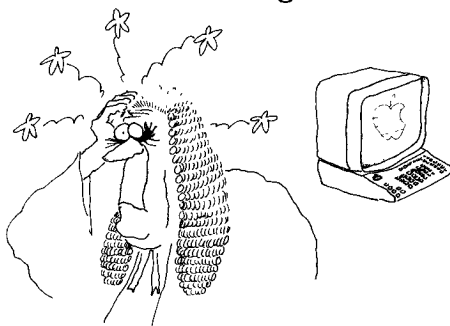


Case Note:

Apple Computer Inc. v. Computer Edge Pty Ltd

J. McKeough*



The novelty of much computer technology, the rate of change in the industry, the various forms that computer programs can take and the difficulty of classifying software within existing regulatory and protective schemes means that the issue of legal protection for computer software is unresolved, even in principle. The terms “software” and “program” are used interchangeably although not strictly speaking synonymous, as a computer program may be embodied in “hardware” or “firmware” also. A committee of experts meeting under the auspices of the World Intellectual Property Organisation in June 1983 to consider the question of protection of computer software on an international basis, concluded that it was premature to take a stand on the question of the best form for the international protection of computer software as the conceptual basis for that protection was not yet clear.¹ Certainly, the issue has not arisen in Australia until very recently, with the result that no regime for the protection of computer programs has existed.

Protection of computer programs raises several threshold issues including the definition of “computer software” or “computer program”, the nature and extent of the protection required, and by whom. One basic problem would appear to be the conclusion that “software is property” which the industry assumes, and

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1. “W.I.P.O.: Legal Protection of Computer Software” (1983) 17 *J. World Trade Law*, 537, 544-545.

which government and legislative policy appears to support. The recently released Federal Government report on developing the local information technology industry² recommends government incentives to increase Australia's involvement in computer-related high technology industries, including the development of software for specialised markets. The realisation that computer software is a valuable commodity with regard to both export and indigenous markets leads to the assumption that software is therefore property of an intellectual or industrial nature and thus worthy of legal protection.

In fact software does not readily fit into existing regimes for the protection of intellectual and industrial property which are themselves exceptions to the general rule that even an undisguised appropriation of another's efforts is not protected (including copying of a product)³ unless threshold criteria are met which establish infringement of a right known to the law. Since medieval times parliament and the courts have shown an antipathy to restrictive trade practices in an attempt to avoid manipulation of the market place through the exercise of monopoly rights. Free competition was seen as a better way of serving the public interest.

The conclusion seems to have been reached that software is a product amenable to protection as a form of property, despite the protestations of the Software Liberation Lobby (led by Albert Langer) who advocate public funding of software either through commercial or government channels, much as we have in public broadcasting.

I. COPYRIGHT

Copyright is regarded as the area of existing law most apt to protect computer software. In the first Australian attempt to establish copyright in a computer program,⁴ computer programs were held at trial not to be literary works within the Copyright Act 1968 (Cth) and therefore unprotected by that statute. In that case, Apple Computer Inc. ("Apple") sought an injunction, damages and an account of profits based on allegations that Computer Edge Pty Ltd ("Computer Edge") had imported into and sold in Australia a computer manufactured in Taiwan known as a

2. *Information Technology in Australia* A.G.P.S. 1984.

3. *Parkdale Custom Built Furniture Pty Ltd v. Puxu Pty Ltd* (1982) 42 A.L.R.

1.

4. *Apple Computer Inc. v. Computer Edge Pty Ltd* [1983] A.T.P.R. 40-421.

“Wombat”, which sold for less than half the price of the Apple II computer of which it was a copy. The software or programs for the Wombat system were also copied. The only difference in a printout produced from each program was that “Wombat” appeared where the word “Apple” had appeared in the plaintiff’s program. For the purposes of the copyright issue, the unauthorised copying of software had occurred overseas and was thus an indirect infringement within the Copyright Act.⁵

To infringe the Copyright Act 1968 (Cth) the infringing item must be copied from a recognised category of subject matter and embodied in a material form. In the software area, for reasons of basic copyright law, the software must be characterised as a “literary work” if it is to be protected.⁶ A “literary work”⁷ in section 10 of the Act includes a written table or compilation, and writing is defined in section 10 as “a mode of representing or reproducing words, figures or symbols in a visible form” and ‘written’ has a corresponding meaning. Thus the definition of writing in the Act depends in turn upon what “a visible form” means, and may also depend upon what is regarded as “material form” since this is only partially defined.⁸

The case of *Apple Computer Inc. v. Computer Edge Pty Ltd* (“the *Apple Case*”) dealt with computer programs in both source code and object code. The programs were embodied in ROMs or EPROMs or a combination thereof. The two types of program in question were “Applesoft” programs written in Assembly Language 6502 known as “Applesoft Source” or in machine language, known as “Applesoft Object”. Similarly, a program known as “Autostart” was expressed in both languages. The *Apple Case* did not concern a higher level language. These types of computer program have different functions to perform in the operation of a computer.⁹ Some programs can be stored permanently in a memory device called a ROM (Read-Only

5. Ss.37,38.

6. It has been suggested that a program could come within the category of “sound recording” and if so, presumably could be protected as such. In the U.K. computer programs are “broadcast on radio, the recipient being intended to record the broadcast on an ordinary cassette tape and then run the program on an available computer.”

7. The list in s.10 of what is included in a “literary work” is not exclusive or even comprehensive.

8. Copyright Act 1968 (Cth) s.21(1).

9. For an explanation of these terms, see Mr. Justice Fox’s judgement in *Apple Computer Inc. v. Computer Edge Pty. Ltd.* (1984) 2 I.P.R.1, 6-10 from which this passage is derived.

Memory) embodied in a silicon chip. These are placed inside the computer when manufactured, but can be replaced. They cannot be altered and the information or "memory" is not lost when the computer is turned off. This type of memory is usually used to hold data which must be available to the computer when the power is turned on.

Other programs or information is made available to the computer when a magnetic disc comprising a program is placed into the disc drive unit. The RAM (Random Access Memory) stores this program while the computer is on, but does not retain it. Programs of this kind are called "software". Another memory device is called an EPROM (Erasable Programmable Read Only Memory) which is variable; information may be retained or erased.

The original program or set of instructions for the Apple II computer was written in source code, that is, a computer language understood by trained persons but not by the computer, which understands electrical impulses. By typing a source program into a computer the appropriate electrical impulses are recorded (with the use of an "assembler" or "compilation" program) which allows the machine to operate. This program is then expressed in object or machine readable code.

Apple claimed that three of the silicon chips in the Wombat were not what they appeared to be, that is, devices for controlling the operation of a computer, but were in fact literary works subject to copyright. These silicon chips were said by Apple to be "in writing" because their content could be deciphered through an electron microscope.

It was held at trial that none of the programs were literary works within the 1968 Copyright Act because of the definition by Beaumont J. of "literary work" as something intended to afford information, instruction or pleasure in the form of literary enjoyment.¹⁰ A computer program merely drives a machine that is, controls the sequence of operations carried out by the computer without performing these other functions.

On appeal, Apple's claim to copyright in their computer programs was upheld by a majority of the Full Federal Court. It was held that the source code was copyright as a literary work and the object code was an adaptation thereof within section 31(1)(a)(vi) of the Copyright Act since it could be viewed as a translation. The source code conveyed a meaning to suitably

10. *Exxon Corporation v. Exxon Insurance Consultants International Ltd* [1982] RPC 69,88.

trained people¹¹ and there is a distinction between the functioning of the machine due to electro-magnetic functions and the computer program itself which contained instructions for the storage and reproduction of knowledge.¹²

Mr Justice Fox disagreed with Beaumont J's application of the *Exxon Case*,¹³ saying that the definition of literary work given there "is not, nor was it intended to be, exhaustive."¹⁴ Bearing in mind that the definition of literary work adopted by Beaumont J. was framed during the last century,¹⁵ Fox J. observed a tendency to apply the language of copyright law as derived from the statute in a practical manner, consistently with the needs of the time and the then current concepts.¹⁶ With this in mind his Honour went on to say:

In my view the source codes before us express meaning as to the arrangement and ordering of instructions for the storage and reproduction of knowledge. It is incorrect to describe them simply as components of a machine. With respect, I do not agree with the statement accepted by the learned judge which suggests an analogy with 'something merely intended to assist the functioning of a mechanical device'. There is a distinct and recognised difference between a computer program and the electro-magnetic functioning of the machine. The codes are, in my view, original literary works.¹⁷

Having found that the source code was a literary work, Fox J. considered whether the object codes in the Apple II ROMs were adaptations of the source code so as to infringe sections 31(1)(a)(vi) of the Copyright Act 1968 (Cth) which gives copyright in an adaption of a literary work. Section 10(1) of the Act provides that a translation of a literary work is included in the definition of adaptation. Fox J. said "[T]he object codes contained in the Apple II ROMs are a straightforward electronic translation into a material form of the source codes, and it would be entirely within ordinary understanding to say that they are translations of the source code"¹⁸.

His Honour found it unnecessary to consider whether the object codes could be regarded as literary works in themselves, since an adaptation can be protected by copyright without itself being subject matter capable of protection.

11. Note 9 *supra* 11, *per* Fox J.

12. *Ibid.*

13. Note 10 *supra*.

14. See note 9 *supra* 11, *per* Fox J.

15. From *Hollinrake v. Truswell* [1894] 3 Ch 420.

16. See note 9 *supra* 11, *per* Fox J.

17. *Ibid.*

18. *Ibid.*

The infringement of copyright within section 36(1) lies in doing (unless authorised) any act comprised in the copyright. In respect of a literary work these acts are described in section 31(1) and include reproducing the work or an adaptation thereof in a material form, even if in a different medium. Fox J. was not concerned with the exact method of copying the Wombat ROMs from the Apple ROMs, nor with the fact that the chips themselves might look different when seen through an electron microscope. Nor did it matter that a number of Apple ROMs were copied onto a smaller number of Wombat ROMs and one EPROM. What was sufficient for copyright infringement was that the adaptation of the Apple program was rendered perceptible with a machine; that is the print-outs of the programs showed that the arrangements of the object codes were identical, or virtually so. Moreover, a printout recovered from either ROMs could allow the object code to be reproduced.¹⁹

Thus Fox J. concluded that the object code which Wombat's makers had copied from Apple ROMs was capable of protection under the Copyright Act as an adaptation of a literary work. The other requirements of the legislation as to originality of endeavour, ownership of the copyright and knowledge of the infringement were also satisfied so that injunctive relief was granted.

Mr Justice Lockhart in his decision on the copyright issue agreed with Fox J. that a computer program in source code can be a literary work, and a program in object code could be an adaptation of the former.

Lockhart J. outlined the relationship between source and object codes, in that the former is a higher level language comprehensible to the programmer, (including assembly language) and the latter a machine readable language. The conversion from one to the other occurs with the use of an assembler program, by taking the program written in assembly language (source code) and converting it into machine language (object code).²⁰ Having done so, His Honour went on to find that the Applesoft Source and Autostart Source programs were new and original works in which copyright exists. They were first made when written down on paper.

19. *Id.*, 13.

20. *Ib.*, 27 *per* Lockhart J.

It is irrelevant that 6502 Assembly Code is a computer language comprised of three letter mnemonics, each a shorthand representation of English words, phrases or sentences. It is a highly developed language, plainly intelligible to people familiar with it or skilled in its use.²¹

Like Fox J., Mr Justice Lockhart distinguished between the expression of ideas in composition or language, which is amenable to copyright protection, and the function or purpose of those ideas, (here, to control the sequence of operations carried out by a computer) which is irrelevant to the issue of protection.²²

Lockhart J. also found that object code can be a translation of source code for the purposes of gaining copyright protection. The translation from source to object code is a mechanical process with no creative element.²³ As to whether object code itself can be an original literary work in which copyright subsists, His Honour acknowledged that there were strong arguments in favour of this conclusion but declined to decide the question as he held reservations as to the correctness of the view, and it was not necessary to come to that conclusion to protect the object code in this case.²⁴

Having determined that the other elements of infringement were made out, Lockhart J. concluded that,

... copyright legislation should be construed liberally and with a view to the furtherance of justice. In particular, such legislation should be interpreted to keep pace with technological innovation.²⁵

In his dissenting judgment Mr Justice Sheppard agreed for the reasons given by Fox and Lockhart JJ., that the programs as originally written in source code were literary works,²⁶ but did not agree that the programs in object code were adaptations of the programs in source code, nor literary works in themselves.

The appellants had to establish that the ROMs with the programs fixed in them were literary works or adaptations because it was the ROMs which the manufacturer of the Wombat computer copied.

The programs in object code were found not to be literary works because a program when fixed in a ROM cannot be seen, only dealt with by the computer²⁸ which recognises what is merely a series of magnetic polarisations.

21. *Id.*, 35.

22. *Id.*, 36.

23. *Id.*, 38.

24. *Id.*, 39.

25. *Id.*, 46.

26. *Id.*, 51 *per* Sheppard J.

27. *Id.*, 52.

28. *Id.*, 52.

Using similar reasoning, the object code was found by Sheppard J. not to be an adaptation of the source code. The type of adaptation applicable to the conversion from source to object code was, within section 10(1) of the Copyright Act, a translation. Mr Justice Sheppard decided that, in the context of the legislation a translation of a literary work needs to be capable of being seen or heard.²⁹ The Copyright Act envisages

... that what is the subject of copyright (whether a word or an adaptation thereof) will, although not immediately published and perhaps never published, be capable of being published and thus being seen or heard... In short, adaptations of literary works, like literary works themselves, must, in my opinion, be capable of being seen or heard.³⁰

Despite the fact that the computer could produce a printout in binary or hexadecimal notation of the ROM, His Honour decided this was irrelevant as only the machine could "understand" or "see" and thus deal with the object code.³¹ Sheppard J. distinguished cases concerning pianola rolls³² on the basis that in these cases the music could be heard when played on a pianola, whereas object code is comprehensible only to a machine.

II. TRADE PRACTICES ACT

The main scope for protection of software under the Trade Practices Act 1974 (Cth) lies in the marketing aspect. In the *Apple Case* the plaintiff's claim that marketing of the Wombat computer was misleading and deceptive within section 52 of the Trade Practices Act, or a false representation of approval or affiliation with the manufacturer of Apple Computers within section 53(c) and (d), was successful on appeal. Mr Justice Lockhart (with whom Sheppard J. agreed) found that by supplying Apple user manuals with the Wombats the defendants had infringed both sections.³³ Mr Justice Fox said that he did not necessarily agree with the trial judge that section 52 had not been breached, but that it was possible that a purchaser would feel the Apple and Wombat products were associated, and referred the matter back to Beaumont J. for a ruling under section 53(c), which prohibits a corporation from representing that goods have a sponsorship which they do not have.

29. *Id.*, 53.

30. *Id.*, 54.

31. *Id.*, 52.

32. *Boosey v. Whight* [1900] 1 Ch. 122 *White-Smith Music Publishing Co. v. Apollo Co.* (1908) 209 US 1.

33. *Apple Computer* note 9 *supra*, 45 *per* Lockhart J.

The decision at trial on the section 52 point was that since product copying as such is not actionable as long as the products are sufficiently labelled,³⁷ the defendant had not infringed the section. This was also accepted on appeal, however the supply of an instruction book intended for the plaintiff's product, as a manual for the defendant's product was held to be likely to mislead or deceive within section 52 and also constituted an untrue representation within section 53.

Among the conclusions to be drawn from the decision in the appeal of the *Apple Case* is the fact that the work of a computer programmer in first producing a program in a high level language is subject to copyright protection. On this, the judges were unanimous. Although the *Apple Case* dealt with assembly language, presumably work first produced in other languages, including BASIC, FORTRAN, COBOL and PASCAL (to give only a few examples) will also be protected. It is also apparent that, at least on the majority judgments, some other expression of the program will be protected if classified as an adaptation of source code. Both Fox and Lockhart JJ. referred in their judgments to the desirability of construing copyright law to best serve the needs of the time. Lockhart J. also made a plea for some sort of specifically applicable protection for computer programs having regard to business, political and technological considerations, since the existing copyright legislation should not be strained to bring within its scope "subject matter which, although perhaps deserving of protection, is not conformable with the principles developed by courts over many years of experience."³⁴ Sheppard J. expressed sympathy with the appellants but did not regard the existing copyright legislation as apt to protect "this kind of piracy".³⁵

In coming to the conclusions they did the Full Federal Court did not rely on any authorities from other countries as to the protection of object code by copyright. In fact in two American cases³⁶ it was held that for an item to be copied within the meaning of the U.S. copyright legislation it must be oculegentic, or eye-readable.

Since ROMs are oculopacic, or non-eye-readable (literally, eye-obscure) they cannot be copied in the relevant sense, and a ROM

34. *Id.*, 46.

35. *Id.*, 54 *per* Sheppard J.

36. *Data Cash Systems Inc. v. Js and A Group Inc.* 203 USPQ 735 [D.C., N.D.111., E.Div 1979] [1980] EIPR 25 *Synercom Technology Inc. v. University Computing Company*, 204 USPQ29 (D.C., N.D.Tex., Dallas Div. 1979).

is a mechanical tool or a machine part, but not a "copy" of the source code, being a different expression of the same idea,³⁷ and copyright protects only the method of expression, and not the ideas expressed.

The majority decision of the Full Federal Court in the *Apple Case* has to a large extent been superseded by the enactment of amendments to the Copyright Act.³⁸ The government's move followed intense public scrutiny of the issues following the decision by Mr Justice Beaumont at the trial of the *Apple Case*, but before the appeal was decided. The legislative changes aim to make computer software protectable as a literary work within the Copyright Act.³⁹ The legislation is designed as a short term or "sunset" provision to give immediate protection to computer programs, whether in source or object code and whether on paper or in machine readable form.

Section 3(b) of the amending legislation provides the following definition:

'computer program' means an expression, in any language, code or notation, of a set of instructions (whether with or without related information) intended, either directly or after either or both of the following:

- (a) conversion to another language, code or notation;
- (b) reproduction in a different material form, to cause a device having digital information processing capabilities to perform a particular function;

The Act also expressly treats as "adaptations" programs derived by translation from one language to another.⁴⁰ To complement these changes, the offence provisions of the Copyright Act have been strengthened to penalise advertising relating to the supply of infringing copies of computer programs.⁴¹ The Act aims however to recognise the legitimate interests of educators and researchers by providing that existing fair dealing provisions apply to all forms of software, and that a "back-up copy of a program may be made without infringing copyright."⁴² It is to be noted that the fair dealing provisions themselves have been liberalised in connection with the copying of material by educational institutions and libraries.

Australian copyright legislation now provides that a computer

37. See L. Melville "Computer Software and the Relevance of Copyright" [1980] *EIPR* 354 for a discussion of these cases.

38. Copyright Amendment Act 1984 (Cth).

39. S.3(f).

40. S.3(a).

41. S.6.

42. S.4.

program or an adaptation thereof is a literary work protectable by copyright. However, the palimpsest upon which these amendments rest is itself based on the Spicer Committee Report, completed in 1959. This was long before personal computer systems were envisaged, and the existing legislation requires the subject matter it protects to be in a material form. This is only partially defined by the Copyright Act, and the amendments further provide that:

‘material form’ in relation to a work or an 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.⁴³

In the U.S.A, a handful of teledistribution or teledelivery companies are already “downloading” software into users’ computers using cable broadcasts, FM sub channels, and telephone lines. To such users, Teledistribution is the most convenient, efficient and inexpensive software sales channel available. A company called Control Video Corporation in Virginia has a teledistribution service called Game Line. By purchasing a receiver called a Master Module the user of a personal computer can receive the relevant software (computer games) and is charged for each game played.⁴⁴ Similarly, with most publications now typeset by computer and optical character recognition becoming cheap enough to feed in already produced printed material, libraries will be able to supply copies of anything published instantaneously, by cable or telephone. Whether the legislation as amended will cover such a situation remains to be seen. Both Fox and Lockhart JJ. suggested that legislation be interpreted in the light of current needs, but it may be that copyright itself is redundant when dealing with technology at this level, and the issue of whether the subject matter under discussion is covered by copyright legislation may be obsolete.

Leave to appeal to the High Court from the decision of the Full Federal Court has recently been granted in the *Apple Case*. Whatever the issues there discussed, they will be confined to the particular subject matter of that case and may therefore be of limited application to software generally, apart from which, the legislature has pre-empted the result by, in effect, statutorily enacting the majority decision of the Full Federal Court.

However the *Apple Case* presents an interesting situation. The judgments of Fox and Lockhart JJ. have created, in effect,

43. S.3(g).

44. See L. Stahr, “Special Delivery Software” (1983) 1 *P.C. World* 69.

retrospective breaches of the now amended Copyright Act. Yet the amending act itself provides in section 7(2):—

Where, by virtue only of the amendments made by this Act, copyright subsists in a work that was made before the commencement of this Act —

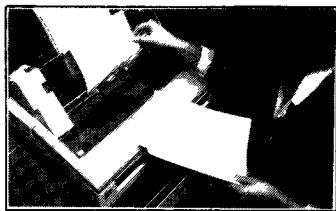
- (a) nothing done before the commencement of this Act shall be taken to constitute an infringement of that copyright;
- (b) nothing done in relation to the work before the commencement of this Act shall be taken to constitute an offence against section 132 of the Principal Act; and
- (c) without limiting the generality of paragraph (a), a reproduction of the work, or of an adaptation of the work, made in, or imported into, Australia before the commencement of this Act shall not be taken to be an infringing copy of the work.

The preliminary words of section 7(2) indicate a clear intention on the part of the legislature that the amendments have no retrospective operation. Although almost identical in effect, the legislation is not based upon the Federal Court's decision, being drafted before this was handed down. It is open to Computer Edge (the defendants in the *Apple Case*) to argue however that although their activities in pirating Apple II computer programs would now infringe the amended Copyright Act, that legislation itself provides that the copying engaged in cannot be impugned by the courts as it took place before the commencement of the legislation. The answer to this is of course that the breaches of copyright in the *Apple Case* did not arise "by virtue only of the amendments made by this Act" (section 7(2)), but were rather the result of judicial pronouncement. Acceptance of the former argument would create the anomalous situation of the very legislation enacted to prohibit the sort of activity engaged in by Computer Edge in fact protecting that defendant.

Whatever the outcome of the appeal to the High Court, the issue of legal protection of computer programs will be only partially resolved. It may be that Mr Justice Sheppard's dissenting judgment in the Full Federal Court, where he disapproved of such piracy but without being prepared to stretch the existing legislation to fit, will stimulate those concerned with safeguarding computer programs to formulate some mode of protection which efficiently and adequately caters to technological developments.

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