EDUCATION DEPARTMENT, VICTORIA

CONFERENCE ON COMMERCE TEACHING AND THE NEW TECHNOLOGY

TOWNHOUSE, MELBOURNE, 10 JULY 1980, 9.45 A.M.

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The Hon Mr Justice M D Kirby
Chairman of the Australian Law Reform Commission

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TWO ASSERTIONS

A good teacher should begin by asserting his thesis and by then proceeding to endeavour to establish (by evidence and argument) his propositions. My assertions before you are simple. They are two:

1. The law is in the midst of a great period of change and reform, the most dynamic of the causative forces of which is the combined force of science and technology.

2. Not only does this force have implications for the law and for the teacher of legal studies. It has, I believe, implications for the profession of teaching itself and for the way in which teaching, including the teaching of legal studies, will in the coming decades by essayed.

In this paper, I propose to seek to justify these assertions. Identification and description of the new technology scarcely requires many words from me. Within two or three decades have occurred the most amazing developments. Nuclear fission spells doom or promises limitless energy, according to one's outlook. In this very city, within recent weeks, the incredible advances of biology have been demonstrated. In vitro fertilisation (the test tube baby) is with us. Human tissue transplantation is a busy daily reality. Artificial

insemination processes have produced, we are told, 10,000 of our fellow citizens. The cloning of plants and prize bulls is now, so it is suggested, perfectly feasible for human kind. A recent A.B.C. talk programme (which many of you will have heard) suggested that the time is not far off when medical science will permit, by the frozen storage and transplantation of the human ovum, a woman to become, genetically, her own mother.

However, the development of the computer, the miniaturisation of the 'microchip', the linkage of computers by telecommunications and the revolution in information sciences, puts even these developments in the shade. It has been said that we are at the brink of a new industrial revolution more dynamic even than the first. By a most remarkable combination of transistor technology and photo reduction techniques, the 1970s saw moves towards the miniaturisation of computers. By processes of photo reduction 100,000 transistors can be integrated with circuits crammed into a single quarter-inch of silicone. This silicone 'chip', the 'microchip', seems every day capable of containing more and more data, retrievable at increasing speeds and dimishing costs. These, then are some of the chief forces of the new technology. They have implications for society. They have implications for the law. They have implications for education.[1]

FOUR THEMES

The law is a force for stability, certainty and predictability. In times gone by, it was much easier than it is today to teach the basic institutions and rules of the law, with a fair certainty that that which was taught would be that which would still exist during the life time of the pupil. In few areas can this be done with conviction now. We live in the midst of a time of great legal change. It is an uncomfortable time for the practitioners of the law, for legal administrators, for the judiciary and for those who teach the law, at whatever level. But no teacher of legal studies today, whether in a university, college of advanced education or school room, can approach his task faithfully and efficiently without regard to the dynamic forces for change that are at work. It is important to convey the elements of stability in the system. Realism requires that we should also endeavour to convey the elements of change.[2]

There are four themes which describe the chief forces that are at work affecting Australian society and its laws in the last part of this Century. These themes are big government, big business, big education and information and big science and technology.

So far as big government is concerned, we can all see the growth of the public sector and the increasingly important responsibilities it has to make decisions affecting every individual in society at various stages of his or her life. There will be no going back to the so-called 'good old days' of small government. Border skirmishes will be fought to rein in the public purse, to reduce taxation, to introduce 'sunset clauses' in legislation (by which a particular Act of Parliament will lapse after a given time[3]) and to limit and control the rapacious quango.[4] But I cannot foresee a return to the laissez faire society of the 19th Century. On the contrary, I believe that the growing integration of society and its recognition of responsibility for the poor, inarticulate, under-privileged members will, if anything, gradually increase the role of the public sector and its influence on our lives.

It is the recognition of this trend which has led governments of all political persuasions to develop protective machinery to stand up for the individual against the seemingly overwhelming and all-powerful bureaucratic state. Successive governments in the Commonwealth's sphere in Australia have reacted positively to the need to defend the individual against unreasonable administration. A national Administrative Appeals Tribunal has been established to hear appeals against administrative decisions made by Commonwealth officers. The Tribunal is empowered to hear such appeals 'on the merits' and generally to substitute for the bureaucratic decision what it feels to be the 'right or preferable' decision in the circumstances.[5] The Tribunal, headed by judges, sits in all parts of Australia. It has already built up a notable reputation for the independent and dispassionate scrutiny of administrative decisions.

In addition, an Administrative Review Council has been established to oversee the development of laws reforming administration. A Commonwealth Ombudsman (Professor Jack Richardson) has been appointed and his business expands daily. He now receives large numbers of complaints by telephone: an innovation which has promoted speed of attention to citizen complaints and an admirable cutting of red tape which secures prompt correction of bad administration. In every State there are Ombudsmen including in this State the distinguished Ombudsman, Sir John Dillon.

It is expected that the Federal Attorney-General will shortly announce the proclamation of the Administrative Decisions (Judicial Review) Act 1976. That Act, which has already been passed by the Commonwealth Parliament, contains a most important provision[6] to the effect that a person affected by the discretionary decision of a Commonwealth officer will in future be entitled to demand from him the reasons for his decision, his findings of fact and a reference to any evidence upon which he has relied. No more will the citizen be faced with a bland refusal. In the future he will be entitled to

know why a decision affecting him has been made by a public servant. A Bill was recently introduced in Federal Parliament to limit and modify the rights to reasons. But in the generality of cases, the right will be available.

Access to information is also a theme of other legislation. The Freedom of Information Bill, which is before the Australian Parliament, establishes the rule that in future people in Australia will generally be entitled to access to government information. Privacy legislation will be proposed in due course by the Law Reform Commission to ensure that individuals have access to information about themselves. A Human Rights Commission is proposed in a Bill before Parliament, precisely to test our laws against internationally agreed human rights. Similar developments are beginning to happen in all of the States of Australia. They reflect the reaction of the legal order to the growth of the public sector. Thirty years after Lord Hewart, the Lord Chief Justice of England, wrote 'The New Depotism', lawmakers and law reformers are putting forward effective, practical and accessible machinery to assert and uphold the rights of the individual against the administrator.

In a number of the projects of the Law Reform Commission, we have addressed this very problem. Our first report on Complaints Against Police[7] dealt with the provision of new machinery to permit independent review and scrutiny of decisions made by police in respect of public complaints about them. The Attorney-General and the Minister for Administrative Services announced this week that the Commission's scheme, with some modifications, will be implemented by legislation in respect of the new Australian Federal Police. Already, the scheme has been adopted, in substance, in New South Wales.[8] Particular aspects of the Commission's recommendations have been adopted in other police forces in Australia.

In the Commission's report on Lands Acquisition and Compensation[9], proposals are made to deal with the predicament faced by the individual when, under compulsory process, his property is taken by the Commonwealth for public purposes. The Australian Constitution did not incorporate a Bill of Rights. However, it did borrow from the Fifth Amendment to the United States Constitution one 'guaranteed right', namely, the promise of 'just terms' to persons whose property was taken by the Commonwealth for public purposes.[10] How do we translate this pious and abbreviated constitutional guarantee of 1901 into actual fair procedures for the handling of the human problems which arise when a person's home is suddenly resumed for an airport or a quiet suburban street is suddenly turned into a busy inter-urban highway? Addressing the practical problems of law reform, the Commission has proposed many new laws and procedures to translate 'just terms' into the requirements of the 1980s.

The second theme I have mentioned is big business. I will say less of this. But it is scarcely likely that the same disciplines which are now being developed and enforced as against big government will not, in time, come to the rescue of the individual against large corporations. They can be equally unthinking, oppressive and even bureaucratic. The problems of big business are somewhat different to the problems of big government. At least with big government, we share an ultimate national or sub-national identity. All of us have some control, however indirect, through the ballot box. But business can operate insensitively for its own purposes, without due regard for the needs of the country in which it operates. The ever-diminishing significance of distance and the ever- increasing speed and economy of international communications makes the development of international business both inevitable and, possibly, desirable. But there are by-products, which we will see more in the last decade of this century. For example, the efficiences which persuade electronic companies, motor manufacturers and others to centralise their research or other facilities in overseas countries may not benefit a small market economy such as Australia. A marriage of computers and data bases through satellite and other communication systems presents the very real possibility that vital data on Australian individuals and businesses will be stored outside our country. This is a concern which is in the forefront of much European thinking at this time. With memories of invasions still fresh in mind, European leaders are sensitive to the external storage of personal data, sensitive or vulnerable data, data relevant to national security and defence and data vital to the cultural identity of a country. Although these concerns are not yet in the forefront of Australian thinking, I believe that they will, in time, become matters upon which we will have to reflect. They may require new laws to protect Australian national interests, for the interests of international and trans-national corporations do not always coincide with our own.

A number of the projects committed to the Law Reform Commission reflect the concern with the private sector. Our reference on consumer indebtedness[11] seeks to bring the law more into accord with current conditions of consumer credit. There has been a vast expansion of consumer credit since the Second World War. But the law dealing with this topic remains very much as it was in the times of debtors' prisons. As is so often the case, the law deals with particular symptoms (a specific debt) rather than with the underlying disease (an inability to handle credit). Similarly, our tasks relating to insurance contracts requires us to re-examine insurance contract law to bring it more into accord with a consumer insurance industry where, do what you will, you will not persuade the insured to read the details of his policy. A project of the Commission on class actions raises the question of the most effective means of providing legal discipline for large corporations where legal wrong has occurred. In the United States, it has been said that the class action to deprive corporations of unjust enrichment contrary to law is a more effective sanction than the criminal penalty.

To the forces of big government and big business must be added the impact of big education and information in Australian society. No one should be surprised at recent changes in moral and social values in society. The education figures make change inevitable. Widespread literacy and universal suffrage this century have given people living in Australia the opportunity to interest themselves in community affairs. Education standards are steadily rising. The proportions of persons aged 15, 16 and 17 attending school, as disclosed in the last four censuses were:

Age	1961	1966	1971	1976
15	60.89%	73.74%	81.25%	86.43%
16	30.50%	42.45%	53.69%	59.13%
17	-	17.41%	29.17%	32.20%

Degrees conferred by Australian Universities have increased from 3 435 in 1955 to 8 731 in 1965 and 24 216 in 1975. Australians tend today to be more actively involved in the political process and in community activity than previously they were. Although our school retention rates are not yet comparable to those of the United States, Japan and many European countries, they are continuing to increase. Perhaps the most dramatic sign is the increase in the number of young women continuing their education beyond the age of 16. Within the past decade, the percentage has doubled. Our society is better educated and more inquisitive. It is daily bombarded with news and information, views and comment to an extent only made possible by the technological advances in the distribution of information. In short, in a fast-changing society, we have a better educated citizenry, liable to question received wisdom and accepted values to a degree that would have been unthinkable in previous generations. It is vital that these phenomena should be thoroughly understood by lawyers and those who teach legal studies. Indeed, it is vital that they be understood by all. Not only do they help to explain the challenge to long-established laws and institutions. They also justify many of the questions which are now being asked. They require an answer and, to some extent, the readjustment of the relationship between lawmakers, lawyers and law enforcers, on the one hand, and society on the other.

SCIENTIFIC CHANGE AND LAW REFORM

The fourth great force for change is specifically relevant to this Conference. It is the impact on our society of big science and technology. In many ways this is the most dynamic of the forces for change and is the one which the law and lawmakers find most difficult to accommodate. I need go no further than the programme of the Australian Law Reform Commission to illustrate the way in which rapidly changing science and technology is having its impact on our legal system. In some cases, science and technology come to the rescue of the law. In other cases, science and technology present novel

problems which can be swept under the carpet for a time but which ultimately require the attention of lawmakers. My thesis is not only that we must be alert to these forces for change, but that we must encourage bodies such as the Law Reform Commission to provide busy Parliaments and government officials with the best possible advice on the way the legal order can adjust to the challenges of technological advances.

Take first two cases in which technological developments have come to the aid of the legal process. The shocking toll of the road is a universal phenomenon of the post-automobile society. To natural and inevitable perils are added the special dangers which result from the conduct of intoxicated drivers, affected by alcohol or other drugs. It is not so very long since prosecution evidence, in cases involving drivers charged with driving whilst affected by alcohol, was confined exclusively to impressionistic evidence. Lengthy examination and cross-examination was required to test this evidence. Many of the disputes which revolve around impressionistic evidence of this kind were laid at rest by the introduction of blood alcohol analysis and breath analysis. How would we have coped, even as inadequately as we do, with the tremendous social problem of intoxicated driving, had it not been for the advent of breath analysis equipment? The Law Reform Commission was asked to report upon a number of defects which had become evident in the relevant law of the Australian Capital Territory. Its report Alcohol, Drugs and Driving[13] led to the enactment of a law, substantially adopting the great bulk of the Commission's recommendations. As in all its tasks, the Commission had a panel of consultants who included Dr N.E.W. McCallum, Reader in Forensic Medicine in the University of Melbourne and Dr D.G. Wilson, Queensland Government Medical Officer. The Commission also had the closest support and assistance from officers of the Australian Police Forces, Federal and State. It concluded that the primary method of ascertaining the presence of alcohol in the body of a suspected person should be breath analysis, conducted by means of an instrument approved for that purpose. It urged, in particular, the use of the Model 1 000 Breathalyser, with its facility to print out the results of tests conducted by it. Attention was called to other breath analysing instruments now being developed and the need to continue comparative scientific evaluation of them.[13] To cope with the growing problem of driving impaired by the consumption of drugs other than alcohol, new provisions were suggested for medical examinations and the taking of blood and other samples necessary to identify the presence of other intoxicating drugs. The report acknowledged that this was a growing problem with which the law would have to grapple.[14] In the first paragraph of the Commission's report, the way in which the law would increasingly look to science and technology was frankly acknowledged:

> How is the law to deal justly and promptly with those members of society who potentially or actually endanger themselves and others by driving a motor vehicle after having consumed a relevant amount of alcohol or other drug? The question must be resolved in the context of our present law and practice in the administration of criminal justice. The answers will require an examination of scientific instruments that have been devised for the specific purpose of putting at rest many old court-room controversies. New questions are raised concerning the proper faith that may be put by the law in machines, given that the consequences may visit criminal penalties upon the accused. These questions point the way for other likely advances in the years to come. It is therefore important that at the outset we should get right our approach to these novel legal developments.[15]

The Australian Law Reform Commission's report on Criminal Investigation[16] also reflected the endeavour of the Commission to facilitate the use of science and technology to put at rest disputes relevant to the guilt or innnocence of the accused. A facility for telphone warrants for urgent police searches and arrests was proposed.[17] This facility has now passed into law in the Northern Territory of Australia and there seems little doubt that it will be adopted elsewhere, as a means of retaining the benefit of independent judicial scrutiny of serious police actions, whilst acknowledging the special needs of police to act promptly in a country subject to the tyranny of distance.

Many other proposals in the report could be mentioned. One of them suggested the use of photography to record an identity parade and to place before the jury the way in which the accused was identified, where identity is in issue.[18] The common law acknowledges the special dangers of convictions based on identity evidence.[19] The need to protect against wrongful convictions on erroneous identification evidence cannot be met entirely by the facility of photography or video-recording. But a start must be made. Placing before the tribunal of fact, judge or jury, the actual evidence may be infinitely preferable to a courtroom debate, months later, concerning what occurred.

This principle applies equally to tape recording of confessional evidence. One committee after another, in Britain and Australia, has recommended the introduction of sound recording of confessions to police.[20] Nobody believes that tape recording could be introduced without problems and difficulties. Nobody believes that the tape recorder will be the complete answer to disputed evidence concerning what was said to police. But is there any doubt that in time sound (and probably video) recording of confessions to police will be used to put before the tribunal of fact the actual, alleged confession of the

accused. Quite apart from official committees of inquiry, the courts are now, with increasing insistence, suggesting that tape recordings should be used.[21] The difficulty of courts resolving the discrepancies between sworn police evidence and the denials of the accused promote the suggestion by the courts that the time has come to introduce technology to help lay this additional controversy at rest. There is no doubt that disputes about oral evidence (and particularly the so-called 'verbals') do nothing for the relationship between law enforcement officers and the community they serve. The Criminal Investigation Bill 1977, which is based upon the report of the Law Reform Commission, stops the talk. It introduces the facility of sound recording of confessions to Federal Police. Although the Bill is presently under reconsideration, including by the police themselves, the Attorney-General has said that it will be reintroduced into Parliament. I have said before that I believe it may be entirely appropriate that the Australian Federal Police should lead the way for the Australian police services in introducing and mastering this technological device. I repeat my view that, in time, recording of confessions to police will become a most powerful weapon in the armoury of the Crown to bring guilty accused to justice and to ensure that persons who are not guilty are not wrongly convicted.

If science and technology present solutions to some of the difficulties of the modern administration of justice, they also produce problems, as a number of the projects of the Law Reform Commission demonstrate. None is more vivid than the work of the Commission on human tissue transplantation. The Commission's report[23] had to grapple with a number of the very difficult issues which are presented when medical science overcomes the normal tendency of the human body to reject transplantation of organs and tissues of another. The Commission had to deal, for instance, with the problem of the definition of 'death' for legal purposes. The common law approached this definition from the viewpoint of common sense. Although the laws of Australia and Britain have never attempted to define 'death' with precision and had left its diagnosis to the medical profession, it is generally accepted that the classical criteria for determining death were the cessation of respiration and circulation of the blood. Interpose an artificial ventilator in a modern hospital and these criteria become not only irrelevant but potentially mischievous. In the English case R. v. Potter[24], a man stopped breathing 14 hours after having been admitted to hospital with head injuries sustained in a fight with the accused. He was connected to an artificial respirator for 24 hours, after which a kidney was removed and transplanted. The respirator was thereafter disconnected and there was no spontaneous breathing and heartbeat. At the coroner's inquest, the question arose whether the accused had caused the victim's death. Medical evidence showed that the patient had no hope of recovery from the brain injury. The coroner's jury found that the removal of the kidney had not caused the patient's death. It returned a verdict of manslaughter

against the assailant. He was then committed for trial but was later found guilty only of common assault. The unsatisfactory features of this case have left many lawyers with the conviction that the common law should be clarified to make it plain that death may be determined by reference to irreversible loss of function of the brain. The Law Reform Commission proposed that. Its proposals, in this respect, have been accepted in law in the Australian Capital Territory[25], Queensland[26] and most recently the Northern Territory. The issue is under consideration in the other States.

Equally contentious was the question whether a regime should be adopted by which all persons are to be taken as donors of organs and tissues for transplant purposes or whether a requirement of specific donations should be retained as a security against premature operations and to uphold the integrity of the individual and his control over his physical body.

Upon one matter within the Commission there was a division of opinion. It related to whether it should ever be permissible for non-regenerative tissues to be removed from living minors for transplant use. It was agreed within the Commission that the normal rule should be that in the case of non-regenerative tissues, removal from or donation by a living person below the age of 18 years should be prohibited by law. Two members of the Commission (including Sir Zelman Cowen then a part-time Commissioner) would allow no exception to this rule, believing that the existence of an exception would impose unacceptable pressures upon siblings or other relatives which would be avoided if the law, defending minors, prohibited donation in every case. The majority of the Commission took the view that subject to pre-conditions relating to independent advice and scrutiny by an inter-disciplinary committee headed by a judge, the family should be allowed to solve this crisis, without absolutist prohibitions of the law.[27] The case illustrates the fact that in all matters of law reform, but especially perhaps where medical science is involved, men and women of goodwill can have all the relevant information and expertise, yet can differ fundamentally upon what the reformed law should provide.

Perhaps the task before the Law Reform Commission which most vividly illustrates the impact of modern technology on the law is that which requires the Commission to advise on new laws for the protection of privacy. There are many new technologies which affect the privacy of the individual in today's society. They include surveillance devices, electronic telephone tapping and listening equipment, optical means of surveillance and so on. But far more important is the impact of computers on individual privacy. In its capacities to collect vast amounts of information, to retrieve it at ever-diminishing cost and ever-increasing speed, to integrate information supplied from many sources and to do all this in a form which is neither readily accessible nor understandable by the ordinary layman, the computer presents new problems which the

law must seek to face up to and resolve. In Europe and North America, despite their differences of language and legal history, a generally common solution has been found. It is to uphold the right of individual access to automated personal data. Exceptions are provided for confidential and secret data, such as may be contained in national security and some police intelligence files. But it will be important, if we value individualism, that we in Australia, too, provide accessible and effective machinery to deal with this by-product of computerisation of society. Computers present many other problems that will be faced by the police. In a sense, they render society more vulnerable to terrorism and accident. Vital information may be destroyed much more readily where it is stored on a small computer tape. There was a certain protection in the inefficiency of paper files. The Law Reform Commission has recently delivered two discussion papers on the subject of privacy.[28] Later this year it will conduct public hearings in all parts of the country. Some of you may care to attend and to bring classes to watch the public hearings of the Commission: observing consultative law reform at work.

IMPLICATIONS FOR THE TEACHING PROFESSION

The way in which teaching has been conducted has not changed radically over the centuries. It has simply become available to many more. The new technology which so profoundly impacts the law promises also to have its effect on all the professions, including the legal profession and the teaching profession. In the law, the process of collecting legal data by computer has already begun in the United States, Britain and Australia.

In the United States there are large systems by which statutes and case law can be retrieved from computerised data bases. In Britain a national grid of computerised legal information, known as the National Law Library, has recently been inaugurated by Lord Scarman.[29] It will permit the supply of legal material to the judiciary and the legal profession in a number of centres throughout the United Kingdom. Some believe that computers are being used only just in time to help lawyers cope with the massively expanding volume of statutes and case law and the escalating costs which researching the law (and simply finding out what the law is), involves, if traditional means of human endeavour are used. The U.K. National Law Library is a wholly professional body established by the professional societies of barristers and solicitors. Lord Scarman is the first President of the Trust. Seminars are being held all over the United Kingdom to explain the principles developed for data base composition and access to ordinary members of the legal profession. The accounting profession, which since the Second World War cannily out-manoeuvred the legal profession in important areas of tax, corporate and securities law advice, has an equal interest in these developments.

In Australia, despite a national committee on the computerisation of legal data, progress is occurring at a snail's pace. In the Federal sphere, the Commonwealth Statute Book has been computerised (but not the Regulations and Ordinances). An attempt has begun to put the reports of the High Court of Australia, the Commonwealth Law Reports, on computer (but not the reports of the Supreme Courts of the States). Accessibility to the Federal computer is at present limited to Federal officers. Our Parliaments continue to produce large numbers of laws. More than a thousand Acts of Parliament were produced by Parliaments in Australia last year: and all of us are deemed to know the law. Yet with some notable exceptions, inadequate efforts are made by Governments to ensure that the professions concerned, let alone the public generally, are kept informed of these changes and have them at their fingertips.

Apart from the servicing function promised by eventual computer retrieval of legal data, will the impact of the microchip go beyond this on the professions of law, accounting and public administration? I suspect that it will.

In the first place, there is no reason why much routine interrogation could not be done by specially programmed computers to 'diagnose' legal as well as physiological problems. Much of the present litigation in Australia, for example, involving motor vehicle accidents, industrial and workers' compensation cases, would readily lend itself to a form of routine analysis. Yet such litigation is said to constitute about 90% of the bulk of work in Australian courts. Having regard to our adversary mode of trial, I do not foresee the computer replacing the barrister or, I should say, the judge. Though in truth much of the work of each is routine and susceptible impart to automation, notions of human judgment and the way we presently do things, require that for the foreseeable future, the barristers' skills of advocacy and the judges' discernment, wisdom and judgment should be immune from computer controls.

That is not to say that each will not be radically affected by the computerisation of society. I predict that within a decade or so judges and barristers will have at their respective tables computer retrieval equipment to secure instanta relevant statutes and case law. I do hope that in the costly enterprise of the High Court in Canberra and other new courthouses, provision is being made for the installation of these devices in the foreseeable future. Just as the generation of schoolchildren of today were released from the multiplication tables on the back page of the school exercise book and have adapted with facility to the portable calculator of the 70s, so judges and barristers of the future will, I am sure, have instant access to their data: their professional skills being more productively devoted to using and considering data rather than, as at present all too often, searching and finding it. Evans, in his The Might Micro puts it thus:

> The law which seems even more mysterious and impenetrable will also find itself being subjected to the physical gaze of computer programmers and systems analysts. And when it does, its impenetrability may turn out to be equally illusory. Legal matters, it is true, have a different kind of depth and subtlety. ... Precedent is all-important - what happened in this case in 1964, to that judgment in 1888, to that appeal in 1932. But this is precisely the kind of information which can easily be lodged in a computer's brain and which can be called up at the press of the right button by anyone following the simplest book of rules. It is difficult to see how the 1980s will get far under way before the economic advantages of [collecting] the law in computer terms are recognised. Probably the main thrust towards computerised legal administration will come from big companies who would like to simplify or eliminate this traditionally expensive facet of their internal bureaucracy.30

I also believe that the computer will replace the lawyer in many areas of activity, not least land conveyancing which is the staple of the work of many solicitors.

The teaching profession will not be exempt from the impact of the new technology. The implications of what the French have called the 'informatisation' of society for the teaching profession is also enormous. Pocket calculators have been accepted throughout the Western school system. They are only the forerunners of computerised teaching aides and learning devices. In Britain, the late '70s saw the development of the so-called MINNIE, no bigger than a calculator and weighing about the same, able to translate the English language into French or any other language for which it is programmed. Evans describes the development thus:

> In its earliest form MINNIE had a relatively small vocabulary - a few hundred words only and operated off a micro processor chip with a memory of about two kilobytes. Even so, users found it really helped them to brush up their French. ... But these tiny memories are completely unrepresentative of what such teaching aides will come equipped with as we move into the 80s. Chips containing over 100 kilobytes of information - the equivalent of thousands of English words - are already being manufactured, and even bigger memories are on the drawing board. By the mid 80s, complete book dictionaries will easily be packed into mini-type devices and by the end of the decade the chips of these tiny computers could contain not just one but several common languages.31

The use in language instruction is only the first and most obvious of the ways in which the computer will be used in teaching:

> Computers are advancing on a variety of fronts. Portable computers can already be plugged into T.V. sets, allowing full colour displays, and even the generation or manipulation of graphic material - sophisticated versions of [present] games ... and can be linked up to other computers to allow 'group' work. Voice output in the form of limited synthetic speech is already available at low cost and in many of the language teachers, the computer will not only display the text but also speak it. Computers which recognise the human voice and could correct spoken words and phrases, drawing attention to pronunciation and accent problems, are not likely to be commercially viable before the ... middle term, but they will come. Really powerful interactive computers capable of having extensive conversations with their users ... will not be available until the 1990s or later.[32]

One of the winners of the Brain of Britain contest[33] revealed that the way he did it was by having throughout his house a number of encyclopaedias which he could examine from time to time. How much easier it would be with a pocket calculator, ever-ready to fill our minds with diverting, instructive information. Whilst the value of 'browsing' should not be underestimated, nor the marvellous facility of the human mind to link previously unlinked data in an unscientific way, there is little doubt that both for the content of education and for the techniques of instruction about which we know so little, the information sciences will present great opportunities and challenges to the teaching profession. Again, however, they may reduce the need for teachers by substituting automated instruction for many of the routine tasks presently done by man.

> The truth is that the world is about to move on from the era where knowledge comes locked up in devices known as books, knowledge which can only be released once the keys to their use have been acquired. In the era it is about to enter, the books will come down from their shelves, unlock and release their contents, and cajole, even beseech, their owners to make use of them.[34]

CONCLUSION

The mark of the true professional is his open mindedness, his pursuit of excellent high standards and his public spirit. In a time of great change, it is easy to seek to cling to old certitudes. In many ways it is important that we should not lose sight of the forces of stability and order, of which the law is nowadays probably the most important. Nevertheless, one doesn't have to be particularly alert to see the changes that are going on in the law and in teaching. The new technology is the greatest force for change. It will affect my discipline. It will affect your discipline. It is important that each of us should

be alert to the changes that are occuring. It is vital that you should instil in students an appreciation that the law is not an immutable force that stands rigidly opposing change and reform. Reform is 'change for the better'. Science and technology promote the need for reform. It can be said with confidence that at last the law, limping it is true at the tail end of the flock, is beginning to respond.

FOOTNOTES

1. See M.D. Kirby, Are the Professions Ready for the Microchip? Address to the Victorian Council of Professions, Melbourne, 9 July 1980, mimeo.

2. See M.D. Kirby, Law in Schools. Address to the Australian Commercial and Economic Teachers' Association Conference, Canberra, 31 July 1979 mimeo.

3. The Human Rights Commission Bill 1979 (Cwlth) as amended in the Senate will lapse, if enacted, after five years, in default of Parliamentary continuance.

4. Quasi autonomous non governmental organisations.

5. Re Becker and Minister for Immigration and Ethnic Affairs (1977) 1 ALD 158,161; (1979) 2 ALD 60,69.

6. Administrative Decisions (Judicial Review) Act 1977 (Cwlth), s.13 (not yet proclaimed).

7. The Law Reform Commission, Complaints Against Police (ALRC 1) 1975. See also ibid, Complaints Against Police: Supplementary Report (ALRC 9) 1978.

8. Police Regulation (Allegations of Misconduct) Act 1978 (N.S.W.).

9. The Law Reform Commission, Lands Acquisition and Compensation (ALRC 14) 1980.

10. Australian Constitution, s.51(xxi).

11. The Law Reform Commission, Insolvency: The Regular Payment of Debts (ALRC 6) 1977.

12. The Law Reform Commission, Alcohol, Drugs and Driving (ALRC 4) 1976.

13. ibid., 125.

14. ibid., 131.

15. ibid., 1.

16. The Law Reform Commission, Criminal Investigation (ALRC 2) 1975.

17. ibid., 95.

18. ibid., 53.

19. R. v. Turnbull [1971] 1 QB 224.

20. For a list of the reports, see Kirby, Controls Over Investigation of Offences and Pre-trial Treatment of Suspects (1979) 53 Australian Law Journal 626,628.

21. See Sholl J in R. v. Governor of Metropolitan Gaols; ex parte Molinari [1962] VR 156,169; Gibbs J in Driscoll v. The Queen (1977) 51 ALJR 731,742.

22. Connor, Some Aspects of Arrest and Pre-trial Detention, paper for the 54th International Seminar of UNAFEI, mimeo, 1980, 21-22. For a recent case in which forensic evidence (blood grouping) shattered an otherwise compelling alleged oral confession, see Kellam, A Convincing False Confession (1980) 130 New Law Journal 29.

23. The Law Reform Commission, Human Tissue Transplants (ALRC 7) 1978.

24. (1963) 31 Medico-Legal Journal, 193. See ALRC 7, 58.

25. Transplantation and Anatomy Ordinance 1978 (A.C.T.), s.42.

26. Transplantation and Anatomy Act 1979 (Qld), s.45.

27. ALRC 7, 51.

28. The Law Reform Commission, Privacy and Intrusions (ALRC DP 13) 1980; Privacy and Personal Information (ALRC DP 14), 1980.

29. (1960) 77 Guardian Gazette 81.

30. Evans, 114-5.

31. ibid., 120.

32. ibid., 127.

33. ibid., 122.

34. ibid., 129.