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# Case Note: High Court of Australia Revisits Autodesk

*by J.W.K. Burnside, QC*

The High Court of Australia has finally determined the Autodesk litigation. By an unusual procedural twist, the High Court has now spoken twice on the issues in the case.

## The background

The questions involved in the case have been set out in some detail by others elsewhere.[1] Shortly stated, the facts of the case are as follows. AutoCAD is a drafting program. In Australia it is sold in a 'locked' form. It comes with a hardware lock to be attached to the serial port. A program called Widget.C sends random 'challenges' to the lock from time to time. It monitors the response from the lock. The response is compared with the contents of a 'look up table' in Widget.C. If they do not correspond, the AutoCAD program ceases to operate.

The look up table in Widget.C took the form (in source code) of 16 decimal numbers. In object form, as supplied as part of the AutoCAD package, that series of decimal numbers was represented by a string of 127 binary digits.

The AutoCAD lock was a simple state machine, comprising a shift register and an exclusive-or gate. It would produce a sequence of 127 ones and zeros and then repeat that sequence. When stimulated by an incoming challenge, the state machine would produce the next digit in the 127 bit sequence. The hardware arrangement in the AutoCAD lock was a

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common form of pseudo-random number generator.

Kelly observed the output of the AutoCAD lock with an oscilloscope. He detected the existence of a repeating pattern. He produced a device which stored the 127 bits in an EPROM. When that device was attached to the serial port, it would perform the same function as the AutoCAD lock. Autodesk sued.

## The litigation

The matter began in the Federal Court of Australia. The Applicant, Autodesk, won. The Respondents appealed to the Full Federal Court. They won. Autodesk appealed to the High Court of Australia. They won.[2]

The High Court of Australia is the ultimate court of appeal in Australia. In the ordinary way of things, Autodesk's success in the High Court would have meant the end of the litigation. However, the principal Respondent, Mr Peter Kelly, is no ordinary litigant.

Kelly considered that the decisive question on which the High Court's judgment turned was one which had not been argued by the parties. Accordingly, he applied to the Court for the judgment to be vacated and for the appeal to be reheard.

Such applications are, in the nature of things, very rare creatures. The decision in *Autodesk (No. 2)* is therefore interesting both on the procedural question (whether to reopen the matter) and on the substantive copyright questions.

## The issues

The application in *Autodesk (No. 2)* was, by direction of the Court, confined to the threshold question whether the matter should be reopened. It is a deep-seated principle that there should be finality in litigation. This is ultimately justified by reference to the public interest. Kelly advanced two arguments: first, that he had not had an opportunity to argue the question which was ultimately decisive; second, that there was a public interest in having the questions determined correctly and that public interest was to be set against the public interest in the finality of litigation.

The second argument had an important consequence: it enabled the Court to be told in outline what the substantive arguments would be if the matter were reheard; in other words why the decision in *Autodesk (No. 1)* was wrong. Regrettably, some members of the Court took the opportunity to treat those arguments as if they had been fully developed, and to express views about them. The views they expressed cast a shadow over the application of reverse engineering in Australia.

> ***"When that device was attached to the serial port, it would perform the same function as the AutoCAD lock"***

## The decision: the procedural question

By a majority of 3:2, the Court refused the application. In *Autodesk (No. 1)*, there was one principal judgment adopted by the other members of the Court. In *Autodesk (No. 2)*, each Judge gave separate reasons for decision.

On the procedural question, Mason CJ thought Kelly had had an opportunity to argue the decisive point, but the opportunity had been clouded by various factors, including the way in which Autodesk's case had been put. He also considered that the importance of the questions in issue were such as to justify reopening the matter.

Deane J considered that Kelly had not been given an adequate opportunity to present submissions on the decisive question. He said:

> 'The unfortunate result is that there has, in my view, been an inadvertent denial of procedural fairness by the Court for the reason that...the Respondents have never been given a clear and adequate opportunity to place before this court full submissions about the correctness of the proposition which constituted the basis of the Court's ultimate decision against them.'

The other members of the Court thought the argument had been raised in the lower courts and that accordingly Kelly had had a sufficient opportunity to be heard on the question.

It must be observed that it is a remarkable thing that the members of the same bench could not agree between themselves about what it was that had been argued before them. Furthermore, it is surprising that a party on appeal may be taken to have had an adequate opportunity to be heard on a decisive question merely because that question was agitated in a lower court but not in the Court hearing the appeal.

## The decision: the copyright questions

More important in this context is that most members of the Court

commented on the substantive issues. Regrettably, it is now difficult to know precisely what is the High Court's position on copyright so far as it affects the computer industry. It can however be said with some confidence that the Australian judicial climate does not favour reverse engineering.

Mason CJ reaffirmed the fundamentals which had been cast into doubt by the decision at first instance. He said:

> '... first, the definition of a "computer program" by reference to "an expression of a set of instructions" should be understood as conferring protection upon the set of instructions itself – which must be identified with some precision – but as doing so in a way which is adapted to the nature of copyright. Thus, the protection of computer programs is to conform to the dominant principle of copyright law that protection is given not for ideas, but only for the form of expression...
>
> 'The second fundamental proposition confirmed in *Autodesk* derives from the first. Functionality is not the proper object of copyright protection.'

In *Autodesk (No. 1)*, the Court had said that the 127 bit sequence found in Kelly's lock and also found in Widget.C was a 'substantial part' of a computer program, namely Widget.C (or perhaps arguably AutoCAD). That finding was justified by reference to the fact that, without the 127 bits, Widget.C would not perform its task. It may be noted in passing, that that observation is strictly true of any program. It is difficult to imagine taking any 127 bits out of a program without impairing or destroying the program's ability to operate. However, as Mason CJ said, when determining what is a 'substantial part' of a copyright work it is important not to be swayed by the functional importance of the thing allegedly taken. Such an approach, he said,

> '...misconceives the true nature of the enquiry and seeks to reintroduce by another avenue an emphasis upon the copyright work's function. True it is that the look up table is essential to the functioning of the AutoCAD lock. However, in the context of copyright law, where emphasis is to be placed upon 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. This is particularly important in the case of functional works, such as a computer program, or any works which do not attract protection as ends in themselves (eg, novels, films, dramatic works) but as means to an end (eg, compilations, tables, logos and devices).'

***"...the Australian judicial climate does not favour reverse engineering"***

Brennan J said there was no available distinction between the data embedded in Widget.C and the instructions which access that data:

> 'To succeed in challenging the correctness of the judgment, the Respondent would have to demonstrate that the electronic signals should be divided into two categories, some of them being a "set of instructions" and others being of a different character. It is immaterial that some electronic engineers may classify some of those electronic signals as data. Once a discreet function of the computer is identified – here the running of the AutoCAD application – it is necessary to identify the electronic signals which, **as an entirety**, cause the computer to perform that function. As at present advised, I should think that those signals, **as an entirety**, answer the description of a "set of instructions" and an expression of those electronic signals answers the description of a "computer program" ...'

Deane J, persuaded that there had been an inadvertent denial of natural justice, did not express a view on the copyright questions.

Dawson J, who had delivered the principal judgment in *Autodesk (No. 1)*, considered Kelly had had an ample opportunity to be heard on the decisive question. He went on:

> 'That is sufficient to dispose of the Respondents' motion, but I think it appropriate to add that I have given consideration to the arguments which the Respondents would seek to put if the case were reopened, these arguments having been developed to a considerable extent during the hearing of this application. If it were necessary so to decide, I would be of the view that none of them would enjoy a sufficient prospect of success to warrant taking the exceptional step of reopening a judgment pronounced by this court.'

Gaudron J had the most to say about the copyright question. She said:

> 'There is no doubt that the Third Respondent studied the AutoCAD lock and thereby discovered the repeating sequence which it emit-

ted and without which the AutoCAD programs could not be run. Given the purpose and function of the AutoCAD lock in relation to the AutoCAD programs, it must have been obvious to the Third Respondent that the lock emitted a sequence which corresponded with something in the AutoCAD programs. As was accepted by the Respondents in the Full Court in relation to the Autokey lock and its reproduction of the look up table in Widget.C, unless the lock reproduced something within the program, "it would not do anything". And the evidence clearly shows that what it reproduced was the look up table in Widget.C. These matters all but compel a finding as to indirect copying of that look up table.'

These words strike at the heart of reverse engineering. It is not self-evidently copying to produce a work by observation of phenomena, with knowledge that those phenomena reflect 'something' in a copyright work. If I note the arrival and departure times of trains at Victoria Station, what I write will reproduce something found in a timetable. A finding of copyright infringement does not necessarily follow. Furthermore, whilst it might be said that an observation of the operation of the AutoCAD lock might obliquely reveal something about Widget.C, it is a very different thing to say that the existence of a sequence of digits generated by the AutoCAD lock necessarily implies the existence of a corresponding sequence of digits in Widget.C. Indeed, the evidence in *Autodesk* demonstrated that such an inference would be unsound.

Gaudron J went on:

'The Respondents hope to avoid a finding of indirect copying by arguing that the AutoCAD lock must have been devised first and the sequence of its signals later encrypted in the look up table with the consequence that it should be found that the Third Respondent did no more than what he readily acknowledges, namely, copy the repeating sequence emitted by the AutoCAD lock. But, clearly enough, the AutoCAD lock and Widget.C were devised in conjunction with each other and with the intention that they should compliment each other by the lock's emission of a sequence of digits stored in Widget.C. Perhaps the lock was wired first so as to generate the sequence eventually employed. But if so, that does not alter the fact that, just as with a conventional lock and key, the devising of one is necessarily the devising of the other. That being so, it cannot be said that there was any misapprehension of the facts involved in the finding of indirect copying.'

*"...it cannot be said that there was any misapprehension of the facts involved in the finding of indirect copying"*

This is difficult to follow. It avoids a problem by obscuring a crucial fact: Was Widget.C produced by observing the output of the AutoCAD lock? If yes, can the resulting look up table have that originality which will prevent Kelly from making the same observations and reproducing the results of those observations in a material form?

It is regrettable that Gaudron J adopted the analogy of a conventional lock and key. It may be with a conventional lock and key that 'the devising of one is necessarily the devising of the other'. It is not apparent that devising the AutoCAD lock, a simple pseudo random number generator, necessarily includes devising Widget.C. In fact, the evidence in the case was that there existed another program, SPtest.C, the purpose of which was to test locks. It was not a program made available to purchasers of AutoCAD. Like Widget.C, it monitored the response from locks and determined whether those responses were correct. SPtest.C did not contain or use a look up table. The curious result is that if, by some happenstance, the designers of AutoCAD had used SPtest.C within the AutoCAD software rather than Widget.C, the judgment would have gone in favour of Mr Kelly. However, as a person engaged in reverse engineering, Mr Kelly would be unable to know in advance whether his observations of the AutoCAD lock did or did not involve any infringement of copyright.

If that is a true reflection of the state of the law in Australia, reverse engineering is a hazardous activity. ✍

*Julian Burnside QC is a member of the Victorian Bar and was the senior counsel for the Respondents in the High Court in both Autodesk (No. 1) and (No. 2). This case note is based upon a paper to appear in the Computer Law & Security Report.*

*Footnotes*

[1] For example, see Stephen Saxby, Volume 5 *Computer Law & Security Report* 36 and by Tony Rein, Volume 6 *Computer Law & Security Report* 33.

[2] See 8 *Computer Law & Security Report* 142.