition, and that the creator was whoever decided to adopt various rules and processes, and therefore “[t]o say that an author creates intuitively is simply to say that neither she nor we have ready access to the algorithm she follows” (*Grimmelmann*).

The Defendant’s submissions

1. The Defendant argued that TP programmers had not chosen or designed the rules by which the Underlying Image was generated. The relevant capability (to pick out trends and generate images after) had been intrinsically self-programmed by AIR. While the TP programmers may have trained AIR in learning, by creating the mechanisms, such as to evaluate its own performance and be incentivised to improve, once those mechanisms were in place, AIR became an autodidact capable of learning all the relevant skills by itself. The bulk of AIR’s code that enabled it to produce the Underlying Image had not been written by the TP’s programmers, and in fact, the TP programmers could not have written such code without the said machine-learning component. The Defendant argued that it is therefore unacceptable that the Plaintiff should be allowed to claim that the TP programmers exercised control over a process that they could not actually replicate on their own.
2. The Defendant cited *Kelley v Chicago Park District* 635 F.3d 290 (7th Cir. 2011), where a gardener claimed to have created a garden and the court found that, due to the plethora of forces outside of the gardener’s control, the final product originated “in nature, and not in the mind of the gardener”. The Defendant argued that likewise, the actual form and expression of the Underlying Image had originated not in the mind of the TP programmers but rather, in whatever mind the computer program may be said to have.
3. The Defendant further submitted that the Plaintiff thus cannot rely upon *Global Yellow Pages (SGHC)*, where Wei J noted that “the crucial question is the degree of control that the putative authors exercise over the computer software in shaping the final form of expression” (at [255]). Instead, the Defendant submitted that in the present case, as was the case in *Telstra*, there was no author because the person in control of the software was not involved in “shaping or guiding the material form” of the works in question. The TP programmers had not used the software as a novelist uses a word processor. The intellectual effort that went into the computer program was to the creation and operation of the software, and not the “incarnation of the material form” of works (*Telstra* at [117]).

Conclusion

1. In my view, the Plaintiff’s argument only goes so far. Even if I were to accept that any creative act is essentially algorithmic, that was not the question before me. The question I had to decide was whether the TP programmers were responsible for the algorithms behind the computer program’s creative process.
2. It is quite clear that the TP programmers did not generate the Underlying Image, nor did they possess sufficient experience or skills in the relevant discipline to have written code that would have allowed the computer program to do so. The Plaintiff cannot claim that the TP programmers had chosen the rules for the creation of the computer program if the programmers themselves did not know what those rules were or ought to have been.
3. On this point, I found that the TP programmers were not the authors of the Underlying Image.

Whether, if no author can be identified, the Underlying Image can still be said to be original

1. Keeping in mind the Court of Appeal’s ruling in *Asia Pacific Publishing* that an author must first be identified before the work in question can be deemed to be original (at [75]), I requested the Plaintiff and the Defendant to address the question of whether, lacking an identifiable author, the Underlying Image may nonetheless be “original” such that it may sustain copyright.

The Plaintiff’s submissions

1. The Plaintiff submitted that the originality of computer-generated works remained an open question unresolved by *Asia Pacific Publishing*, which could be distinguished from the present case on its facts, for the following reasons:
	1. The case argued before the Court of Appeal in *Asia Pacific Publishing* was not on all fours with the current facts, as the Court did not have the benefit of submissions on whether a computer program could be original. The question was instead whether or not a corporate entity could be an author and thus the Court's comments on authorship and originality are not binding; and
	2. The Court of Appeal endorsed the opinion expressed in *Copinger & Skone James on Copyright* vol 1 (Sweet & Maxwell, 16th Ed, 2011) (“*Copinger*”) at [56], that: “[w]ith very limited exceptions [*such as computer-generated works* and old photographs], the ‘author’ of these categories of work must be a natural person”. This suggests that *Asia Pacific* *Publishing* could be seen as anticipating an exception to the author-based-originality regime where computer-generated works are concerned; and/or
	3. The general rule articulated by the Court of Appeal (that an author must first be identified) gives way in specific circumstances to the *lex specialis*, which in this case was section 133 of the Act. Section 133 of the Act provides that, *inter alia*, the regime governing posthumous work may be applied to anonymously-authored published work, and in such circumstances, the work shall be presumed to be an original work unless the contrary is established. This presumption of originality must necessarily also include a presumption as to authorship. In such circumstances, section 29(1) of the Act provides that copyright will subsist in the work for 70 years after the expiration of the calendar year in which the work was first published. The Court of Appeal in *Asia Pacific Publishing* had not contemplated the application of the posthumous works regime to anonymous authors, as the respondent in that case had claimed to be the author of the disputed works, and the question of anonymous authorship had not arisen.
2. Further, the Plaintiff argued that notwithstanding that the TP programmers had not written the exact code that AIR used to create images, the programmers were nonetheless the persons by whom the arrangements necessary for the creation of the work had been undertaken, which is an alternative test for the authorship of computer-generated works, for which proposition the Plaintiff cited *Copinger*. The TP programmers had devised the machine-learning regime by which the computer program learned to identify trendy images, and also fine-tuned it to ensure that the computer program is uniquely receptive to the feedback. This demonstrated a “sufficient amount of skill, labour and judgement” (at [33] of *Asia Pacific Publishing*) in establishing a nexus between the work of the TP programmers and the output of the computer program, thereby fulfilling the “minimal degree of creativity” (at [38] of *Asia Pacific Publishing*) required for originality to be made out.

The Defendant’s submissions

1. The Defendant disagreed with the Plaintiff on the basis that the link between the unique creativity and skill in coding of the TP programmers, and the final product of the computer program, is too remote. The Defendant submitted that originality should only turn on the question of authorship.
2. On that issue regarding the relationship between originality and authorship, the Defendant disagreed on the basis that I was bound by *Asia Pacific Publishing*, and that the “exception” for computer-generated works proposed by the Plaintiff does not exist under Singapore law. The Defendant pointed out that the quotation from *Copinger* was in fact, referring to specific provisions in the UK, Copyright, Designs and Patents Act 1988 (the “CDPA”). Section 178 of the CDPA identifies computer-generated works as being those works generated by a computer in circumstances such that there is no human author, and section 9 of the CDPA provides in such circumstances, the author is to be taken as the person by whom the arrangements necessary for the creation of the work are undertaken.
3. The Defendant submitted that the CDPA is not in *pari materia* with the Act, which draws its inspiration instead from the Australian Copyright Act (*Asia Pacific Publishing*, [21]). Parliament had every opportunity to adopt provisions from the CDPA and other similar statutory regimes for computer-generated works (in this regard, the Defendant referred to legislation from Ireland and India) when the Act was amended post-1988, but it chose not to. The Defendant submitted that Parliament’s intention must therefore have been to exclude such protection from Singapore law. Due to the Act’s provenance and the lack of parliamentary intention to the alternative, the Defendant submitted that local and Australian cases are therefore highly persuasive and that I should disregard the Plaintiff’s reliance on *Copinger* in favour of *Asia Pacific* and *Telstra*.
4. On the issue of anonymous authorship, the Defendant submitted that a party cannot ask the court to apply section 29 of the Act as if the work were anonymous, in an action where that same party was putting forward its employees as authors of the work. The Defendant argued that if the Underlying Image truly was generated anonymously, then the Plaintiff cannot claim that the TP programmers are the authors of the computer program. In addition, the Defendant argued that section 133 of the Act, which includes a presumption of the author’s death, clearly cannot have been intended by Parliament to cover situations in which the work was authored by a non-human and more importantly non-living author (*Asia Pacific Publishing* at [63], referring to section 28 of the Act which also refers to the death of the author as not being contemplated to refer to non-living authors).

Conclusion

1. In my view, the present facts did not warrant a departure from the Court of Appeal’s ruling in *Asia Pacific Publishing* that an author must first be identified before the work in question can be deemed to be original. While the Court of Appeal in *Asia Pacific Publishing* made its findings in relation to a body corporate, rather than a computer software, its concern that authors should not be given “indefinite and extraordinary perpetual copyright” hold just as true for undying computer programs as for immortal companies (at [63]).
2. With regard to the “exception” for computer-generated works expressed in *Copinger* that was cited by the Plaintiff, I agreed with the Defendant that there is simply no such thing under Singapore law.
3. On the issue of anonymous authorship, there is a logical contradiction between the Plaintiff’s reliance on sections 29 and 133 of the Act, on the basis that the Underlying Image is an anonymously-authored published work, and the Plaintiff’s claim that the TP employees are the authors of the Underlying Image. As such, I found that the Plaintiff cannot apply sections 29 and 133 of the Act as if the Underlying Image was created anonymously.
4. In view of the above, I found that there was no infringement of the Plaintiff’s copyright by the Defendant as no copyright subsisted in the Underlying Image.

Issue of *locus standi*

1. Although there is no need for me to decide on the issue of the Plaintiff’s standing to bring and maintain the actionas I found that no copyright subsisted in the Underlying Image, I will briefly touch on this issue.

The Plaintiff’s submissions

1. The Plaintiff advanced two arguments in support of its claim on standing; first, that it was the owner of the copyright to the Underlying Image by virtue of its purchase of the NFT and the NFT Term, and in the alternative, that the Plaintiff is the exclusive licensee of the Underlying Image, and therefore pursuant to section 123 of the Act, it has *locus standi* to bring and maintain the action.
2. In supporting its first argument, the Plaintiff initially submitted that the ownership of the NFT and the Underlying Image are conjoined and inseparable. However, the Plaintiff quickly retracted this position and instead argued that the reading of the NFT Term, and in particular with reference to the word “own”, showed the intention of TP to transfer the ownership, and consequently *all* the rights underlying, of the NFT and the Underlying Image.
3. The Plaintiff also submitted that even if it is not the owner of the Underlying Image, it is an exclusive licensee within the meaning of section 7 of the Act of the rights to reproduction and communication to the public.

The Defendant’s submissions

1. In relation to the Plaintiff’s first argument, the Defendant submitted that it was clear from the plain reading of the NFT Term that the word “own” refers to the non-fungible token, and not the Underlying Image. The following sentence was also clear that any grant relating to the copyright to the Underlying Image was of a licence and not an assignment. In support of this point, the Defendant cited the NFT Term:

We know - this is exciting! You now ***own*** this one and only, exclusive, ***non-fungible token***. You, and only you, now have the ***licence*** to print the ***Khaleesi artwork*** on tee shirts, or if you’d like to just post the ***artwork*** on your Instagram account.

[emphasis added in bold italics]

1. The Defendant also disagreed that the Plaintiff was the exclusive licensee of the Underlying Image. The Defendant submitted that while the copyright of the Underlying Image could have been licensed to the Plaintiff, the licence was not an exclusive licence. In particular, an exclusive licensee is to the exclusion of all other persons, including the owner of the copyright (*Alliance Entertainment Singapore Pte Ltd v Sim Kay Teck and another* [2007] 2 SLR(R) 869 at [11]) (“*Alliance Entertainment*”). In this case, the Defendant submitted that the NFT Term did not expressly provide for the exclusion of TP. The Defendant further submitted that the market practice relating to the sale of such “non-fungible tokens” had consistently been to provide a limited licence of the copyright to the purchasers of “non-fungible tokens”, instead of an assignment or grant of exclusive licence.

Conclusion

1. I preface my conclusion by noting that, as set out in the paragraphs above, there was no infringement of the Plaintiff’s copyright by the Defendant as no copyright subsisted in the Underlying Image. Therefore, my analysis on the *locus standi* issue is solely based on the assumption that copyright subsists in the Underlying Image.
2. In my view, the Plaintiff’s first argument is bound to fail. I agree with the Defendant that the plain reading of the NFT Term clear shows that the use of the word “own” in the first sentence of the NFT Term relates to the non-fungible token. In addition, it is also clear from the plain reading of the second sentence of the NFT Term that a licence, *not* an assignment, is granted of the copyright to Underlying Image. Therefore, I cannot agree with the Plaintiff that it is the copyright owner of the Underlying Image by virtue of the NFT Term.
3. The Plaintiff’s second argument relies on the point that copyright comprises of a bundle of legally enforceable exclusive rights in respect of certain types of products of intellectual activity (*Composers and Authors Society of Singapore Ltd v Fox Networks Group Singapore Pte Ltd* [2021] SGHC 241 at [28], citing *PCCW Media Ltd v M1 Ltd and others* [2018] 5 SLR 375), and on the basis that the NFT Term states that the licence is granted to “*You, and only you*”, the licence granted is one that is exclusive in relation to the rights to reproduction and communication to the public.
4. However, as the Defendant rightly pointed out, the grant of an exclusive licence is to the exclusion of all other persons, including the owner of copyright. While I am hesitant to express any views relating to market practices or the commercial practice of TP relating to the sale of such “non-fungible tokens” as submitted by the Defendant, I should point out that the second sentence of the NFT Term is ambiguous as to whether the owner of the copyright would similarly be excluded from exploiting the Underlying Image in the manners specified, i.e. to reproduce the Underlying Image or communicate the Underlying Image to the public. I further note that while the term “exclusive” was used to describe the Plaintiff’s ownership of the non-fungible token, the same term is noticeably missing in the second sentence. In this context, I am not convinced that an exclusive licence was granted to the Plaintiff by virtue of the NFT Term.
5. Accordingly, I find that even on the assumption that copyright subsists in the Underlying Image, the Plaintiff did not have *locus standi* under the Act to bring a claim against the Defendant.
6. I will hear parties on costs separately.