

Copyright protection of computer programs in Australia

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The most significant recent case to consider the extent of copyright protection of computer software programs in Australia was the decision of the High Court in *Data Access Corporation v Powerflex Services Pty. Ltd. and Others*¹ ("Powerflex"). The decision in *Powerflex*, its relationship with the other relevant cases and its ramifications will be discussed below, as will the recent legislative amendments affecting the copyright protection of computer software programs.

COMPUTER PROGRAM AS A LITERARY WORK

Section 10(1) of the Copyright Act defines a literary work as including "a table, or compilation, expressed in words, figures or symbols (whether or not in visible form) and a computer program or compilation of computer programs."

Until the Copyright Amendment (Digital Agenda) Act 2000 ("the Digital Agenda Act") came into operation² a computer program was defined as follows:

"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: conversion to another language, code or notation; reproduction in a different material form; to cause a device having digital information processing capabilities to perform a particular function."

This definition was considered in detail by the High Court in *Powerflex*.

DATA ACCESS CORPORATION V POWERFLEX SERVICES PTY LTD

Data Access Corporation ("Data Access") claimed that the computer program "PFXplus" developed by Powerflex Services Pty. Ltd. ("Powerflex") infringed its copyright in its "Dataflex" program. Both programs were used to develop customized database applications. PFXplus was developed, by a process of reverse engineering, to be compatible with Dataflex so that people accustomed to using the Dataflex language could readily adapt to the PFXplus language and use it on their existing dataflex database. Of the 254 "reserved words" or commands used in the Dataflex language (such as "save" and "pagebreak") 192 were used in the PFXplus language to cause a computer to perform the same function. However the source code (and possibly the object code) underlying each of those words was not the same.³

Julian Burnside QC, the Barrister who appeared for Data Access in the Federal Court, observes that the case arose directly out of Data Access attempting to prevent Powerflex competing against it with a functionally equivalent program. Data Access charged an initial purchase (license) fee and a "run-time" license fee, whereas Powerflex just charged an initial license fee. He said "[i]t was a fairly hard-edged marketing exercise"⁴ and went on to say:

"Some people would regard the *Powerflex* case as an example of robust competition between creative designers, and that's a legitimate view. Other people might see it as predatory marketing using an existing software package as a springboard towards easy success"⁵

Data Access claimed that Powerflex had infringed its copyright by copying many of the reserved words as well as three macros and the Huffman compression table. Each of those arguments is discussed in this paper.

Data Access were successful at first instance in the Federal Court⁶ but that decision was overturned on appeal to the Full Court of the Federal Court⁷, except with regard to the finding that PFXplus infringed copyright in the Huffman compression table. The High Court⁸ upheld the decision of the Full Court of the Federal Court.⁹

The Reserved Words

Data Access claimed that:

1. each of the reserved words was a computer program as defined in the Copyright Act and therefore protected by Copyright; or
2. a collocation of the reserved words was a computer program; or
3. alternatively the collocation of reserved words is a substantial part of the Dataflex system which is a literary work; or
4. the table or compilation of reserved words in its user's guide was protected as a literary work.

Each of these arguments will be considered in turn.

WAS EACH RESERVED WORD A COMPUTER PROGRAM?

Data Access contended that each of the reserved words satisfied the definition of a computer program because it was an expression in code or notation of a set of instructions (being either the underlying set of instructions in source code or the meaning and syntax of the word or command in question) which, after conversion to a lower level language, caused a computer (being a device

having digital information processing capabilities) to perform a particular function.¹⁰ Even Burnside QC concedes that this argument “does not logically spring to mind as what the draftsmen intended.”¹¹ The High Court disagreed with the argument because “each of the reserved words is a single word; none is a set of instructions ... [and]... none of the reserved words intends to express, directly or indirectly, an algorithmic or logical relationship between the function desired to be performed and the [computer]”¹²

At first instance Jenkinson J adopted the approach in *Lotus Development Corp v Paperback Software International*¹³ that there was more than one way of expressing the idea conveyed by each reserved word and therefore they had not merged with the ideas they expressed and were capable of being protected by copyright. He went on to hold that each of the reserved words was a set of instructions which fell within the definition of a computer program.¹⁴

The Full Court took the opposite view saying “[e]ach of the words in the so-called Dataflex language is but a cipher. The underlying program is the set of instructions which directs the computer what to do when that cipher is in fact used. ... The cipher or command is not an expression of the set of instructions. ... It is the trigger for the set of instructions to be given effect to by the computer. It may not be inaccurate to describe each of the commands as itself an instruction. ... But it is in our view not accurate to refer to each of the words as being an expression of the set of instructions. The set of instructions is expressed in the source code which is the computer program.”¹⁵

The Full Court took support from the following comment of Gaudron J in *Autodesk Inc v Dyason (No.2)*:

“[I]t is, in my view, clear that expression directs attention to an entire instruction, or, more accurately, an entire set of instructions, and not merely those parts that consist of bare commands. So much is confirmed by the language used in the definition and by its context.”¹⁶

The High Court in *Powerflex* continued in this vein as follows:

“[A]t the highest level of abstraction, each of the reserved words in Dataflex may ... be regarded as an expression of an instruction which is intended to cause a [computer] to perform a particular function. However, [Data Access] must show that each reserved word is an expression ... of a set of instructions ... intended, either directly, or after ... conversion to another language, code or notation ... to cause a [computer] to perform a particular function.”¹⁷

Data Access argued that each reserved word became a set of instructions after conversion to “another language, code or notation” (i.e.: source code) and was therefore an expression of a set of instructions falling within the definition of a computer program.

The High Court agreed that the source code was “a set of instructions” but considered that an expression must be a set of instructions in each language or, to put it another way, at each level of abstraction. They considered that the word “an” in the definition of a computer program related to a singular expression in a particular language.¹⁸

From a close reading of the definition it is apparent that the expression must also be a set of instructions before conversion to another language because “computer program means an expression in any language, code or notation of a set of instructions ... intended either directly or after ... conversion to another language, code or notation ... to cause a [computer] to perform a particular function”.

The High Court quoted from the explanatory memorandum to the Copyright Amendment Bill 1984¹⁹ (which introduced the definition of computer program) and then went on to say:

“It is the particular selection, ordering, combination and arrangement of instructions within a computer program which provide its expression. ... It is the skill of the programmer in a particular language which determines the expression of the programmer in that language. The

explanatory memorandum states that it is the ‘particular expression’ of an abstract idea which is protected.”²⁰

The High Court is clearly focussed on the traditional idea/expression dichotomy of copyright law at this point and that can be seen as the policy reason for the decision. A programmer is entitled to protection for the way he has expressed the instructions necessary to cause the computer to perform the intended function, but the idea of making the computer perform the function is not protected.²¹

Blackmore observes that “drawing a line between idea and expression simultaneously involves drawing a line between function and expression.”²² In the United States Judge Learned Hand said “nobody has ever been able to fix that boundary and nobody ever can”.²³

The High Court goes on to observe that a computer program must be an expression of a set of instructions which is intended to cause a computer to perform a particular function. They note that a computer program causes a computer to perform a set of logic operations, therefore:

“[i]f a set of instructions in a high level language is intended to cause a computer to perform a particular function, it is an expression which intends to express an algorithmic or logical relationship between the desired function and the physical capabilities of the computer, albeit indirectly.”²⁴

They note that the definition of computer program distinguishes between instructions for the computer and related information (such as programmer’s notes) and that only the former are relevant when considering the definition of computer program. Therefore the High Court states that “something is not a ‘computer program’ ... unless it intends to express, either directly or indirectly, an algorithmic or logical relationship between the function desired to be performed and the physical capabilities of the [computer]. Thus in the sense employed by the definition, a program in object code causes a

device to perform a particular function 'directly' when executed. A program in source code does so "after ... conversion to another language, code or notation"²⁵

The High Court also rejected Data Access's argument that each reserved word was a set of instructions due to the meaning and syntax of the word because the meaning and syntax appeared in the underlying source code rather than the word itself. They approved the Full Court's argument that the precise word used is irrelevant so far as the computer is concerned; it would perform the same function if a different word was associated with the underlying program. They observed that "the particular characters of a reserved word in the Dataflex language, considered alone, do not intend to express a logical or algorithmic relationship between the function it intends to cause the computer to perform and the physical capabilities of the computer."²⁶ They noted that the words are chosen so that the people using the program can associate the word with the function it causes the computer to perform, but so far as the definition of computer program is concerned the word needs to mean something to the computer, not the person using it.

The High Court concluded their discussion of whether copyright subsisted in each reserved word by identifying the point at which words in a programming language will be protected by copyright:

"Once more than one instruction is expressed in a high level language with the intention that the expression will, after conversion to object code, cause a computer to perform a particular function, there will ordinarily be a computer program for the purposes of the Act. The choice and interrelationship of the particular instructions used and their sequence and structure will ordinarily constitute the expression of a logical or algorithmic relationship between the function intended to be performed and the physical capabilities of the computer. The conclusion that the reserved words themselves are not a computer program does not mean that their expression in source code and

object code is not a computer program."²⁷

It has been noted²⁸ that many of the commands used in Dataflex were industry standards and therefore should also not be protected by copyright because they lacked originality.

2. CAN A COLLOCATION OF RESERVED WORDS BE A COMPUTER PROGRAM?

With regard to this submission Burnside QC said, "although I do not say it's an overwhelmingly good argument, I think it's a respectable argument."²⁹ However the High Court decided that a collocation of reserved words is not a computer program because, although a list of reserved words is a set of instructions, it did not cause a computer to perform a particular function. Furthermore, "[t]here is no interrelationship of the instructions with one another which is an expression of a logical or algorithmic relationship between an identifiable function and the physical capabilities of the computer..."³⁰

The High Court goes on to say that the fact that the function of the words is to enable a programmer to write a computer program is irrelevant because, as mentioned above, the intended function must relate to the computer, not the programmer.

The High Court did not consider an alternative argument that the reserved words comprised the Dataflex language which could be protected as a literary work per se rather than as a computer program. Indeed the barrister who appeared for Data Access in the Federal Court "balk[ed] at the proposition that the question was whether you can have copyright in a language"³¹ Rothnie observes³² that such a finding could be based on some old cases³³ which granted copyright protection to a telegram code as a literary work. That conclusion is analogous to the High Court's finding that the Huffman compression table was protected as a table or compilation and thus was a literary work, even though as a computer program it probably was not protected. It would, however, be open to the court to reject that argument on

the policy ground that user commands should be available to enable the development of interchangeable programs.

3. DID THE COLLOCATION OF RESERVED WORDS FORM A SUBSTANTIAL PART OF A LITERARY WORK?

The High Court commenced its discussion of this issue by stating that "[t]he Dataflex system is a computer program. Hence it is a literary work for the purpose of the act."³⁴ That led the court to reconsider their decision in *Autodesk v Dyason* Nos. 1³⁵ & 2³⁶ regarding what constitutes a substantial part of a literary work.

Data Access argued that the collocation of reserved words was protected as a substantial part of the Dataflex system. It relied on *Autodesk No 1*³⁷, which held that a reproduction of a substantial part of a computer program need not itself be a computer program. It was held by the High Court in those cases that the 127 bit look-up table (equivalent to only about sixteen characters) was a substantial part of the program in question (despite not being a computer program in itself because it was not a set of instructions) because it was an essential, critical or crucial part of the program. The High Court in *Powerflex* observes that the reasoning in the *Autodesk* cases "appears to come close to a 'but for' analysis, that is but for the look-up table, the ... program would not [operate] and therefore the look-up table was a substantial part of the program."³⁸ The High Court took note of the criticism by Mr. Prescott QC of the decision in *Autodesk No 1* on the basis that even one bit may be essential to a computer program but is not necessarily "a substantial production of the human mind."³⁹ They also noted the comment of Mason CJ (dissenting) in *Autodesk No 2* that "[t]he reproduction of a part which by itself has no originality will not normally be a substantial part of the copyright and therefore will not be protected."⁴⁰ This led the High Court in *Powerflex* to disapprove the *Autodesk* decisions:

“[I]n the context of copyright law, where emphasis is to be placed on the ‘originality’ of the work’s expression, the essential or material features of a work should be ascertained by considering the originality of the part allegedly taken. ... There is great force in the criticism that the ‘but for’ essentiality test which is effectively invoked by the majority in Autodesk No 2 is not practicable as a test for determining whether something which appears in a computer program is a substantial part of it. For that reason we prefer Mason CJ’s opinion that, in determining whether something is a reproduction of a substantial part of a computer program, the ‘essential or material features of [the computer program] should be ascertained by considering the originality of the part taken.”⁴¹

From an Anglo-Australian point of view originality has traditionally been determined by the amount of skill or labour involved in creating the work.⁴² In contrast the American courts have rejected the “sweat of the brow” approach and instead require a work to be independently created and to exhibit at least a minimal degree of creativity.⁴³

The High Court went on to consider what determined originality in the context of a computer program. They said that, because a computer program “must intend to express, either directly or indirectly, an algorithmic or logical relationship between the function desired to be performed and the physical capabilities of the [computer]” then:

“the originality of what was allegedly taken from a computer program must be assessed with respect to the originality with which it expresses [the] algorithmic or logical relationship ... The structure of what was allegedly taken, its choice of commands, and its combination and sequencing of commands, when compared at the same level of abstraction, with the original, would all be relevant to this inquiry.”⁴⁴

They then went on to say that data which, to be created, did not require the skill involved in developing the structure of the program and the

choice, combination and sequencing of commands would be unlikely to be a substantial part of the program and therefore such data could be copied without infringing the copyright in the program.

Therefore they held that because each reserved word could be replaced with any other word and the computer could still be programmed to perform the same function the reserved words were irrelevant to the structure, choice of commands and combination and sequencing of commands in the source code and were therefore not a substantial part of the Dataflex programming system, unless they were inherently original. However the reserved words included ordinary English words, such as ‘clear’ and ‘save’, concatenations of English words such as ‘pagebreak’ and made up words which were suggestive of their function such as ‘moveint’. The High Court held that the reserved words did not possess sufficient originality as data to be a substantial part of a computer program.⁴⁵

Gaudron J disagreed with the reasoning of the majority set out above. She argued that although the look-up table in the Autodesk cases was not a set of instructions of itself, it was part of a set of instructions and not simply data. However the issue was whether the look up table was a substantial part of a computer program and she failed to accept that it was not.⁴⁶

4. WAS THE TABLE OR COMPILATION OF RESERVED WORDS IN THE DATAFLEX USER’S GUIDE PROTECTED BY COPYRIGHT?

The High Court decided that the table of reserved words in the user’s guide were not protected by copyright because they were not original in themselves and arranging them in alphabetical order did not involve the amount of skill and labor necessary to make the table original. Furthermore they did not fall within the definition of a literary work as a compilation of computer programs as it had already been decided that each was not a computer program, and as a set they were not a computer program for the

same reasons that each was not a computer program.

The Macros

A macro is a command which causes a sequence of other functions to occur, giving the effect of performing a more complex function. An example in the Dataflex language was ‘ENTER’. Data Access claimed that the source code of each macro was protected as a computer program and that PFXplus infringed it by making an adaptation of it.

The High Court noted⁴⁷ the uncertainty regarding whether the source code in the macros were computer programs in their own right. If “a particular function” in the definition of computer program is interpreted to mean, for example, that Microsoft word is used to enable a computer to operate as a word processor then Microsoft word would be considered a computer program. However, if the “particular function” is interpreted to refer to each individual step carried out by the computer, such as printing the letter “a” on the screen, then Microsoft word, while colloquially referred to as a computer program, would be a compilation of computer programs as contemplated in the definition of a literary work. The interpretation adopted is critical to determining what is a substantial part of a computer program for the purposes of infringement. The former meaning often appears to be assumed by the courts.⁴⁸

The High Court did not express a concluded view on this issue, although they appeared to favor the first interpretation which would probably have lead them to decide that the source code for the macros were not computer programs, or substantial parts of computer programs, under the Copyright Act. Instead they said that if the source code of the macros were computer programs they were not infringed because the source code in the PFXplus macros were not adaptations of the corresponding Dataflex macros.

ADAPTATION: VERSION MEANS TRANSLATION

The High Court approved the Full Court's interpretation⁴⁹ of the word 'version' in the definition of adaptation as a "translation" after considering what was said in the explanatory memorandum which introduced the amendment:

"[T]he present definition of adaptation in relation to literary works only includes translation, conversion between dramatic and non-dramatic forms, and conversion to a pictorial form. Of these only translation is likely to be relevant to the adaptation of programs..."⁵⁰

In doing so it rejected Data Access's argument that the word 'version' in the definition of adaptation should be interpreted more broadly. Thus the High Court helped define when a computer program will infringe another by requiring the expression or source code of the allegedly infringing program to be closely related to the expression or source code of the original program, rather than implementing the same idea or performing the same function through an independently expressed program.

The High Court noted that the PFXplus language had been developed after carefully studying the Dataflex program to ensure that the commands performed the same functions but that the source code, though objectively similar,⁵¹ was an original expression rather than a translation. Thus the High Court held that there was no adaptation of the macros.⁵²

The Huffman Compression Table

The Huffman compression table was used in the Dataflex program to efficiently store data. Rather than storing each of the 256 characters recognized by a computer in an eight bit string, the table assigned a different length bit string to each character depending on the frequency of its use. The more frequently a character is used the shorter the bit string assigned to it, thereby reducing the amount of storage capacity required to store the character and thus improving the efficiency of the program. The Huffman algorithm analyzes a data file and assigns a bit string of appropriate length to each character.

Although the PFXplus program had the same function it was achieved using original source code.

However, while the Huffman algorithm in the Dataflex program (and the equivalent algorithm in the Powerflex program) could be applied to a data file to create a customized compression table, the Dataflex program used a Huffman compression table as a default compression table. It was created by applying the Huffman compression algorithm to a representative database file. In order for the PFXplus program to operate on databases created using the Dataflex program it was necessary to replicate the Huffman compression table in the PFXplus program. The developer of the PFXplus program, Dr. Bennett, did not have access to the representative database file used to create the Huffman compression table.⁵³

Dr. Bennett did not decompile the Dataflex program in order to copy the Huffman compression table. Instead he created a database file using repetitious characters to create a background against which a specific character would stand out and ran that database through the Huffman compression table in the Dataflex program and obtained a printout of the results in binary form. Thus he was able to identify the bit string assigned to each character by the Huffman compression table and he replicated it in the PFXplus program.

The definition of literary work in section 10(1) of the Copyright Act provides that a literary work includes ... "a table, or compilation, expressed in words, figures or symbols (whether or not in a visible form)". The High Court referred to the comments in the Explanatory Memorandum to the Bill which introduced this amendment⁵⁴ and decided that the Huffman compression table fell within the definition of a literary work as a table or compilation.⁵⁵

For copyright to subsist in a literary work it must also be original. The High Court stated that:

"[T]he requirement that a work be 'original' in copyright law is a requirement that 'the work emanates

from the person claiming to be its author, in the sense that he has originated it or brought it into existence and has not copied it from another."⁵⁶

The High Court proceeded to hold that the Huffman compression table was an original literary work and that it was reproduced in the PFXplus program:

"The skill and judgement employed by Dataflex was perhaps more directed to writing the program setting out the Huffman algorithm and applying this program to a representative sample of data than to composing the bit strings in the Huffman table. Nevertheless, the standard Dataflex Huffman table emanates from Dataflex as a result of substantial skill, and judgement. That being so, the Full Court was correct in holding that the standard Dataflex Huffman compression table constituted an original literary work.

In addition, in our opinion the Full Court was correct in holding that the process undertaken by Dr. Bennett constituted a 'reproduction' of the standard Dataflex Huffman table. The fact that Dr. Bennett used an ingenious method of determining the bit string assigned to each character does not make the output of such a process any less a 'reproduction' than if Dr. Bennett had sat down with a printout of the table and copy-typed it into the PFXplus program."⁵⁷

Rothnie suggests⁵⁸ that the Federal Court (and presumably the High Court) could have adopted the argument used in the U.S.⁵⁹ (but criticized in *Ibcos*⁶⁰) that there was only one way of expressing the idea in the Huffman compression table and therefore the expression merged with the idea and was not protected by copyright.⁶¹

The High Court goes on to observe that:

"The finding that [Powerflex] infringed [Data Access's] copyright in the Huffman table embedded in the Dataflex program may well have considerable practical consequences. Not only may the finding affect the relations between the parties to these proceedings, it may have wider

ramifications for anyone who seeks to produce a computer program that is compatible with a program produced by others. These are, however, matters that can be resolved only by the legislature reconsidering and, if it thinks it necessary or desirable, rewriting the whole of the provisions that deal with copyright in computer programs.”⁶²

In fact as discussed below, section 47AB was inserted in the Copyright Act by the Digital Agenda Act with the intention of circumventing the effect of the High Court’s decision in Powerflex regarding the Huffman compression table by making any literary work which is incorporated in, or associated with, a computer program and, essential to its effective operation, subject to the provisions which permit copying and adaptation of computer programs for the purpose of, inter alia, making interoperable programs. The effectiveness of that amendment is considered below under the discussion of the interoperability provisions of the Copyright Amendment (Computer Programs) Act 1999.

RAMIFICATIONS OF POWERFLEX

The practical effect of the High Court’s decision in Powerflex is that while programmers are not permitted to copy source code they are permitted to adopt the structure, commands and user interface⁶³ of a competitor’s program. This will promote competition by making it easier for customers to change to an alternative program.

The ACCC submitted to the Intellectual Property and Competition Review Committee that:

“The finding on commands is to be welcomed for facilitating competition between computer companies, but the finding on compression tables creates considerable problems for the production of compatible and therefore competitive programs.”⁶⁴

Prior to the Digital Agenda Act⁶⁵ if the program used a standard data compression table which was unique to that program it could not be

replicated in the competitor’s program. Therefore users of the program were not be able to use a alternative program with their existing database if it was stored using a unique data compression table. However if the program allowed the users to create their own customized compression table then the competitors could write an original program which produced the same customized compression table using the same sample data, thereby enabling the users to use the alternative program on their existing database by replicating their customized compression table in the alternative program.

Powerflex has also brought some common sense back to the law on what is a substantial part of a computer program by rejecting the “essentiality” test in the Autodesk case and deciding that a computer program is infringed if a substantial part, being an original part, is copied.

Blackmore observes that the Powerflex case was the first time the Australian courts had had to grapple with the issue of at what point in the “levels of abstraction” continuum (or at what level above source code)⁶⁶ copyright protection ceases to be available. He criticizes the Federal Court for making its decision without reference to the policy considerations, but concludes that they managed to draw the line in approximately the right place.⁶⁷ The High Court also focussed closely on interpreting the definition of computer program and made only passing references to policy considerations. However, the definition of computer program is fundamental to deciding whether software is protected as a literary work under the Copyright Act. It is quite specific in that it requires a set of instructions and they must be intended to cause a computer to perform a particular function. If, by applying the definition, the court managed to draw the line in approximately the right place it indicates that the definition works.⁶⁸

The CLRC has recommended that the Copyright Act should not be amended to protect the “look and feel” of computer programs because “the need

for standardization and the need for efficient user interfaces ... outweighs the need to grant authors express copyright protection.”⁶⁹

HOW POWERFLEX COMPARES WITH THE U.S. CASES

Data Access, which is a U.S company, was furious with the decision of the Full Federal Court. It claimed that Australia’s copyright laws were inadequate and inconsistent with its obligations under international treaty laws.⁷⁰ However it seems that the position adopted by the Australian courts is consistent with the position which has been reached in the United States.

The courts in the United States have considered the “levels of abstraction” issue on a number of occasions and have recently “established a very restrictive approach to software copyright, restricting protection to the literal and near literal source code level.”⁷¹

In 1986 the United States Federal District Court held in Whelan Associates v Jaslow Dental Laboratories⁷² that code structure could be protected by copyright. Blackmore observes that “[t]he court decided that as the structure of the program embodies the main valuable efforts of the programmer, public policy dictated that it should be protected ... [and that] ... the coding of the program is an almost trivial process,”⁷³ However Blackmore goes on to argue that “[w]hilst there is an arguable case that the majority of creativity of software is in the code structure, the consequences of awarding copyright protection to expressions of code structure would be highly detrimental to the software industry”⁷⁴

A broad view was also taken in Lotus Development Corp v Paperback Software International where the court decided there was more than one way of expressing the command structure of the program and therefore it had not merged with the idea and consequently still remained the subject of copyright protection.⁷⁵ That case was widely criticized on the basis that it prevented the development of

competing software programs with common commands.⁷⁶

However the U.S courts have since stepped back from that position. In *Computer Associates International Inc. v Altai Inc.*⁷⁷ the court developed the “abstraction, filtration, comparison” test for infringement and considered that software code structures should be available for others to use in their own programs. The same policy considerations were reflected in *Lotus Development Corporation v Borland International Inc.*⁷⁸ in which it was held that the Lotus menu command hierarchy or structure in the Lotus 1-2-3 spreadsheet program was not protected by copyright under U.S. law. This decision was based on the finding that a menu command structure was a “method of operation” which is excluded from copyright protection under s.102(b) of the U.S. Copyright Act 1977, although Stahl J. observed that the position is the same at common law.⁷⁹ The CLRC reached the same conclusion in its 1995 report on Computer Software Protection.⁸⁰

PSEUDOCODE

In *Admar Computers Pty Ltd. v Ezy Systems Pty. Ltd.*⁸¹ Goldberg J. in the Federal Court decided that the pseudocode, which described the structure of a program, was inadmissible on the basis that code structure is not protected by copyright. However given that pseudocode can be used to paraphrase source code it may still be protected by copyright.⁸²

SCREEN DISPLAYS

It is arguable that screen displays may be protected as artistic works. The Copyright Law Review Committee rejected that possibility in their 1995 report on Computer Software Protection on the basis that the screen display was ephemeral and not embodied in a material form.⁸³ However in *Galaxy Electronics Pty Ltd v Sega Enterprises Ltd*⁸⁴ the Federal Court held that video game screens were embodied in a material form being the computer program which produced them and were therefore entitled to protection as films. The same reasoning applies to

the protection of screen displays as artistic works.

**COPYRIGHT AMENDMENT
(COMPUTER PROGRAMS) ACT
1999**

The Copyright Amendment (Computer Programs) Act 1999 (“the Computer Programs Act”) amended the Copyright Act⁸⁵ to permit the owner or licensee of a computer program, in specified circumstances, to make a copy of the program during the normal use of the program, as a back up copy⁸⁶ or to study the program and to make a copy or adaptation of the program to correct an error, for security testing or to make an interoperable program. The amendments are designed to implement the recommendations of the CLRC.⁸⁷ Similar rights are available in Europe⁸⁸ and the United States.⁸⁹

The Intellectual Property and Competition Review Committee notes in its Final Report that “the Digital Agenda [Act] includes the acts permitted under the Computer Programs Act as ‘permitted purposes’ for which circumvention devices may be supplied. This should operate to prevent copyright owners from using technological measures to prevent the operation of the decompilation provisions contained in the Computer Programs Act.”⁹⁰

Reproducing or Adapting Computer Programs to make Interoperable Products

The Intellectual Property and Competition Review Committee observed that “[i]nteroperability of software, and the ability to create new products or compatible products is a matter of great concern to the software industry.”⁹¹ With regard to the Copyright Amendment (Computer Programs) Act 1999 the Committee concluded that “[it] supports the introduction of amendments to the Copyright Act to allow decompilation for the purposes of interoperability.”⁹²

Section 47D permits the reproduction or adaptation of a computer program if:

it is made by or on behalf of the owner or licensee of a copy of the program; and

it is made for the purpose of obtaining information necessary to enable the owner or licensee to independently make a new program or article to interoperate with the original program, or any other program; and that information is not readily available from another source at the time; and

it is made only to the extent necessary to obtain that information; and if the new program reproduces or adapts the original program it does so only to the extent necessary to enable it to interoperate with the original program or the other program.

Section 47G provides that if the reproduction or adaptation, or any information derived from it, is used for a purpose other than that permitted without the consent of the owner of the copyright in the original program then section 47D (and the other provisions) are taken never to have applied. Section 47H provides that section 47D (and most of the other sections) are mandatory and cannot be limited or excluded by agreement.

Discs on which software programs are distributed record the programs in object code. The source code is usually kept secret. Reverse engineering of a computer program involves decompiling the object code into source code from which a person familiar with the language in which the program is written can discover how the program works.

Because the definition of the word ‘adaptation’ in the Copyright Act was interpreted by the High Court in *Powerflex* to mean a translation it is apparent that section 47D permits the decompilation of computer program from object code to source code. Prior to this amendment decompiling the object code of a program into source code was a translation (and therefore an adaptation) of the original program which infringed the exclusive right of the copyright owner. The use of the expression “make independently” in section 47D is presumably analogous to the requirement that, for a work to be protected by copyright, it must be original in the sense that it is the

product of the authors own skill and labor.

The Computer Programs Act does not define 'interoperability', however the CLRC defined it to mean "The ability of computer systems to exchange information and mutually to use the information which has been exchanged."

On a cursory examination section 47D appears to restrict decompilation to the development of interoperable programs which complement, rather than compete with, the original program. However it is permissible for the new program to interoperate with any other program. Therefore if both programs are designed to interoperate with a third program it seems that the original program can be decompiled to assist in making the competing program.⁹³ Provided the competing program is expressed in original source code it will not infringe the original program. However that does not appear to be the intended effect of the amendment.⁹⁴

If that interpretation is correct, section 47G does not operate to remove the protection of 47D in the situation where the reproduction or adaptation or any information derived from it is used to develop a competing program because using the reproduction, adaptation or the information derived from it to develop a competing program is a permitted purpose.

The Huffman compression table in Powerflex was protected as a compilation rather than a computer program and therefore was not subject to section 47D until the Digital Agenda Act⁹⁵ introduced section 47AB. The High Court did not consider whether it was a computer program or a substantial part of a computer program. In that it may be considered an expression in a code of a set of instructions which caused a computer to store and retrieve characters it may also have been a computer program, or at least a substantial part of one. Prior to the introduction of section 47D, the reproduction of it in the PFXplus program would also have been an infringement if it were a computer program or a substantial part of one.

Section 47D did not change that position because the Huffman compression table was not decompiled but rather reproduced in its entirety in the PFXplus program.⁹⁶

The finding in Powerflex that the Huffman compression table was protected as a table or compilation, rather than a computer program took it outside the exception in section 47D⁹⁷ until the Digital Agenda Act introduced section 47AB which provides that section 47D now applies to all literary works which are incorporated in or associated with a computer program and essential to its effective operation.

Section 47D(1)(d) provides that if a new program reproduces or adapts an original program it can do so only to the extent necessary to enable it to interoperate with the original program or the other program. Given section 47AB, section 47D(1)(d) may now permit the Huffman compression table being reproduced in the PFXplus program because it is necessary to enable the PFXplus program to interoperate with the Dataflex program. If "interoperate" refers to the programs operating on the same data then section 47D would operate in the way suggested. However if "interoperate" refers to the programs interacting directly with each other (which seems more likely given the CLRC definition given above) then section 47D would be of no assistance.

COPYRIGHT AMENDMENT (DIGITAL AGENDA) ACT 2000

The Copyright Amendment (Digital Agenda) Act 2000⁹⁸ was passed by Parliament with the intention of enabling Australia to comply with the requirements of the World Intellectual Property Organizations (WIPO) Copyright Treaty 1996 and the WIPO Performances and Phonograms Treaty 1996 (although Australia is yet to sign those treaties). The Digital Agenda Act is intended to bring Copyright into the digital age by introducing a technology neutral right of communication to the public⁹⁹ to protect, inter alia, copyright material communicated over the internet. The Digital Agenda Act also introduces associated fair dealing exceptions and

a statutory license scheme to balance the interests of the copyright owners and users, and addresses various other issues such as enforcement.

The Government also decided to implement some of the recommendations of the Copyright Law Review Committee (CLRC) in its 1995 report "Computer Software Protection", incidentally, via the Digital Agenda Act.¹⁰⁰ In particular the Digital Agenda Act amends the definition of computer program, literary work, reproduction and published edition¹⁰¹ Furthermore the Digital Agenda Act has reversed the effect of the High Court's decision in Powerflex regarding the Huffman compression table in Powerflex.

New Definition of "Computer Program"

The CLRC recommended that computer programs continue to be protected as literary works, rather than as works in their own right, because article 10 of the TRIPS agreement requires the protection of computer programs as literary works under the Berne Convention. They also considered that to do otherwise would put Australia out of step with the other major jurisdictions, which could result in unnecessary confusion.¹⁰²

Item 7 of the Digital Agenda Act repeals the definition of computer program which the High Court considered in Powerflex and replaces it with the following:

"computer program means a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result"

This is the same as the definition in section 101 of the U.S. Copyright Act 1976¹⁰³ and implements recommendation 2.04(c) of the CLRC's Computer Software Protection report.¹⁰⁴

For the purposes of comparison it is useful to superimpose the new definition on the old definition as follows (words which are deleted are struck through and new words are in italics):

~~“computer program means an expression in any language, code or notation, of a set of statements or instructions (whether with or without related information) intended, either to be used directly or indirectly after either or both of the following: conversion to another language, code or notation; reproduction in a different material form; to cause a device having digital information processing capabilities in a computer to perform a particular function in order to bring about a certain result.”~~

The proposed definition is a simplified version of the current definition. The CLRC considered the words “an expression in any language code or notation” to be superfluous (despite s. 102(b) of the U.S. Copyright Act 1976) because, to be protected by copyright, an expression, rather than an idea, is required.¹⁰⁵

The inclusion of the word “statements” was intended by the CLRC to ensure the definition extends to declarative programming languages (also called “fourth generation languages”).¹⁰⁶ It may raise the level of abstraction of an expression which is protected as a computer program. However given the attitude of the High Court in *Powerflex* that is unlikely.

It has been suggested¹⁰⁷ that the words “whether with or without related information” extend copyright protection of computer programs beyond the set of instructions to related information or data to be used in conjunction with the program. Deletion of those words removes that argument for the protection of data, although the issue was not dealt with by the CLRC nor in the Explanatory Memorandum to the Act.

Deletion of the word “intended” may mean that a computer program will only be protected if it achieves its intended result. The use of the words “certain result” in the new definition tends to support that interpretation. Currently a computer program is protected if it is intended to achieve a particular result, regardless of whether it does or not.¹⁰⁸ The CLRC decided to

remove the reference to the intention of the author because keeping it “would ... have the undesirable effect of protecting fragments of computer programs.” The CLRC considered that the fact that software developers corrected errors “would lead a court to determine that protection should not be withheld because the defect prevented [the program] from performing as intended” and was “not aware that the U.S. definition has been shown to be deficient in ensuring protection for [defective] programs.”¹⁰⁹

The reference to “conversion to another language code or notation [or] reproduction in a different material form” are examples of instructions operating indirectly. However use of the word “indirectly” means that any instructions which are indirectly used in a computer to achieve a result will be a computer program, rather than just those indirect uses which are specified in the existing definition.

A computer is “a device having digital information processing capabilities”. The more convoluted terminology was originally used to ensure that programs for devices such as computerized ignition systems would be included.¹¹⁰ It is not necessary if the term computer is interpreted broadly. The CLRC considered that the word “digital” should be removed to ensure that analogue computers fall within the definition.¹¹¹

It does not appear that replacing the words “to perform a particular function” with “in order to bring about a certain result” has any substantive effect. When a computer carries out a function it will produce a result. However the issue of determining the extent of a computer program arising from the interpretation of the words “a particular function”¹¹² also applies to the interpretation of a “certain result”.

It appears that the High Court’s decision in *Powerflex* regarding the reserved words would be the same under the proposed definition because it still requires a *set* of instructions. The requirement in *Powerflex* that a computer program must express an algorithmic or logical relationship between the “function” (“result”) to be

performed and the physical capabilities of the computer is also still likely to apply.

Amendment to the Definition of “Literary Work”

Item 12 of the Digital Agenda Act amends the definition of literary work by deleting the words “whether or not in a visible form” from the part which states that a table or compilation can be a literary work. This gives effect to recommendation 2.04(a) in the CLRC’s 1995 Computer Software Protection report on the basis that they are superfluous given ss. 32(1), 22 and the definition of material form in s.10(1).

Amendment of a Deemed Reproduction

Item 23 of the Digital Agenda Act inserts a new section 21(1A) to provide that conversion of a work to or from a digital format is a reproduction of the work. This gives rise to the so-called right of first digitization for works. Item 24 amends section 21(2) to provide that section 21(1A) also applies to an adaptation of a work. Item 25 inserts a new section 21(5) to confirm that conversion of a computer program from source code to object code or vice versa is a reproduction. Item 25 also inserts a new section 21(6) to confirm that a sound recording or cinematograph film will be copied if it is converted to or from a digital form (the right of first digitization for sound recordings and cinematograph films). This gives effect to recommendation 2.04(e) of the CLRC’s 1995 Computer Software Protection Report although the amendments are more extensive than those which were recommended.¹¹³

Reversal of Powerflex

The Intellectual Property and Competition Review Committee suggested in its interim report that the Government should consider amending the Copyright Act to prevent compression tables from being protected as a literary work in their own right as a compilation under the definition of literary work.¹¹⁴ However it appears to have retreated from that position in its Final report after a

submission from IBM that compilations are necessary for the protection of databases.¹¹⁵

In any event the Digital Agenda Act inserts a new section 47AB¹¹⁶ which provides that any literary work, such as a table, which is incorporated in or associated with a computer program and is essential to its effective operation may be copied for the purpose of, *inter alia*,¹¹⁷ creating an interoperable product. The effectiveness of that amendment is considered under the discussion of the interoperability provisions of the Computer Programs Act above.

COPYRIGHT AMENDMENT (MORAL RIGHTS) ACT 2000

After years of anticipation¹¹⁸ and false starts¹¹⁹ the Australian Government has finally passed the Copyright Amendment (Moral Rights) Act 2000 ("the Moral Rights Act")¹²⁰. The Moral Rights Act is intended to ensure that Australia complies with its obligations¹²¹ under article 6 bis,¹²² of the 1928 Berne Convention for the Protection of Literary and Artistic Works. The substantive part of the Act commenced when it received the royal assent on 21 December 2000.¹²³

The Moral Rights Act replaces the existing part IX of the Copyright Act with a new part IX which introduces the right of attribution of authorship,¹²⁴ the right not to have authorship falsely attributed¹²⁵ and the right of integrity.¹²⁶ The right of integrity is the right not to have the work subjected to derogatory treatment which means doing anything with the work that is prejudicial to the author's honor or reputation such as materially distorting it, mutilating it or materially altering it.¹²⁷ Section 195 AS provides that the right of integrity is not infringed by a derogatory treatment if the treatment was reasonable in the circumstances. Relevant factors include any practice in the industry and whether the work was made in the course of the author's employment.

The attribution rights last for the duration of the copyright and the right of integrity expires on the author's death.¹²⁸ The attribution rights subsist

in works made before the commencement of part IX, however actions can only be brought for infringements occurring after that date. The right of integrity only applies to works made after the commencement of part IX.¹²⁹

Section 192 confirms that moral rights are in addition to the economic rights already provided for in the Copyright Act. Section 35(6) provides that, subject to any agreement to the contrary, if the author of a literary work is an employee the copyright belongs to the employer.¹³⁰ However that section only applies to copyright subsisting under part III of the Copyright Act. Therefore at this stage it appears that the author of a computer program will receive the moral rights proposed to be introduced by the Moral Rights Act.¹³¹ Section 190 provides that only individuals can have moral rights and section 195AN provides that moral rights cannot be transferred. However section 195AW provides that the author's moral rights in a work are not infringed if the author has consented in writing to the otherwise infringing act or omission. Such written consent can apply to future works if they are adequately described.

HOW TO PROTECT SOFTWARE IN AUSTRALIA: COPYRIGHT & PATENTS

Burnside QC observes that a threshold issue for protecting computer programs:

"is to decide what it is you are trying to protect. It is clear enough that if you are protecting a novel you want to give protection primarily to the particular use of the words which the author has chosen because, generally speaking, that is the primary skill in writing a novel. It is not immediately obvious that the particular mode of expression of a computer program ought to be the primary focus of protection."¹³²

Copyright is primarily concerned with protecting expression. However computer programs are a set of instructions intended to be used to achieve a functional result. This functional aspect does not fit well within the copyright framework. The

High Court in *Powerflex* notes that computer programs can be patented and that: "[i]n form, the definition of a computer program seems to have more in common with the subject matter of a patent than a copyright."¹³³

Using copyright to protect an expression with a functional purpose is like trying to fit a square peg in a round hole, if the extremities of the peg fall outside the hole it will not fit. In other words the expression of a computer program (the code) fits within copyright law but the functional aspects of a computer program do not. Patent law is the appropriate vehicle for protecting function.

Blackmore argues that if copyright protection extended to program structure and function it would usurp the role of patent law, which is adapted to finely balance the competing interests.¹³⁴ It has passed beyond the low level of originality required for copyright and entered the domain where the higher tests of novelty and inventive step, as well as disclosure and a shorter term, justify the protection of patent law in functional inventions.

Given the High Court's decision in *Powerflex* it is relatively clear in Australia that copyright protection is limited to literal and near literal copying of source code and it will not protect program structure or function. However the protection of pseudocode, which lies between the two on the idea-expression continuum, is still unclear.

If program structure and function is to be protected the higher threshold of patent law must be passed. That is sensible given that protection of program structure and function prevents the development of competing programs, and therefore such protection should only be available in deserving cases.

Blackmore says that *Powerflex* and *Admar* "have sent a clear message to the Australian software industry that copyright protection is insufficient to protect their intellectual property" and he considers if copyright does not protect program function it is

“inevitable that Australia will increasingly follow the trend of the United States where more than 17,000 software patents were granted [in 1998].”¹³⁵ This is particularly so if the “Priceline” Patents¹³⁶ recently granted by the U.S. Patent Office for a business method utilizing computer programs withstand the legal challenge being made against them in the U.S. courts.

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| <p>1 (1999) 45 IPR 353</p> <p>2 The Digital Agenda Act inserted a new definition of Computer Program and is discussed in more detail later in this paper. It commenced operation on 4 March 2001, unless proclaimed to commence on an earlier date.</p> <p>3 (1999) 45 IPR 353 at 357-358</p> <p>4 Burnside QC “The Powerflex Case: Legal and Industry Implications” Copyright Reporter 16 (1) May 1998 31 at 33.</p> <p>5 Burnside QC “The Powerflex Case: Legal and Industry Implications” Copyright Reporter 16 (1) May 1998 31 at 37.</p> <p>6 (1996) 33 IPR 194</p> <p>7 (1997) 37 IPR 436</p> <p>8 (1999) 45 IPR 353 per Gleeson CJ, McHugh, Gummow and Hayne JJ. in a joint judgement; Gaudron J concurring in a separate judgement, except in relation to the majority’s comments on the Autodesk cases, see below)</p> <p>9 The High Court’s decision has since been cited by the High Court in <i>Campomar Sociedad Lda v Nike International Ltd</i> (2000) and <i>Grain Pool (WA) v Commonwealth</i> (2000) 74 ALJR 648 and in the Federal Court in <i>TR Falanagan Smash Repairs Pty Ltd v Jones</i> (2000) FCA 625 and <i>Microsoft Corp v Business Boost Pty. Ltd. and Others.</i> [1999] FCA 1384. However the High Court’s decision in <i>Powerflex</i> was not directly relevant to the decisions in those cases. The Microsoft case concerned an application for an interlocutory injunction to restrain a second hand computer dealer from installing Microsoft programs on the computers she sold without a license. If the case proceeds to final judgement it will decide whether a program is reproduced when it is installed on the hard disc of a computer or when it is loaded into random access memory (RAM) each</p> | <p>time the program is run. However section 44B, which was introduced by the Copyright Amendment (Computer Programs) Act 1999 appears to assume that a program is reproduced when it is loaded into the RAM each time it is run and therefore s.47B(2)(b) provides that such an action is an infringement if it is done contrary to the license of the program.</p> <p>10 (1999) 45 IPR 353 at 361</p> <p>11 Burnside QC “The Powerflex Case: Legal and Industry Implications” Copyright Reporter 16 (1) May 1998 31 at 33</p> <p>12 (1999) 45 IPR 353 at 361</p> <p>13 740 FSupp 37 (DMass 1990); 18 IPR 1. Considered further under the heading “U.S. Cases”, below.</p> <p>14 (1996) 33 IPR 194 at 197 “Each of the words of the Data Flex language found also in the PFXplus language is ... an expression of a set of instructions intended to cause a [computer] to perform a particular function. The circumstance that the expression of those instructions in source code is different is ... immaterial.”</p> <p>15 (1997) 37 IPR 436 at 450</p> <p>16 (1993) 25 IPR 33 at 56</p> <p>17 (1999) 45 IPR 353 at 365, emphasis retained</p> <p>18 (1999) 45 IPR 353 at 366</p> <p>19 45 IPR 353 at 367: “The phrase ‘expression ... of a set of instructions’ is intended to make clear that it is not an abstract idea, algorithm or mathematical principle which is protected but rather a particular expression of that abstraction. The word “set” indicates that the instructions are related to one another rather than being a mere collection.”</p> <p>20 (1999) 45 IPR 353 at 367, emphasis retained</p> <p>21 Jacob J applied a similar reasoning in the U.K. case of <i>Ibcos Computers Ltd. v Barclays Mercantile Highland Finance Ltd.</i> (1994 29 IPR 25) in which the design features of a program were found to exist at a level of generality which was not protected by copyright.</p> <p>22 Blackmore, “Debugging the Application: Copyright Protection for Software in Australia” (1999) 10 AIPJ 67 at 69.</p> | <p>23 <i>Nichols v Universal Pictures</i> 4:F2d 119.</p> <p>24 (1999) 45 IPR 353 at 367-368</p> <p>25 (1999) 45 IPR 353 at 368-369. The High Court goes on to observe that this approach is consistent with the law of the United States, e.g.: <i>Baystate Technologies Inc v Bentley Systems Inc</i> 946 F Supp 1079 (1996)</p> <p>26 (1999) 45 IPR 353 at 370</p> <p>27 (1999) 45 IPR 353 at 370</p> <p>28 Turner, “High Water Mark of Copyright Protection for Computer Programs in Australia” (1996) 9 IPLB 105 at 108.</p> <p>29 Burnside QC “The Powerflex Case: Legal and Industry Implications” Copyright Reporter 16 (1) May .998 31 at 33</p> <p>30 (1999) 45 IPR 353 at 371</p> <p>31 Burnside QC “The Powerflex Case: Legal and Industry Implications” Copyright Reporter 16 (1) May :998 31 at 32</p> <p>32 Rothnie, “Idea and Expression in a Digital World” <i>Journal of Law and Information Science</i> Vol. 9 No. 1 1998, 59 at 74.</p> <p>33 <i>Ager v P&O Steam Navigation Co.</i> (1884) 26 ChD 637; <i>Anderson v Leiber Code Co.</i> [1917] 2 KB 469. See also <i>Reiss v National Quotation Bureau Inc.</i> 276F 717 (SDNY) 1921 cited by Keeton J. in <i>Lotus v Paperback Software Intl</i> 740 Fsupp 37 (D.Mass 1990) at 49</p> <p>34 (1999) 45 IPR 353 at 371. It is unfortunate that the court did not explain how they reached the conclusion that the Dataflex system was a computer program. One presumes that the Dataflex programming system can be purchased in the form of a computer disc or compact disc and therefore in common parlance would be referred to as a computer program. If that is true then the contents of the disc could be seen to fall within the definition of a computer program as an expression in a language, code or notation of a set of instructions intended to cause a computer to perform a particular function, such as being used to write a computer program in the Dataflex language.</p> <p>35 (1992) 173 CLR 330; 22 IPR 163</p> <p>36 (1993) 176 CLR 300; 25 IPR 33</p> <p>37 (1992) 173 CLR 330; 22 IPR 163</p> |
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- 38 (1999) 45 IPR 353 at 372
- 39 Prescott, "Was Autocad wrongly decided?" (1992) 14(6) European Intellectual Property Review 191 at 194.
- 40 (1993) 176 CLR 300 at 305; 25 IPR 33 at 37
- 41 (1999) 45 IPR 353 at 373
- 42 *Interlego AG v Croner Trading Pty Ltd* (1992) 25 IPR 65 at 97 per Gummow J with whom Black CJ and Lockhart J agreed ("skill and labor"), *Computer Edge Pty Ltd v Apple Computer Inc.* (1986) 65 ALR 33 at 39 per Gibbs CJ ("skill, judgement or labor" and "skill, labor and experience") and at 46 per Mason and Wilson JJ ("skill, time and effort"), *Milwell Pty Ltd v Olympic Amusements Pty Ltd* (1999) 43 IPR 32 at 38 per Lee, von Doussa and Heerey JJ ("skill, judgement or labor"), *Autocaps (Aust) Pty Ltd v Pro-kit Pty Ltd* [1999]FCA 1315 at 14 per Finkelstein J ("labor, skill, judgement or ingenuity") and *Data Access Corporation v Powerflex Services Pty Ltd* (1999) 45 IPR 353 at 375 per Gleeson CJ, McHugh, Gummow and Hayne JJ ("skill or labor") and at 381 ("skill and judgement")
- 43 *Feist Publications Inc v Rural Telephone Service Co Inc* (1991) 20 IPR 129 at 132
- 44 (1999) 45 IPR 353 at 374
- 45 This is consistent with the likely position that the reserved words would not be protected by copyright as traditional literary works because they would lack originality. In fact *Data Access* did not even attempt to run that argument.
- 46 However with regard to the *Dataflex* language her conclusion is consistent with the majority: "Neither individually nor in collocation are the reserved words part of the set of instructions that is intended to cause a computer to perform a particular function. And not being a part they cannot be a substantial part of it." (1999) 45 IPR 353 at 382.
- 47 (1999) 45 IPR 353 at 376-377
- 48 For example: Drummond J. in *Coogi Australia Pty Ltd v Hysport International Pty Ltd.* (1997) 41 IPR 593 at 621
- 49 (1999) 45 IPR 353 at 377. Drummond J. also agrees with the Full Court's interpretation of adaptation in *Coogi Australia Pty Ltd v Hysport International Pty Ltd.* (1997) 41 IPR 593 at 624
- 50 Explanatory Memorandum, Copyright Amendment Bill 1984
- 51 Possibly because it was dictated by the intended function.
- 52 "In accordance with the fundamental principle that copyright protects expression and not ideas, [the copying or adaptation] must relate to the copying of the code ... rather than a copying of the idea or function underlying the code." (1999) 45 IPR 353 at 378
- 53 If he had been able to run the PFXplus program on the same file to create an identical compression table he would have infringed because he would be indirectly making an exact copy of the Huffman compression table which is protected by copyright.
- 54 (1999) 45 IPR 353 at 380. "By removing the requirement that tables or compilations be in a visible form it is made clear that a computerized 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." Explanatory Memorandum to the Copyright Amendment Bill 1984, paragraph 26
- 55 They noted that the Huffman compression table was similar to the look-up table in *Widget C* which Dawson J considered to be a literary work in *Autodesk No. 1*.
- 56 (1999) 45 IPR 353 at 380, quoting from Ricketson, *The Law of Intellectual Property* (1984) at 83
- 57 (1999) 45 IPR 353 at 380-381
- 58 Rothnie, "Idea and Expression in a Digital World" *Journal of Law and Information Science* Vol. 9 No. 1 1998, 59 at 76.
- 59 See *Lotus Development Corporation v Paperback Software International* 740 Fsupp 37 (Dmass 1990), 18 IPR 1; *Broderbund Software v Union World* (1986) 71 IPR 193 and *Digital Communication Associates Inc. v Softklone Distributing Corp* (1987) 10 IPR 1
- 60 *Ibcos Computers Ltd. v Barclays Mercantile Highland Finance Ltd.* (1994) 29 IPR 25 at 38-9.
- 61 That approach would only be available if the idea was the data in the standard version of the compression table rather than the limitless number of customized compression tables. Rothnie also appears to query whether the Huffman compression table was a substantial part of a literary work. However it was protected as an original literary work in its own right (being a table or compilation) and in fact the whole of the table was reproduced. Therefore this argument, while having some merit if the table was viewed as a computer program (or a substantial part of one), is not an answer to the High Court's finding.
- 62 (1999) 45 IPR 353 at 381
- 63 But not necessarily the screen display because it may be protected as an artistic work as discussed below
- 64 Intellectual Property & Competition Review Committee Interim Report April 2000, p.86.
- 65 See 2
- 66 Roberts, "High Court Revamps Standard for Copyright Infringement of Computer Languages" *IPAsia* November 1999 p. 18.
- 67 Blackmore, "Debugging the Application: Copyright Protection for Software in Australia" (1999) 10 AIPJ 67 at 71 ff.
- 68 That does not necessarily mean that it can not be improved, see the discussion below regarding item 7 of the Digital Agenda Bill which amends the definition by adopting that used in the United States.
- 69 CLRC Computer Software Protection Report 1995: recommendation 2.09, paragraph 9.42.
- 70 "U.S. Companies Blast Copyright Laws", *Convergence Reporter* Vol. 4 No. 3, December/January 1998 p. 1
- 71 Blackmore, "Debugging the Application: Copyright Protection for Software in Australia" (1999) 10 AIPJ 67 at 71.
- 72 797 F2d 1222 (1986)
- 73 Blackmore, "Debugging the Application: Copyright Protection for Software in Australia" (1999) 10 AIPJ 67 at 75.
- 74 Blackmore, "Debugging the Application: Copyright Protection for Software in Australia" (1999) 10 AIPJ 67 at 76.

- 75 740 Fsupp 37 (Dmass 1990), 18 IPR 1. See also *Broderbund Software v Union World* (1986) 7 IPR 193 and *Digital Communication Associates Inc. v Softklone Distributing Corp* (1987) 10 IPR 1
- 76 Turner, "High Water Mark of Copyright Protection for Computer Programs in Australia" (1996) 9 IPLB 105
- 77 23 USPQ 2d 1241 (1992)
- 78 (1995) 33 IPR 233
- 79 *Baker v Selden*, see Blackmore, "Debugging the Application: Copyright Protection for Software in Australia" (1999) 10 AIPJ 67 at 72.
- 80 See the discussion of item 7 of the Digital Agenda Act below, especially at footnote 103 where s. 102(b) is set out along with the CLRC's reasons for its conclusion.
- 81 (1997) 38 IPR 659
- 82 Blackmore, "Debugging the Application: Copyright Protection for Software in Australia" (1999) 10 AIPJ 67 at 75.
- 83 Paragraphs 9.43 to 9.50.
- 84 (1997) 37 IPR 462
- 85 By inserting sections 47B – 47H
- 86 This right is inserted by section 47C. It replaces the right to make a back up copy of a program in section 43A, which is repealed by the Computer Programs Act.
- 87 CLRC report on Computer Software Protection 1995, recommendation 2.23, paragraph 10.58, although the CLRC did not recommend allowing decompilation for security testing.
- 88 Article 6 of the EC Software Directive and section 29A-D of the Copyright, Designs and Patents Act 1988 UK
- 89 see the Digital Millennium Copyright Act 1998 (US)
- 90 Intellectual Property & Competition Review Committee Final Report September 2000, p.103.
- 91 Intellectual Property & Competition Review Committee Final Report September 2000, p.103.
- 92 Intellectual Property & Competition Review Committee Final Report September 2000, p.105.
- 93 Intellectual Property & Competition Review Committee Interim Report April 2000, p.85
- 94 Explanatory Memorandum p. 24: "The exception will not apply if the new program ... is essentially a copy of the original program. That is it must be an independently created program ... and it must not reproduce the original program beyond the extent of its interfaces with other programs." (and presumably the interface with the original program)
- 95 see 2
- 96 Roberts, "High Court Revamps Standards for Copyright Infringement of Computer Languages" IPAsia November 1999 p. 20. Although Roberts is correct on this point he does not appear to have appreciated that s.47D would not change the result in *Powerflex* in any event because it only applies to computer programs and the Huffman compression table was instead protected as a table or compilation.
- 97 The ACCC submitted to the Intellectual Property and Competition Review Committee that: "While [the] amendments [in the Computer Programs Act] are to be welcomed, they do not appear to overcome the compression table problem encountered by *Powerflex*. The amendments related to the protection of 'computer programs', defined as 'literary works' by s.10(1)(b) of the Copyright Act. However, the compression table was protected as a 'compilation', defined as a 'literary work' by s.10(1)(a)." Intellectual Property & Competition Review Committee Interim Report April 2000, p.86.
- 98 Pursuant to section 2 the Act commences on 4 March 2001 being 6 months after receiving royal assent, unless unless proclaimed to commence earlier in the Government Gazette. At 29 January 2001 no such proclamation had been made.
- 99 Items 35 and 37 of schedule 1 repeal the rights to broadcast a work or transmit a work to subscribers to a diffusion service and replace them with the right "to communicate the work to the public". Items 81 – 83 of schedule 1 do the same in relation to sound recordings, cinematograph films and television and sound broadcasts. Item 6 of schedule 1 inserts a definition of communicate into section 10(1).
- 100 Unfortunately, because these amendments deal with issues which are unrelated to the rest of the Digital Agenda Act, they were not considered in articles which critiqued the Bill.
- 101 Item 84 of schedule 1 implements recommendation 2.65(a) of the CLRC's 1994 report on Protection of Computer Software by amending section 88 to make it clear that scanning a document to produce a printed copy of it will infringe the copyright in the published edition of the work, that is the typesetting. However, consistent with part 2 of the CLRC's later report on Simplification of the Copyright Act (see paragraphs 7.146 to 7.153) the Digital Agenda Act does not go on to implement recommendation 2.65(b) which would have extended published edition copyright to reproduction of a work published in a computer readable format.
- 102 CLRC Computer Software Protection Report 1995: recommendation 2.03, paragraphs 4.14 and 4.15.
- 103 The CLRC noted that "[t]he American authorities will be relevant for the courts to consider" however it considered that the interpretation of the new definition by U.S. courts would not necessarily be decisive. "It would be a matter for the courts to determine what weight will be given to American authorities." (paragraph 6.26)
- 104 The CLRC noted that the approach in the European Union, including the U.K., of not defining computer program "is attractive in that it allows for greater flexibility" (paragraph 6.25) and would enable new developments in technology to be accommodated and "avoid the pitfalls of interpretation" (paragraph 6.23). However the CLRC considered that removing the definition may create uncertainty and therefore recommended that a definition be retained (recommendation 2.04(b)).
- 105 CLRC Computer Software Protection Report 1995, paragraph 6.32. The CLRC discusses section 102(b) of the U.S. Copyright Act 1976 which provides: "In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle or discovery, regardless of the form in which it is described, explained, illustrated or embodied in such work" and decides that such a provision is not necessary because "the fundamental nature of copyright

- is that it does not protect ideas as such, [f]or this reason the committee is of the opinion that there is no need for an explicit statement to this effect to be included in the Act.” (paragraphs 6.29 and 6.30)
- 106 CLRC Computer Software Protection Report 1995, paragraph 6.20.
- 107 See paragraph 18 of the Explanatory Memorandum to the Copyright (Amendment) Act 1984 which introduced the definition. See also the comments of Mason CJ and Gaudron J in Autodesk No. 2 (1993) 176 CLR 300 at 311 and 329 to 330 respectively, Gaudron J in Powerflex (1999) 45 IPR 353 at 381 to 382 and Drummond J in Coogi v Hysport(1998) 41 IPR 593 at 618.
- 108 In Powerflex the High Court observed (45 IPR 353 at 368) that “owing to programming errors, or what are commonly called ‘bugs’, [a program may not cause a computer to perform a particular function]. The presence of ‘bugs’ in a computer program, however does not disentitle it to copyright protection, because as the explanatory memorandum stated ‘the phrase intended ... to cause is used in preference to words such as capable ... of causing to cover the situation where the program, as written, may not operate for technical reasons such as the presence of a programming error.’” (quoting from the Explanatory Memorandum, Copyright Amendment Bill 1984, paragraph 19)
- 109 CLRC Computer Software Protection Report 1995, paragraph 6.31.
- 110 Copyright Amendment Act 1984 (Cth.) Explanatory Memorandum, paragraph 22.
- 111 CLRC Computer Software Protection Report 1995, paragraph 6.22.
- 112 See the discussion of the macros in the Powerflex decision above.
- 113 The Digital Agenda Act goes beyond the recommendations of the CLRC by extending deemed reproduction to conversion of a sound recording or cinematograph film to or from a digital or other electronic machine readable form (schedule 1 item 25, new section 21(6)) and by extending deemed reproduction of a computer program to conversion between source and object code, or vice versa, by any means, rather than just by compilation, as suggested by the Chairman, Mr. Justice Sheppard at paragraph 6.83. The Intellectual Property and Competition Review Committee did not support the creation of the right of first digitisation and recommended that it be reviewed in the proposed review of the Digital Agenda Act after it has been in operation for 3 years. (Interim Report, April 2000 page 64 and final report September 2000 page 98)
- 114 page 87
- 115 page 107
- 116 Section 47AB reads “In this division computer program includes any literary work that is incorporated in, or associated with, a computer program; and essential to the effective operation of the function of that program.”
- 117 The amendment applies to the whole of Division 4A of Part III which exempts reproduction of a computer program for normal use (s.47B), back up copying (s.47C), making interoperable products (s.47D), correcting errors (s.47E) and security testing (s.47F).
- 118 Debate has raged since the 1988 report of the CLRC recommended against the introduction of Moral Rights legislation.
- 119 The Copyright Amendment Bill 1997 initially contained Moral Rights provisions but they were later removed from the Bill.
- 120 Following the recommendation in paragraph 5.03 of the CLRC’s 1999 report “Simplification of the Copyright Act 1968 Part 2.
- 121 Australia is currently bound by the 1971 Paris revision of the Convention.
- 122 Article 6(1)bis. provides as follows: “Independently of the author’s economic rights, and even after the transfer of the said rights, the author shall have the right to claim authorship of the work, and to object to any distortion, mutilation or other modification, or other derogatory action in relation to, the said work, which would be prejudicial to his honor or reputation.”
- 123 The amendments in schedule 2 are consequential to the Digital Agenda Act and commence at the same time as that Act.
- 124 Section 193
- 125 Section 195AC
- 126 Section 195AI
- 127 Section 195AJ
- 128 Section 195AM
- 129 Section 195AZO
- 130 Of course if the author of the program is a contractor rather than an employee then, subject to any agreement to the contrary he will own the copyright under part III as well as the moral rights under the new part IX.
- 131 The CLRC in its 1995 Computer Software Protection Report 1995 stood by its 1988 recommendation that amendment of the Copyright Act to include moral rights was unnecessary, although it considered that if the Copyright Act were to be amended to include moral rights authors of computer programs should be treated the same as the authors of other literary works. (recommendation 2.14, paragraph 9.99)
- 132 Burnside QC “The Powerflex Case: Legal and Industry Implications” Copyright Reporter 16 (1) May 1998 31 at 36
- 133 45 IPR 353 at 359
- 134 Blackmore, “Debugging the Application: Copyright Protection for Software in Australia” (1999) 10 AIPJ 67 at 76
- 135 Blackmore, “Debugging the Application: Copyright Protection for Software in Australia” (1999) 10 AIPJ 67 at 67.
- 136 U.S. Patents 5,794,207 and 8,845,265