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Protection of Computerised Data in Australia

by Michael Paterson

This paper discusses the subsistence of copyright in works other than computer programs that have not been reduced to printed form. Copyright protection of such works has been overshadowed by the discussion of copyright protection of computer programs.

More and more information is being produced in computer readable form:

(a) this paper existed only in computer readable form long before it was printed and so are all docu-

ments produced with a word processor;


(b) text books and encyclopedias and other books are being published on compact discs, i.e. computer readable formats instead of a printed format;

(c) Case law and legislation is available on compact disc and is stored in data bases on main frame computers.

The computer industry's dream of a paperless office is still a long way off

but as the power of the computers, the software that runs on them and the computer literacy of the general public continues to increase, more and more paper forms of information are being produced in and sometimes replaced by computerised format.

There is a danger that the protection afforded to computer programs under the 1984 amendments to the *Copyright Act 1968* does not extend to such computerised information

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From the Editors' Desks

Welcome to the last issue for 1992. Yes, we know that it is now well into 1993, but due to editorial and printing delays we have run a little late. We considered whether we should cut our losses and call this the first issue for 1993, but decided that we had far too much to fit into our 1993 schedule to afford the luxury of one less issue. More of the 1993 schedule later, but first this issue:

This issue is about data, and the way in which the law has often failed to come to terms with its nature. We have a lead articles which canvasses the important concerns which continue to raise their heads in intellectual property rights in data. Michael Paterson, a lawyer and computer scientist from Perth discusses how our courts and legislature has sought to protect data. It is interesting to reflect that there is no representational difference between program code and program data. It was this fact which was so important in the *Autodesk* decision, since the lookup table which provided the basis for infringement can best be

characterised as data rather than program code. Similarly, the *Daman* case in the UK revolved around data. It may well be that protection of confidential commercial data may become the most important question in computer related intellectual property. In keeping with this we also have a case report and comment on the *Fiest* and *BellSouth* cases, both of which looked at the copyright protection of telephone book entries in the US. How this relates to both computer data and Australasia is discussed in his article.

We have a prize winning essay from Darren Ho on the type of legal protection which should be given to computer programs and a discussion of what he believes to be the best way of protecting computer software. We also have an extract of the guidelines for the security of information systems as well as an article from a US attorney giving an outline of rights in computer software in the US.

We also have a report on the recent computer crime case from Dr Gordon Hughes of Lander & Rogers

in Melbourne, and President of the Victorian Society for Computers & Law. Though we initially thought to print this article in our forthcoming issue on Computer Crime, we decided to run it now in order to let people know about the case as soon as possible. And while we are on the subject of recent cases, we note here that the *Nintendo v Centronics* appeal reversed the earlier trial judge decision. We hope to have a full report of that case in our next issue.

So, what is our schedule for this year? We have four issues, due out at the end of each quarter. Our first issue is on International Intellectual Property. It coincides with the major international conference to be run in February this year, the '1993 Biennial Computer Law Conference - Doing Business in the Pacific Rim'. We hope to have some reports and papers from the faculty of the conference, along with articles from a number of other notables. Our second issue focuses on Computer Contracts, an important part of computer law and one of the major commercial concerns in computer law.

The third issue will be on technology in the legal office. Our third issue last year also looked at this topic and we have had a very positive response to it. We hope to cover a broader range of issues on the use of technology in legal practice, and provide more of an introduction to the various technologies available. Our final issue will be on Computer Crime and Computer Evidence, and we will let you know more when we have finished, planning for that issue.

We hope that you enjoy this issue, even though it is two months late. The next issue, our International Intellectual Property issue, should follow shortly. Talk to you then.

The Editors.



COMPUTERS & LAW

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because it falls outside the definition of 'computer program' under the Act. Why this is so is not clear. Could it be that it was not intended to give protection to information other than computer programs, tables and compilations? This is an inference that can be drawn, especially since the dichotomy between programs and data has existed since the very beginnings of computers.

The discussion is broken down into the following sections:

- (a) subsistence of copyright - in what material forms can copyright subsist in computerised information;
- (b) infringement of copyright - to what extent do works in which copyright exist enjoy copyright protection; and
- (c) what the writer sees as the ideal legal position.

Subsistence of Copyright in Information other than Computer Programs

Definition

The focus of attention of this paper is on literary works, though a lot of the discussion is applicable to artistic, musical and dramatic works, since all of these are capable of being stored on computer related media or in computer related devices.

A literary work in which copyright would subsist if it were reduced to writing is referred to as a 'Work'. Different material forms in which a Work can exist will be examined to see if copyright subsists.

In writing

By definition, copyright subsists in a Work if it is reduced to writing.

A Work in printed form can be encoded in binary notation, i.e. as a series of 0's and 1's¹ and stored:

- (a) on paper;
- (b) as circuitry within a ROM chip;
- (c) as magnetised fields on a magnetic disc or magnetic tape; and
- (d) as reflective spots on a compact disc or other optical media.

"...copyright subsists in a Work if it is reduced to writing"

Having been encoded, the Work can be reproduced from the binary notation.²

Given the above, does copyright subsist in a Work that has not been reduced to printed form and only exists in binary notation? Different media will be handled separately.

(a) Pre 1984 amendments³ in respect of ROMs

The majority of the High Court in *Apple Computer*⁴ held that a computer program stored in a ROM, was not a literary work within the meaning of the Act. Their reasoning did not turn on the fact that the Work in question was a computer program and so extends to any Works other than computer programs that are stored in a ROM. Thus prior to the 1984 amendments of the Act, copyright could not subsist in a ROM chip representation of a Work.

(b) Post 1984 amendments, ROMs and Data other than tables, compilations and computer programs

The decision of the full High Court in *Autodesk*⁵ dealt with information stored in an erasable programmable read only memory ('EPROM'), a form of ROM. Unfortunately, it was not necessary to determine if the information could be a literary work because it was sufficient that it was a reproduction of a substantial part of a computer program that was a literary work under the Act.

It is therefore necessary to examine some of the provisions of the Act, starting with the section that states when copyright subsists in a Work.

Subsection 32(1) provides:

Subject to this Act, copyright subsists in an original literary, dramatic, musical or artistic work that is unpublished and of which the author:

- (a) was a qualified person at the time when the work was made; or
- (b) if the making of the work extended over a period - was a qualified person for a substantial part of that period

(but the discussion is limited to literary works).

Subsection 22(1) then provides:

A reference in this Act to the time when, or the period during which, a literary, dramatic, musical or artistic work was made shall be read as a reference to the time when, or the period during which, as the case may be, the work was first reduced to writing or to some other material form.

The new definition of 'material form' provides:

'material form' in relation to a work or adaptation of a work, includes any form (whether visible or not) of storage from which the work or adaptation, or a substantial part of the work or adaptation, can be reproduced;

and the full High Court in *Autodesk*⁶ held that a ROM chip representation of a substantial part of a Work is a material form of that part of the Work under this definition.

Backtracking through the provisions above, it can be argued that:

- (a) a ROM is a form of storage from which the stored Work can be reproduced, and so is a material form under the Act;
- (b) if a Work is reduced to such a material form, the time when it is so reduced is the time when it is made; and
- (c) the Work is original by definition;
- (d) but is it a literary work?

Gibbs CJ in *Apple Computer*⁷ said that, even assuming that a ROM were a material form under the Act, the ROM representation of the work was not a literary work:

'It seems to me a complete distortion of meaning to describe electrical impulses in a silicon chip, which cannot be perceived by the senses and are not intended to convey any message to a human being and which do not represent words, letters, figures or symbols as a literary work; still less can a pattern of circuits be so described.'

Deane J⁸ too did not find a ROM representation to be a literary work

within the Act, for much the same reasons:

'Of itself, however, and regardless of how widely one construes the phrase, the arrangement (or series) of electrons or electrical charges in the silicon chip does not constitute a single "literary work". It is not written. It is not a comprehensible language. It cannot be read. It cannot even be seen. Nor is it designed or produced to be read or seen.'

Brennan J⁹, however, based his finding that the ROM representation of the work was not a literary work on

"...even assuming that a ROM were a material form under the Act, the ROM representation of the work was not a literary work"

the preliminary finding that the work was not in a material form:

'... a form from which the words, letters or figures of a literary work cannot be perceived by sight or touch (or, possibly hearing) is not a material form to which the work has been reduced. The electrical charges which constitute the object programs cannot be seen or touched or heard or, if they can, they do not communicate letters of the original literary work, the source programs. Nor, for that matter, do the electrical charges communicate the letters or figures by which an object program may be represented. The object programs are not literary works.'

Now that the definition of 'material form' has been extended, the object code, though not perceivable by the senses, is a material form to which the work has been reduced. Can it be said that the obstacle of not being a material form would mean that Brennan J would have decided the case differently? Would Gibbs CJ and Deane J decided the case differently to agree with Mason and Wilson JJ¹⁰ who found a ROM chip representation was a literary work even before the amendments?

There are no answers to these questions because there is not yet a case in point, but it is open for a court to hold that the position is now that copyright can subsist in ROM representations of information. The writer's view is that copyright should subsist, but the writer also believed the reasoning of Mason and Wilson JJ was preferable and that there never should have been a need for the amendments to the Act.

(c) Tables and Compilations

The position is a little more certain with respect to work which are tables or compilation because of the amended definition of 'literary work'. A 'literary work' now includes:

'... a table, or compilation, expressed in words, figures or symbols (whether or not in a visible form);'

By making the works in which copyrights subsist extend to invisible tables and compilations, the requirement that a work must be able to be perceived by the senses is removed. Does this mean that the reasoning of the majority in *Apple Computer*¹¹ is no longer applicable?

Clause (26) of the Explanatory Memorandum to the *Copyright Amendment Bill* 1984 states:

'By removing the requirement that tables or compilations be in a visible form it is made clear that a computerised data bank, for example, may be treated as a compilation being a literary work. It is also important because data is often stored in a computer as a table.'

There is some doubt whether a computerised data bank is 'clearly' a literary work. Although the invisibility of the ROM representation was a factor in the reasoning of each the majority judgments, it was not a central tenet on which their reasoning rested. Gibbs CJ's view that it is 'a complete distortion of meaning to describe electrical impulses in silicon chip as a 'literary work' would not appear to be altered by the new definition. The same could be said of Brennan and Deane JJ's reasoning.

The position is not as clear as it might be, but the apparent intention of the Federal Parliament was to extend copyright protection to some computer related media or devices and it would be open to a court to find that a ROM could be one such media or device that was contemplated. Just how far a court will go is not certain. Although the courts have shown themselves to be more willing to interpret consistently with legislative intention, they still refrain making what they think are distortions of meaning.

(d) Databases

Databases are generally in the nature of compilations being collections of 'records' with each record having one or more 'fields' of data. For example, a personnel database might be a collection of records with the following fields of data (among others):

name; address; occupation; date of birth; date of commencement; salary.

Thus the database stored in the form of a ROM would be a compilation of various facts and figures and could fit within the amended definition of literary work.

Data can be stored in many and varied forms, however, and may not fit within the above characterisation. The text of cases stored in the on-

"...a complete distortion of meaning to describe electrical impulses in silicon chip as a 'literary work' would not appear to be altered by the new definition"

line SCALE and INFO-ONE data bases and the LAWPAK CD-ROM cannot be characterised in this way. Instead, they are 'concordance' databases in which each word in each case is indexed in a 'concordance'. The index has 'pointers' to the parts of the full text of the cases that contains those words. Can such databases be nevertheless be called a compilation?

Thus, data bases may not have the protection that was intended to have been given.

(e) Magnetic and optical media

Data stored on magnetic or optical media should be treated no differently to data stored in a ROM. The only difference between such repre-

sentations of data and data stored in ROM representation is the way the data is stored and retrieved:

- (a) a ROM stores the data in the form of circuits;
- (b) magnetic media sees the data stored as magnetic fields; and
- (c) optical media sees the data stored in such a way that a machine using a laser light can recognise the data.

These should not be enough to make a material difference, and so, if copyright subsists in ROM representation, it should also subsist in a magnetic or optical media representation.

In RAM

There is only two major differences between data stored in RAM and data in the form of a ROM or in magnetic media:

- (a) the RAM representation is only temporary, existing so long as the power is turned on (although a new form of RAM, a ferromagnetic RAM or FRAM has recently come on the market in which data can remain after the power is turned off); and
- (b) during the time a computer is on, the content of some of the computer's RAM often changes during processing.

The temporary nature of the representation should not make any difference. The definition of 'material form' talks of storage without distinguishing between permanent and temporary forms of storage. The fact that some parts change should not preclude copyright subsisting in the contents at any particular moment in time if, at that moment, there exists a work under the Act.

The Explanatory Memorandum to the 1984 amendments contemplated

'material form' including a RAM representation and the changes to the definition of literary work in relation to tables and compilation was said to be consistent with the amended definition of 'material form'¹².

The writer's view is that, if copyright can subsist in a ROM representation of a work it should also exist in a RAM representation of a work.

On a computer screen

There have been a few so-called 'look and feel' cases, mainly in the United States, dealing with the question of whether copyright can subsist in a screen representation and can a screen representation infringe copyright. Is a screen representation a material form, i.e. a form of storage from which a work can be reproduced? It is difficult to describe the computer screen as such when it is in fact the temporary display or reproduction of stored data, namely, the contents of the RAM or a ROM of the computer.

Thus the question of whether copyright can subsist in the representation of a work on a computer screen can, probably should (in the writer's view) and will be in this paper, avoided. [For a further discussion of this, see Issue 16, May 1991 - Eds]

Infringement of Copyright

Relevant infringing acts

The exclusive rights that may be infringed which will be dealt with by this paper are the rights to:

- (a) reproduce a work in a material form;
- (b) make an adaptation of a work; and

- (c) reproduce an adaptation of a work in a material form;

Reproduction in a material form

(a) Visual similarity no longer needed

The High Court in *Apple Computer*¹³ required the existence of an objective visual similarity between the work and the alleged infringement before there could be a reproduction. The new definition of 'material form' means that a Work may now be reproduced in an invisible form because invisible material forms

***"...if copyright can
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representation of a
work"***

are contemplated by the definition. There was no need for objective visual similarity in *Autodesk*¹⁴ or in *Star Micronics*,¹⁵ but in these cases the original works were computer programs.

Would visual similarity be required if the Work were not a computer program? The infringing reproduction in *Autodesk*¹⁶ was not itself a computer program. Thus it seems that it is only necessary for the infringing reproduction to have been reduced to a material form if copyright subsisted in the original work. It would be very difficult to argue that there must still be visual similarity if the form of the reproduction can be invisible.

(b) What exactly will amount to a reproduction?

The full High Court in *Autodesk*¹⁷ found no difficulty in finding an objective similarity between the look-up table within the Widget.C program and the look-up table within the EPROM chip. Even though that case dealt with a computer program, it is possible to show an objective similarity between a Work that is not a computer program but is represented by circuits or magnetic fields and text of the Work because there is a one to one mapping from the 0's and 1's, which the circuits or magnetic fields are interpreted to represent, and the letters of text. Expert evidence could be adduced to show what the alleged infringing Work represented. If similar to a Work in which copyright subsisted, the necessary objective similarity would exist.

(c) Possible anomaly

If a court were to find that copyright could not subsist in a Work that was not a computer program, a Work in the form of a ROM, for example, but the Work was reduced to writing, copyright would subsist in the Work in the written form. A reproduction of the work in the form of ROM would be an infringing copy of the written Work, even though copyright could not subsist in the infringing Work itself. This is a further argument supporting a finding that copyright can subsist in any material form within the meaning of that term under the Act.

(d) A reproduction in RAM

There is judicial authority for the proposition that copying a work to the RAM of a computer is not a reproduction, with Sheppard J in *Autodesk*¹⁸ saying:

'... I do not regard the transfer of program to the random access memory of a computer as a reproduction or adaptation.'

Sheppard J used the analogy of a book¹⁹ to assist finding that copying to RAM and displaying parts of the program on the screen were not reproductions under the Act because they were 'essential incidents of the proper and accepted use of the program.' With respect, the better characterisation is that there is an implied licence to make the reproduction.

Sheppard J's finding is not binding on a court and for the reasons given in the paragraph above, it is the writer's view that his reasoning should not be adopted with respect to reproductions in the form of a RAM representation of a work.

The discussion above shows that a RAM representation of a Work can be a literary Work in a material form, satisfying the requirement that the infringing copy should itself be a work.

Adaptation

Four of the five judges in *Apple Computer*²⁰ found that before a work could be an adaptation, copyright had to be able to exist in the work. The majority then found that electrical impulses could not be a translation of a written work²¹ for that reason.

This does not prevent an obstacle with respect to computer programs because of the wider definition of literary works and Davies J in *Star Micronics*²² confirmed this. Information other than computer programs still may be of concern because whether an adaptation in the form of a ROM, magnetic media or optical media representation can be an infringing adaptation depends on whether copyright can subsist in

such a representation and the reasoning above is thus applicable.

Another possible anomaly arises if copyright is found not to subsist in ROM, magnetic or optical media representations of a Work:

- (a) Consider a Work and two French translations of the Work, one in writing and one stored in a ROM.
- (b) The written translation is an adaption of the original Work, but the translation stored in the ROM is not.

*"I do not regard
the transfer of
program to the
random access
memory of a
computer as a
reproduction or
adaptation"*

- (c) If the written translation exists, applying the reasoning of the High Court in *Autodesk*, the translation stored in the ROM would be reproduction of the written translation and if not authorised would amount to an infringement, but if the written translation did not exist, there would be no infringement because the translation stored in the ROM would not be a Work.

That an infringement should depend on the existence or lack thereof of an intermediate written translation is unsatisfactory and gives further weight to a finding that copyright can subsist in information other than computer programs that are not perceptible to the human eye.

Summary

Current state of the law

To an extent, the current law with respect to copyright protection of data and computer programs is uncertain.

(a) Subsistence of copyright

The amendments to the Act have ensured that computer programs have better protection than other forms of data. Copyright subsists in works that are computer programs in all material forms within the definition of that term under the Act.

The amendments do not cover data protection to the same extent. There are arguments for and against copyright subsisting in the different forms included in the definition of 'material form' such as on magnetic or optical media or in ROM chips. The position is uncertain.

(b) Infringement

Reproduction in any material form is an infringement but adaptation into some material forms may not be an infringement, i.e. in the case of works other than computer programs when the alleged infringing copy is not in a visible form.

The fact that an author has rights does not prevent them being infringed. Software piracy is rife because it is so easy. Unauthorised copying of literary works that are not computer programs is also easy but the fact that such copying has had little press is evidence that it is not a problem at the moment. As concepts such as the paperless office get closer to becoming reality, however, they are likely to increase.

Devices like the infringing AutoKey (in *Autodesk*) will probably become more prevalent. If coupled with properly worded licence agreements,

the problems that arose in *Autodesk* might be avoided.

(c) Protection resulting from the subsistence of copyright

Where copyright does subsist, the infringement provisions provide adequate protection of intellectual property rights. The extent of protection is better than the extent of subsistence of copy, in fact, because infringing copies may be in any material form even if copyright could not have subsisted in the infringing work!

What the position should be

To the extent that the law is uncertain, it is unsatisfactory. The current state of the law is close to being in line with what the writer believes the position should be, however, it would be open for the courts to decide future cases so that the following ideals are met:

(a) Copyright protection of data including computer programs

Copyright should subsist in a work in any 'material form' within the definition of that term under the Act, if copyright would subsist in the work if it were reduced to writing, or other traditional form in which copyright exists. There should be no distinction between computer programs and other literary works

(b) Extension to other types of works

This formulation can be extended to other works besides literary works. Copyright should subsist in a computerised artistic work if an artistic work in the traditional sense can be reproduced from the material form it is stored in. The same ought to be the case with a musical or dramatic work stored in a 'material form'.

(c) Infringement and enforcement of rights

Reproduction in any material form is already an infringement. Adaptation into any material form should also be an infringement. This would follow if copyright can subsist in a work in any material form.

Appendix A - Binary Representations of Data and the Nature of ROM Chips and Magnetic and Optical Media

Binary Representations of Data

Text can be stored in binary format. The most common way of doing so

"To the extent that the law is uncertain, it is unsatisfactory"

uses a code called the American Standard Code for Information Interchange ('ASCII'). Each upper and lower case letter, most of the symbols commonly found on a typewriter and some special characters to help with formatting has its own numerical code, e.g. the code for 'A' is decimal 21, binary 00010101 or hexadecimal 15.

Eight binary digits have 256 combinations, more than enough for the upper and lower case alphabets and other typewriter symbols. Typically, the ASCII codes are stored in binary form as an 8 binary digit ('bit' for short) number called a 'byte'. Using ASCII, any text that can be written on paper can be represented in a ROM or on magnetic media. There is a direct mapping between the charac-

ters in their written form and their ASCII representation. This direct mapping should be sufficient to find objective similarity between a Work in the form of a ROM and the same Work in written form, just as objective similarity can be found between text and Morse code or Braille.

Object code is also a series of binary digits. In this case, the combinations of bits in a byte of object code represent instructions, RAM addresses and data. For example, three bytes in an object code program: 10010000 00001001 00101100, may represent the instruction to:

- (a) LOAD (10010000 is the load instruction);
- (b) the number represented by the next byte in the program (00001001, or decimal 9, treated as data);
- (c) into the RAM address represented by the next byte after that in the program (address 00101100, or decimal 44).

Other data may have a different representation according to the context in which it is used. All data represented in binary form is a meaningless series of 0's and 1's unless the code is known. In the case of a possible infringement, expert witnesses can be called to explain the code and show that the alleged infringing copy is a substantial reproduction of an original work.

ROM Chips

A ROM chip is a digital device. It is a collection of circuits. Some of the circuits are used to store data and this data is present whether the power source is on or off. The data is stored in discreet locations called 'addresses'.

Some circuits process electrical signals. Contrary to some of the state-

ments made by the High Court judges in *Apple Computer*, a ROM does not contain electrical signals, it processes them and electrical signals pass through the ROM.

A ROM chip accepts input in the form of a number of simultaneous electrical signals. The signals are one of two types 'off' or 'on' which are interpreted as a '0' or a '1' respectively. The signals together are interpreted as a binary number, the binary number is in turn interpreted as an address and the address is interpreted as a request for the contents of the address. A request for information from a particular address will always produce the same result. It is because of this that the information is said to be stored at that address.

For example, consider a ROM with 2 input signals, 4 addresses: 0, 1, 2 and 3 (or, in binary notation, 00, 01, 10 and 11 respectively) and containing the numbers 9, 10, 11 and 12 (or in binary notation, 1001, 1010, 1011 and 1100 respectively):

Input signals 'on' and 'off' would be interpreted as '10', which would be interpreted as a request for the contents of the address '10' or '2'. The output from the ROM would be the content of that address, the number 11, or in binary notation, 1011.

This is only an example by way of illustration. ROMs commonly have thousands of addresses with each address typically holding one or two bytes of information.

If the relevant code is known, it is possible to reduce the data stored in a ROM to writing that has some meaning. Even without the code, the series of binary numbers can be produced and copyright may still subsist in that series.

Magnetic Media

Data on magnetic media, be it a disc, tape or drum is stored in the form of localised magnetic fields in one of two possible orientations, one being interpreted as a '0' the other as a '1'. As with a ROM, bytes of information are stored at specific locations or addresses on the magnetic media.


Associated with the media is a device to 'write' to the media, i.e. to set up magnetic fields on the surface of the media in appropriate orientations to represent binary data; and a device to 'read' information

*"...the series of
binary numbers
can be produced
and copyright may
still subsist in that
series"*

stored on the media, i.e. determine the orientation of the magnetic fields at a particular location that is interpreted as a binary number.

As with ROMs, if the relevant code is known, it is possible to reduce the data stored in magnetic media to writing that has some meaning but even without the code, the series of binary numbers can still be produced.

Optical Media

Optical media, typically compact discs work in a similar way to magnetic discs except that the information is stored in such a way that lasers can be used to determine what data is stored on the disc. 

Michael Paterson practices in the area of computer related law at Picton-Warlow & Co, Perth and is also a Director of The Document Company which systematises legal documents and transactions for the legal profession in Perth.

Footnotes

1. Appendix A discusses how this is possible. A discussion of the nature of ROM chips and magnetic and optical media is also included in Appendix A. This discussion was prompted by the apparent misunderstanding of the nature of a ROM chip by the High Court in *Computer Edge v Apple Computer* (1986) 6 IPR 1 ('Apple Computer') where the judges talked of ROMs storing data as 'electrical impulses'. This misunderstanding possibly contributed to what the writer believes was an unfortunate outcome. The misunderstanding seems to have continued in *Autodesk Inc v Dyason* (1990) 15 IPR 1 ('Autodesk (Fed. Ct.)'), *Dyason v Autodesk Inc* (1990) 18 IPR 109 ('Dyason'), *Star Micronics Pty Ltd and Anor v Five Star Computer Pty Ltd and Ors* (1990) 18 IPR 225 ('Star Micronics') and *Autodesk Inc and Anor v Martin Patrick Dyason and Ors* High Court of Australia F.C. 92/001 delivered 12 February 1992 ('Autodesk (H. Ct.)').

2. See Appendix A

3. Copyright Amendment Act 1984 (Cth)

4. Supra, note 1:

(a) Gibbs CJ said at pp.7-8:

'Assuming that a ROM is a material form for the purposes of the section, the question becomes whether the object code was a 'work' that was reduced to the form of the ROM. As has already been seen, a source program is a literary work, and the print-out of an object program may be a literary work, but the question is whether the object program as embodied in the ROM - the sequence of electrical impulses or the pattern of circuits - was a 'work', ie a literary work, for it was not a dramatic, musical or artistic work. It seems to me a complete distortion of meaning to describe electrical impulses in a silicon chip, which cannot be perceived by the senses and are not intended to convey any message to a human being and which do not represent words, letters, figures or symbols as a literary work; still less can a pattern of circuits be so described.'

(b) Brennan J at pp.21-22 said:

'Section 22 implies that the form in which a literary work is expressed is writing or some other material form. A material form is a form which can be perceived by the senses. ... But a form from which the words, letters or figures of a literary work cannot be perceived by sight or touch (or, possibly hearing) is not a material form to which the work has been reduced. The electrical charges which constitute the object programs cannot be seen or touched or heard or, if they can, they do not communicate letters of the original literary work, the source programs. Nor, for that matter, do the electrical charges communicate the letters or figures by which an object program may

be represented. The object programs are not literary works.'

(c) Deane J at p.31 said

'Of itself, however, and regardless of how widely one construes the phrase, the arrangement (or series) of electrons or electrical charges in the silicon chip does not constitute a single 'literary work'. It is not written. It is not a comprehensible language. It cannot be read. It cannot even be seen. Nor is it designed or produced to be read or seen. It is, and was designed and produced to be, an attribute of a functioning part of an operating machine.'

5. Supra, note 1

6. Supra, with Mason CJ, Brennan and Deane J saying:

'... the 127-bit series embedded in the EPROM in the Auto Key lock constituted a reproduction in a material form ...'

and Dawson J, with whom Gaudron J agreed, saying:

'Whilst the 127-bit look-up table does not of itself constitute a computer program within the meaning of the definition ... it is a substantial part of Widget C and its reproduction in the Auto Key is a reproduction of a substantial part of that

program. It is a reproduction of a substantial part of that program in a material form ...'

7. Supra, note 1, see also note 4(a)

8. Apple Computer, supra, note 1, see also note 4(c)

9. Apple Computer, supra, note 1, see also note 4(b)

10. Apple Computer, supra, note 1 at p.16:

'Ordinarily and traditionally it is no doubt true that a literary work would take a written form ... but the Act does not require it to be so. Indeed, s.22(1) of the Act identifies the time when a work is made as the time when 'the work was first reduced to writing or to some other material form' (our emphasis). See also s.21 of the Act. There seems to be no reason to doubt that a literary work is made and entitled to copyright protection from the time it is first recorded on tape, if that be the first material form the work takes. In our opinion, an object code, although brought into existence by mechanical means, takes on the same literary character as is possessed by the source code from which it is derived. This conclusion seems necessarily to follow, if the protection secured by the Act to the source programs as original literary works is to be effective. If there

is no copyright in the object programs which are a natural and necessary derivative of the source programs, then there is no point in protecting the source programs.'

11. Supra, note 1

12. Explanatory Memorandum - Copyright Amendment Bill 1984 note (28)

13. Supra, note 1

14. Supra, note 1

15. Supra, note 1

16. Supra, note 1

17. Supra, note 1

18. Supra at p.145. Beaumont J, with whom Lockhart J agreed on the cross appeal, did not find it necessary to decide the issue.

19. Ibid

20. Supra, Gibbs CJ at p.9, Mason and Wilson JJ at p.16 and Brennan J at p.23. Deane J did not find it necessary to decide the point.

21. Gibbs CJ at p.8, Brennan J at p.23 and Deane J at p.30. Cf. Mason and Wilson JJ held that it would be an adaptation.

22. Supra at p.234 where he held object code programs in ROM form to be computer programs under the Act.

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