

The Ghost in the Machine

The Legal Capture of Technology

LAWRENCE LIANG

When Sean Fanning devised Napster in 1999, there were two significant innovations that he set in place. The first was technological – it enabled people across the world to share music in a manner hitherto impossible. Napster was heralded as one of the most significant peer-to-peer innovations that would completely change the structure of the music industry and the rules with which the music industry organised production and distribution. Needless to say, the community of music lovers underestimated the music industry's resolve to combat any technological change that threatened its control. As a result, in July 2000 Napster found itself dragged to court, to defend itself against a barrage of lawsuits claiming that Napster was liable for copyright infringement. This led to the second innovation – a legal one – where the courts held that Napster was liable to contributory infringement as it enabled thousands of people to share and copy MP3s for no cost.¹

For a large number of people the decision of the Court came as a shock as it seemed to go against the general assumption that MP3 technology had emerged as a restoration of balance in favour of consumers who had lost out to the large recording companies. The Napster case also brought into the daily lives of people, for the first time, the harsh reality of the copyright system, as it featured in almost every newspaper and magazine. While this decision came as a surprise to the large number of music lovers, it did not surprise those who have been following the varied encounters that copyright law has had with tech-



nology, from its inception in the 18th century as a response to the print revolution to the current digital age.

The history of copyright law can, in a sense, be narrated by the changes it has gone through and the scope of protection that has been rearticulated particularly with respect to new markets enabled by new technologies. Every technological progress has altered the balance of control between copyright owners and users. Jane Ginsburg for instance says, "until the advent of the photocopier, copyright owners substantially controlled the production and dissemination of copies of works of authorship, as the public could not obtain one from a library or a friend. Before mass market audio and video recording equipment, copyright owners also controlled access to the works made publicly available through performances and transmissions; because the public could not see or hear the work without attending a licensed live performance, or viewing or listening to it through licensed media. With the arrival of these technologies, the *de facto* and often *de jure* balance substantially shifted to the users".²

And yet with every technological change that enabled such a shift, copyright law has managed to emerge stronger by interpreting existing law in a manner so as to include technological change within its ambit. Two strategies that copyright law has classically adopted when it encounters a new technology:

Copyright owners seek to exploit the new technology to their advantage – an example of this is the manner in which copyright owners adapted to radio broadcasting where the courts expanded on the idea of 'public performance'.

Copyright owners seek to block the new technology – an example of this is the Betamax case where copyright owners claimed that Sony's invention of the video tape recorder enabled infringement by allowing viewers at home to record their favourite shows and watch them at a later date.

While courts have been reluctant to admit arguments of the second order, they have gone out of their way to innovate to ensure that the first objective is met. The issue to be examined, then, is the manner in which the law transforms technology to fit it within the existing relations of the means of production and dissemination of information in order to enable the exploitation of the new technology. Technology is therefore a legally mediated discourse that has to be interpreted or 'translated' by the law and deemed to be worthy of legal innovation that promotes the welfare of society at large. If it fails this legal test, it is an illegal and errant innovation that promotes the violation of existing laws.

Here I shall examine one of the ways in which copyright laws translate technology to make it fit within the existing relations of property and ownership. Beginning with the specific socio-economic history of copyright's response to the printing press and the emergence of the figure of the author, I shall move to an analysis of the first instance when this romantic individual, the author, is challenged by the emergence of a soulless technology, photography, and the manner in which the courts infuse the new technology with the soul of an author. I shall finally claim that it is the setting up of the ideological figure of the romantic individual author that prohibits the law from understanding technological innovations in the present age – innovations that defy all of the normative premises upon which copyright law is based.

A Genealogical Account of the Author in Copyright³

Before the invention of the printing press, the act of writing was a very localised activity and it was impossible to disseminate knowledge in any significant manner since the inaccuracies of copying prevented any widespread use of the written work. The invention of the printing press enabled a number of innovations. Duplication became easier and more accurate. Mass distribution became viable. The printing press revolutionised information storage, retrieval and usage. Printing, unlike writing, allowed a society to build on the past with a confidence that each step was being made on a firm foundation. Printing generated confidence that new information was an improvement over old. The revolution in the ability to accurately reproduce works fostered an understanding that progress can occur through a process of revision and improvement. The increased accuracy and rapidity of new editions made possible by the printing press made the most recent editions more valued than the older. Additionally, access was now available to the literate public. Printing provided a mechanism by which a larger reading public developed, thus constituting the emerging public sphere.⁴

This new reading public that emerged demanded books, original and reprints, and set in stage the crucial conflict over the ownership of such information. As Mark Rose observes, “a sufficient market for books to sustain a commercial system of cultural production” had to exist before the coming into being of a formal regime of intellectual property. What was earlier the monopoly of the Stationers Company, a guild recognised and regulated by the Crown, became a mass industrial activity with a number of publishers in the provinces (Scotland) publishing cheap reprints for the new reading public.

The reaction from the literary and artistic world was to move away from the ‘ills of industrial revolution’, and they began deploying the notion of the author as a unique and transcendent being, possessing originality of spirit. This romantic model was used as a means of rescuing the artists’ works from the hostile market and the public for whom mass production made works available as never before, but at the risk of turning it into an industrial product. The romantic artist was therefore deemed to have property in an uncommodifiable imaginary self, so originality was elevated to being located in and belonging to the self of the author. And because the artist owns his original person or spirit, works created by such authors were also deemed to be original; and they could thus distinguish their personality from the expanding realm of mass produced goods.

There is then a dual move which is set in place where the concept of the ‘modern proprietary author’ is used as a weapon in the struggle between the London booksellers and the booksellers of the provinces, culminating in the landmark case of *Donaldson v. Becket*. The entire claim in *Donaldson v. Becket* is made in the name of protecting the rights of the author (it must be noted that no author was involved in the case) and the individuality of their ideas, even though the primary benefactors from this new system of knowledge ownership were publishers, since all authors assigned their copyright to the publishers before publication. The modern proprietary author simply created a useful euphemism for protecting company rights to copy.

This invocation of the author significantly ties up copyright to the concept of an author. The proprietary author emerges as the London publisher’s mode of maintaining strict control over copyright. However, once unleashed, the idea of the author starts taking on a new

meaning with unexpected consequences. It emerges as a new social relationship which will transform the way society perceives the ownership of knowledge. This establishment of the ideological figure of the author naturalises a particular process of knowledge production where the emphasis on individual contribution denigrates the concept of community knowledge and helps promulgate the notion of the individual as owner.⁵

Portrait of the Camera as a Young Artist

This romantic artist, once established, lives for a number of years without too many difficulties, until the invention of photography almost a century later. Edeleman states that “the eruption of the modern techniques of the reproduction of the real – photographic apparatuses, cameras – surprises the law in the quietude of its categories”.⁶ Initially the law was not ready for the challenge that would be posed to it by this new technology. Faced with the question of whether a photograph could be considered on the same plane as a painting, the initial response of the courts was in the negative. For French law, the crucial question was whether or not the mechanical product could be said to have anything of ‘man’ in it at all. An authored work (it was argued) is imbued with something of the human soul, but a machine produced work is completely soulless.⁷

Yet, this soulless craft had at the same time also become an important economic activity with thousands in France making a living through photography and photographic technologies. France itself was exporting photographic images, and demands were soon made for the protection of these images and “the soulless photographer will be set up as an artist and the filmmaker as a creator since the relations of production will demand it”.⁸

At this juncture it is worth reading closely one of the developments in the US with respect to photography. In *Burrow-Giles lithographic co. v. Sarony*,⁹ the Supreme Court was faced for the first time with the issue of whether an amendment to the Copyright Act to include photographs was constitutionally valid. The pictures in dispute were that of Oscar Wilde taken by Sarony and reprinted by Burrow-Giles without the permission of the photographer. The Supreme Court held that the amendment was valid and within the constitutional powers granted to Congress. However, to arrive at this conclusion the Court had to argue that photography could be protected in the same manner as any other work of creation as it emerged from an ‘author’. How does the Court make this argument?

The Court observed that, “an author in that sense is ‘he to whom anything owes its origin; originator; maker; one who completes a work of science or literature’. So, also, no one would now claim that the word ‘writing’ in this clause of the constitution, though the only word used as to subjects in regard to which authors are to be secured, is limited to the actual script of the author, and excludes books and all other printed matter. By writings in that clause are meant the literary productions of those authors; and Congress very properly has declared these to include all forms of writing, printing, engravings, etchings, etc. by which the ideas in the mind of the author are given visible expression. The only reason why photographs were not included in the extended list in the act of 1802 is, probably, that they did not exist; photography, as an art, was then unknown, and the scientific principle on which it rests, and the chemicals and machinery by which it is operated, have all been discovered long since that statute was enacted. We entertain no doubt that the constitution is

broad enough to cover an act authorising the copyright of photographs, so far as they are representatives of original intellectual conceptions of the author".

The first move is therefore to equate the photographer, and what he does with photographic technology, to the status of an author – a concept which the law is very familiar with and can grasp without too much difficulty. But that does not automatically solve the Court's difficulty as it is still faced with the question of the role that technology plays in this production process.

In the words of the Court: "But it is said that an engraving, a painting, a print, does embody the intellectual conception of its author, in which there is novelty, invention, originality, and therefore comes within the purpose of the constitution in securing its exclusive use or sale to its author, while a photograph is the mere mechanical reproduction of the physical features or outlines of some object, animate or inanimate, and involves no originality of thought or any novelty in the intellectual operation connected with its visible reproduction in shape of a picture. That while the effect of light on the prepared plate may have been a discovery in the production of these pictures, and patents could properly be obtained for the combination of the chemicals, for their application to the paper or other surface, for all the machinery by which the light reflected from the object was thrown on the prepared plate, and for all the improvements in this machinery, and in the materials, the remainder of the process is merely mechanical, with no place for novelty, invention, or originality. It is simply the manual operation, by the use of these instruments and preparations, of transferring to the plate the visible representation of some existing object, the accuracy of this representation being its highest merit. This may be true in regard to the ordinary production of a photograph, and that in such case a copyright is no protection".

The answer is to distinguish between the mere mechanical technology that the camera seems to be and the transformation of that technology by the investment of the soul of the author. In this case the court poetically describes the photograph in dispute in the following way: "...It is a 'useful, new, harmonious, characteristic, and graceful picture, and that plaintiff made the same... entirely from his own original mental conception, to which he gave visible form by posing the said Oscar Wilde in front of the camera, selecting and arranging the costume, draperies, and other various accessories in said photograph, arranging the subject so as to present graceful outlines, arranging and disposing the light and shade, suggesting and evoking the desired expression, and from such disposition, arrangement, or representation, made entirely by plaintiff, he produced the picture in suit'. These findings, we think, show this photograph to be an original work of art, the product of plaintiff's intellectual invention, of which plaintiff is the author".

So, from being a soulless technology which could not be protected under copyright law, photographic technology gets elevated to the same status as a painting or any other great 'work of art' symbolising the creativity of the author. What then is the crucial legal innovation that was required for the law to understand this new technology and translate it within the terms of copyright law? In order for copyright law to be able to accept the claims of the photographer as a co-equal author, it becomes important to resurrect the creative subject who had disappeared into the machine and a soul has to be found in the mechanical act, the soulless labour of operating a camera.¹⁰ But this soul or personality cannot flow

through the apparatus, and the apparatus must be circumvented – otherwise the authorial credit would be void. It therefore needs to navigate its way through the apparatus and make its mark without actually touching the apparatus. It therefore needs to provide a mere “imprint of personality” – and this is never really found in the work but present everywhere else – in choice, technique, artistic practice etc.

The result of this creative subject’s interaction with the mechanical object is a wholly new object, one which is now protected by copyright law. It is protectable because the new technology has been given an “imprint of personality” and is converted into an act marked by the sign of the author. Thus, the initial surprise felt by the law in its encounter with technology is rendered familiar and understandable. So “new technologies may surprise old categories, but only to be reformed according to existing conceptions of the world. Science and engineering may produce technologies that outstrip human capabilities, but these strange inventions are soon reconceived – domesticated and humanised – as they are put to use”.¹¹

And Yet the Author Shall Rise Again

Barthes may have been a bit premature in his announcement in the 60s of the death of the author. For despite the various attempts to kill the author by conspiring technologists and poststructuralists, copyright’s greatest invention has found himself resurrected in different ways.

For a number of years, computer software existed without any framework of protection and computer programmes were never considered works that were authored in the classical sense of the term. It is only in the 80s, with the emergence of a huge market for desktop computers, that any serious claim is made for the protection of software by intellectual property. The question that is posed sounds deceptively similar: under what theory of law can a computer programme be protected? We have already seen in the case of photography that when law encounters technology, it seeks to translate the phenomena into its own terms. Rather than explain the phenomena, it seeks to explain itself in renewed terms. If in the 18th century there was a need for the author figure as a result of the market economy in literary texts, in the 80s there was a need for a framework under which software could be protected. And when this problem of software arose all that was needed was to argue and show that components of software fell under the definition of literary works, and hence the authors of these works needed to be protected.

Intellectual property law has generally been divided into two categories – industrial property law and copyright law. Computer technology, while seemingly better fitted for the first, has in recent years been protected under copyright law. In *Apple Computer Inc. v. Franklin Computer Corp.* 714 F.2d 1240 (1983), the court was faced with the question of whether computer software was copyrightable.

Franklin, a small computer company that manufactured “Macintosh compatible” computers, was charged with infringing copyright on 14 different programmes written by Apple. These computers, Apple argued, used exact copies of their own software, with only minor changes like the elimination of the copyright warnings and authors’ names. Apple claimed, and Franklin never denied, their software was copied. Apple claimed they could prove

authorship because Franklin had not removed the author's names that had been embedded in the programmes. Franklin's argument was that the programmes were not protectable under copyright law and thus copies could be made.

The court held that "Apple does not seek to copyright the method which instructs the computer to perform its operating functions but only the instructions themselves. The method would be protected, if at all, by the patent law, an issue as yet unresolved".¹² Franklin's attack on operating system programmes as "methods" or "processes" seems inconsistent with its concession that application programmes are an appropriate subject of copyright. Both types of programmes instruct the computer to do something. Therefore, it should make no difference for purposes of section 102(b) whether these instructions tell the computer to help prepare an income tax return (the task of an application programme) or to translate a high level language programme from source code into its binary language object code form (the task of an operating system programme such as "Applesoft"). Since it is only the instructions that are protected, a 'process' is no more involved because the instructions in an operating system programme may be used to activate the operation of the computer than it would be if instructions were written in ordinary English, in a manual that described the necessary steps to activate an intricate, complicated machine. There is, therefore, no reason to afford any less copyright protection to the instructions in an operating system programme than to the instructions in an application programme.

Franklin's argument, receptively treated by the district court, that an operating system programme is part of a machine, mistakenly focusses on the physical characteristics of the instructions. But the medium is not the message. We have already considered and rejected aspects of this contention in the discussion of object code and ROM. The mere fact that the operating system programme may be etched on a ROM does not make the programme either a machine, part of a machine or its equivalent. Furthermore, as one of Franklin's witnesses testified, an operating system does not have to be permanently in the machine in ROM, but it may be on some other medium, such as a diskette or magnetic tape, where it could be readily transferred into the temporary memory space of the computer. In fact, some of the operating systems at issue were on diskette. As the CONTU majority stated, "Programmes should no more be considered machine parts than videotapes should be considered parts of projectors or phonorecords parts of sound reproduction equipment... That the words of a programme are used ultimately in the implementation of a process should in no way affect their copyrightability".

The Court held in Apple's favour and extended "copyright protection to all forms of software". In this decision the court reaffirmed the definition of 'literary' as indirectly including computer programmes as "works of authorship". As in the *Donaldson v. Becket* case, authorship granted to computer programmes works to maintain monopolistic control by the already advantaged. The underlying tension is between a large company with a virtual monopoly over a certain expression of an idea, and a smaller company wishing to produce a similar product. In both cases the author is suspiciously invisible in the dispute, but omnipresent in the justificatory arguments made by those who wish to establish the presence of the author.

Is Cyberspace the End of Copyright as we Know it?

It is time to return to our original story: Napster and the turmoil caused to copyright law by a new technology. The story by now is almost painfully similar. A new technology emerges that changes the way in which people deal with the exchange of information, the technology is allowed to exist for a while – surprising the law – and then the law awakes to adapt the technology into a variant of an existing right. The question that I would however like to pose is this: Can the current digital moment be “domesticated and humanised” in the same manner that previous technological innovations have been?

Digital information on the Internet has effectively changed the rules in a manner which surprises the law like it has never been surprised before. For instance:

Information exchange has become easier through a process of duplication and multiplication in an unprecedented way. The transaction cost of exchanging information has become practically zero.

Authors lose control over their works much more easily as the work circulates and gathers new shapes and characteristics.

One major shift is that there is a change in emphasis from authorship to dialogue. (The text easily loses its bounded quality to become a part of the larger information network).

Everyone becomes a self-reliant desktop publisher.

Hypertext breaks the linearity of texts and thereby transgresses the boundaries of signification, including those set up by the author.

The figure of the author approaches and merges with the figure of the reader/critic.

Through the process of commentary and forwarding, etc., the reader becomes an overt collaborator in an unending process of reading and writing; also destroying notions of where the text begins and where it ends.

Increasingly the computer itself becomes the author or the artist.

Peter Jaszi, for one, argues that copyright is being displaced by three stronger systems of control which afford far greater protection. These are:
pseudocopyright – data protection efforts;

paracopyright – technological locks that makes it more difficult to copy information;

metacopyright – the use of contracts to eclipse any limitations that copyright law may have.

One instance of paracopyright is found in the *Digital Millennium Copyright Act* of 1998, which is the enabling legislation for the WIPO copyright treaty. The Act provides the power to regulate technology. For instance, it prohibits the circumvention of any effective technological protection measure installed to restrict access to a copyrighted work. It prohibits the manufacture of any device or programme or offering of any service that is designed to defeat technological measures.¹³

While seemingly more encompassing than even the traditional strategy adopted by copyright law, namely the resurrection of the author, I would argue that it also seems to signal towards an inadequacy that the authorial discourse faces in the digital era. Whether this shift in the register of regulation – from exterior limits placed upon technology to internalised techno-limitation – will intensify or loosen the hold of law upon technology remains to be seen.

NOTES

1. See, generally, *Symposium: Beyond Napster: Debating the future of copyright on the Internet: Panel two: Which legal rules control?* (50 Am. U.L. Rev. 389).
2. Ginsburg, Jane *Copyright and control over new technologies of dissemination* (Colum. L. Rev. 1613).
3. See, generally, Woodmansee, Martha *The genius and the copyright: economic and legal conditions of the emergence of the 'author'* (17 eighteenth-century stud. 425, 426, 1984); Rose, Mark *The author as proprietor: Donaldson v. Becket and the genealogy of modern authorship* (23 representations 51, 1988); Jaszi, Peter *Towards a Theory of Copyright: The Metamorphoses of 'Authorship'* (DUKE L.J. 455, 1991); Jaszi, Peter, "On the author effect: contemporary copyright and collective creativity" (in *Cardozo Arts and Entertainment Law Journal* 293, 1992).
4. Halbert, Debora "Computer technology and legal discourse: the potential for modern communication technology to challenge legal discourses of authorship and property" (opher://infolib.murdoch.edu.au:70/00/.ftp/pub/subj/law/jnl/elaw/comment/halbert.txt).
5. *Ibid.*
6. Edelman, Bernard *Ownership of the image: Elements for a Marxist theory of law* quoted in Gaines, Jane *Contested Culture: The Image, the Voice, the Law* (University of North Carolina Press, Alan Trachtenberg, 1991) p. 45-46.
7. *Ibid.*
8. *Ibid.*
9. 111 U.S. 53 (1884).
10. Gaines, Jane *Contested Culture: The Image, the Voice, the Law* (University of North Carolina Press, Alan Trachtenberg, 1991) p. 47.
11. *Ibid.*
12. See *Diamond v. Diehr* (450 U.S. 175, 67 L. Ed. 2d 155, 101 S. Ct. 1048, 1981).
13. See Vaidyanathan, Siva *Copyright and Copywrongs: The rise of intellectual property and how it threatens creativity* (NYU Press, 2001, New York).



