

# Scholarship, intellectual ownership and the law



*Will copyright survive the World Wide Web?*

*Can indigenous communities control their heritage?*

*Should the building blocks of life be patentable?*

At a time when the Federal Government is rewriting Australia's copyright law, speakers with diverse views debated these and other topics at a symposium on scholarship, intellectual ownership and the law, held at the National Library of Australia in Canberra on 15 and 16 July 1999.

The symposium was organised by the National Academies Forum and the National Library of Australia, and sponsored by IP Australia and the Commonwealth Department of Communications, Information Technology and the Arts. The National Academies Forum is a collaborative body of the four learned academies in Australia – the Academies of Science, Technological Sciences and Engineering, Humanities, and Social Sciences. The symposium was chaired by the President of the National Academies Forum, Professor Malcolm Gillies.

This report is a summary of the papers and discussion at the symposium. More information is available at the National Academies Forum web site [www.naf.org.au/iosymp.htm](http://www.naf.org.au/iosymp.htm) or from Dr Nancy Lane, phone (02) 6247 5777, email [do@science.org.au](mailto:do@science.org.au).

## Contents

- 2 Ownership and intellect – Malcolm Gillies
- 2 The biota and indigenous people – Henrietta Fourmile
- 3 The myths of creation – Ian David
- 4 Government policy – Kay Daniels
- 4 Issues in the humanities – Tony Coady
- 5 Issues in the sciences: scientists' economic potential – Sue Serjeantson
- 5 Issues in the social sciences – Peter Spearritt
- 6 Issues in the technological sciences – Colin Adam
- 8 The indigenous knowledge industry – Henrietta Fourmile
- 8 From garret to global marketplace – Dale Spender
- 9 The power of the new media – Mara Bún
- 9 The availability of scientific information – John Zillman
- 10 Copyright in the online economy – Virginia Morrison
- 11 Maintaining the balance – Annabelle Herd
- 11 Collaborative information centres – Alex Byrne
- 12 Patenting human genes – Dianne Nicol
- 13 Bioprospecting for new pharmaceuticals – Ron King
- 14 Licensing: turning research into income – Anne Trimmer
- 14 Intellectual property management – Julian Land
- 16 Issues and future action – Mark Armstrong



Malcolm Gillies

## Ownership and intellect



Professor Malcolm Gillies is President of the National Academies Forum and of the Australian Academy of the Humanities. He is a Professor of Music at the University of Queensland, with research interests in 20th century arts and culture.

In his 'Song of Myself', the 19th century American poet, Walt Whitman, looked at the animals, 'so placid and self-contain'd', and surmised: 'not one is demented with the mania of owning things'.

*The Bible* blames the snake for this mania. In the Garden of Eden, the snake tempted the woman to eat from the tree of knowledge of good and evil. Sharing that intellectual property of the gods, the knowledge of good and evil, led to Man's fall and banishment from the Garden of Eden.

Much of human history has been concerned with the ownership of physical things, most notably, land. Colonisation, based upon the legal concept of *terra nullius*, has given rise to the most intense quandaries of 1990s Australia.

The mass of inventions of the late 19th and early 20th centuries has pushed issues of ownership from the physical to the intellectual domain, into the realms of patents, trade marks, circuit layout rights and copyright. Here are several current flashpoints of intellectual ownership.

Iceland is compiling a health database, containing medical records, genealogies and genetic information, for most of its population. Study of Iceland's shallow gene pool could help show the cause of various diseases. But who will play God to God's codes? Who will ensure that this knowledge is used for good and not for evil? Who will decide what is good and evil amid such complexity? Many Icelanders, fearing commercial abuse, have refused to give permission for their data to go into the national health database.

Millions of people daily engage in the legally questionable downloading of music or audiovisual files from the World Wide Web. Can this be contained? Or will copyright not survive long into the 21st century?

Indigenous people seek to gain or regain control of their cultural heritage. How can indigenous communities continue to own and manage their materials? What do we do, for instance, when indigenous law does not recognise an end date to copyright?

Many gatherings have been held to ponder the legal intricacies of intellectual property laws or their ramifications particularly for business sectors or scholarly activities. For this symposium, the National Academies Forum wanted to

capitalise on its reach across all the disciplines to examine the broader trends in intellectual ownership, then to see how these trends might relate to current or proposed laws. In particular, these include the Copyright Amendment (Digital Agenda) Bill to be introduced into the Federal Parliament later in 1999, and World Intellectual Property Organisation treaty proposals in areas of copyright, databases, performances and phonograms, and indigenous cultural rights. These laws and treaties are extending concepts of intellectual property into new and often contentious areas, such as industrial awards and international trade obligations.

Some of the dialectics to be raised by the symposium are:

- strong protection versus equitable access
- commercial competition versus cultural protection
- public versus private interests
- international versus national obligations
- collective versus individual rights
- the immediate versus the long term in policy
- artists and creators versus the rest.

Henrietta Fourmile

## The biota and indigenous people



Associate Professor Henrietta Fourmile teaches in the Centre for Indigenous History and the Arts at the University of Western Australia. Before that, she worked in Montreal with the United Nations Secretariat for the Convention on Biological Diversity. She comes from Yarrabah, near Cairns.

At least 600 million people identify as indigenous peoples and constitute much of the planet's cultural diversity. If we include communities who have resisted the adoption of Western-derived practices of agriculture, forestry, animal husbandry and fishing, we are referring to the large majority of the world's rural and coastal non-urban populations in Africa, Asia and Central America – between 1.5 and 2 billion people. These communities are the principal custodians and users of the world's biodiversity, particularly that associated with our food and medicines.

The value of indigenous knowledge of traditionally used species has long been known. It has been used to increase the efficiency of screening plants for medicinal properties. The drugs atropine, codeine, morphine and quinine owe their origins to indigenous usage. Over 30 000 species of medicinal plants provide health care to an estimated 80 per cent of the world's inhabitants.

The biological diversity on which the world's food and medicines depend cannot be conserved without cultural diversity. Yet cultural diversity is threatened on an unprecedented scale. If language extinction is a measure of the loss of cultural diversity, half the world's languages will disappear within a century.

Commercial interests seek free access to the knowledge of indigenous communities, which they consider to be in the public domain, and then modify the knowledge superficially and transfer it to the private domain of intellectual property rights. This is particularly the case in regard to the patenting of life forms and the recognition of plant breeders' rights. This knowledge is communally owned by indigenous people but it cannot be protected by Western patent laws.

The Convention on Biological Diversity acknowledges traditional ecological knowledge and the customary use of resources. Acknowledgment is needed through the existing intellectual property regime or by setting up a new regime.

A number of options for the protection of indigenous knowledge are being considered. One is to require the prior informed consent of indigenous communities before bioprospecting contracts are issued. Another is to require the disclosure of the country or community of origin of knowledge or biological samples in patent applications; this could stop the issue of a patent.

Other options include:

- national governments that implement laws to protect indigenous intellectual property
- legal systems that recognise traditional resource rights
- industry codes of ethical conduct
- biodiversity agreements sharing benefits between bioprospectors and indigenous communities
- the use of existing laws dealing with cultural heritage, land tenure, nature conservation, economic development or community governance
- the accommodation of customary law within national legal frameworks and its use to govern access to traditional knowledge and resources.

Indigenous communities may also use the common law as a source of remedy for unconscionable behaviour, unjust enrichment, breach of confidentiality, passing off and unfair competition.

International treaties, such as the Convention on the Elimination of All Forms of Racial Discrimination and the World Trade Organisation's TRIPs Agreement, could also be used to protect traditional knowledge.

Ian David

## The myths of creation



Ian David is a screenwriter, known for his works *Blue Murder* and *Joh's Jury*. He is an advocate for the rights of artists and creators and a board member of the copyright society, Screenrights.

As I get older I find I am persistently compelled to see myself as an economic unit, a cog in the machine of commerce. Marx didn't get it all wrong. Two maxims increasingly ring out with each passing financial year. Capitalism turns everything into a commodity; and the ultimate goal of all capital is to achieve monopoly.

Those qualities of humanness (art, religion, language and kinship) eventually all fall to their knees and drop their heads to the sword of commerce, the balance sheet. The law of the jungle is, after all, the ultimate human environment.

My university days were joyfully naive, free of grubby considerations like fees and user pays. Thinking was free. The very strings and building blocks of life were sacrosanct, out of reach of advertising and marketing managers. Unfortunately, that's all proving to be myth now. The gap between having an idea and using it is occupied by an accountant.

Two developments in the last decade of the last century of the millennium have conspired to turn up the heat on copyright creators. They are the final triumphant lunge at the tape by the forces of capitalism and the information access explosion of the Internet.

The free market economy has seen off its ideological competition and left us with a monopoly. 'Competition' and 'productivity' are words we now hear every day in relation to schools, universities and public utilities, as well as companies.

Conceived as a vast network for disseminating knowledge and ideas, millions now see the Internet as a shopping mall in cyberspace for bargain hunters and bored yuppies and stockbrokers with an itch for the latest toy. Good ideas make money and the Internet is becoming the equivalent of the information fast food franchise.

Recently *The New York Times* revealed that 83 per cent of the World Wide Web is reserved for commercial activity, while only 6 per cent contains scientific or educational material.

The commingling of these two regimes, free enterprise and the Internet, pose a serious threat to the creative community. The Federal Government's proposed Copyright Amendment (Digital Agenda) Bill abandons the principles of free enterprise to regulate relationships and exchange in

the digital age. The re-alignment of rights is disadvantageous to copyright creators and owners. It elevates end users and copyright holders above the creators of intellectual property.

The Digital Agenda Bill will, in effect, disallow copyright owners to protect their intellectual property due to the provision of fair dealing. The Copyright Law Reform Committee reported that 'fair dealing provisions are needed to ensure the free use of copyright material in the digital environment for purposes that are socially desirable'. Is this a gift to the people? It would seem that one of the great planks of the modern economy, the user-pays rule, doesn't apply here.

The legislation will allow the wholesale copying by libraries and educational institutions without payment to authors or publishers of the works. This may be called fair dealing; others might call it theft or welsling or freeloading.

Ideas are cheap, so cheap in fact, they don't have to be paid for. Why is it acceptable to purchase a book, the price of which includes the writer's royalty, and not expect to pay for usage because the book has been rendered in digital form? Such usage is a denial of the copyright creators' ability to earn a living from their intellectual property.

The underlying suggestion is that authors aren't part of commercial reality; they do it for the love of it, and should pay consumers for the privilege of being exploited.

The kind of copyright collecting regime that operates in Europe acknowledges the relationship between the author and his or her work. This scheme rewards merit in the true spirit of free enterprise.

This fast and furious journey into the digital future may force creators to become Luddites in order to protect their work, ideas and reputations. They may be forced to disseminate their work in the more secure forms that predate the digital age.

*Kay Daniels*

## Government policy



*Dr Kay Daniels is General Manager of the Intellectual Property Branch of the Department of Communications, Information Technology and the Arts. Before joining the public service, she taught history at the University of Tasmania.*

This is a very active period of copyright reform. A number of amendments to the Copyright Act 1968 are under way. This year two copyright amendment bills – on decompiling computer software and on sound recordings – have been introduced into Federal Parliament. Two more – on the digital agenda and on moral rights – will be introduced soon.

With this legislation the government is trying to create a balanced, workable, up-to-date regime, one that encourages creators and investors while ensuring that users gain appropriate access. The intention is also to acknowledge the fundamental impact that changes in technology are having on the creation and transmission of copyright material.

In the Digital Agenda Bill the exceptions given to libraries, museums, galleries and educational institutions allow reproduction for purposes such as study and research. Copyright holders argue that there is too much latitude in the proposed law. The libraries have also put their views forcefully. The dominant issue is the need to balance the interests of users on the one hand and creators and investors on the other.

Another issue is the intellectual property of indigenous people: issues of traditional knowledge, community ownership and authenticity arise. Indigenous creators require more effective protection for their work. The government is encouraging the development of protocols and model contracts and a national authenticity label.

To provide an incentive for creativity, the new regime requires mechanisms that distribute payments back to legitimate copyright holders in an efficient, equitable and transparent way. They need to be paid a fair price, not a price that is so high that it stifles the market.

Copyright is not well understood. Lack of awareness leads to copyright infringement and a failure to manage intellectual property effectively. The government is developing guidelines on the use of intellectual property associated with information technology projects to improve Commonwealth management of its intellectual property and, where appropriate, allow its commercialisation by the private sector.

Universities are major creators and users of intellectual property. The government discussion paper, *New knowledge, new opportunities*, makes it clear that universities will have to become much more efficient managers of intellectual property.

Universities must ask whether it is wise to relinquish without payment control of their intellectual property (as in some journals), and then have to pay a third party for its use.

*Tony Coady*

## Issues in the humanities

In the intellectual arena tension exists between the demands of ownership and the values of free communication and the open exchange of ideas.

'Intellectual property' is something of a misnomer since both legal and moral traditions hold that ideas **cannot** be owned. And yet, copyright and patents clearly give some entitlement to what has been intellectually produced. The

usual resolution of the puzzle is that the ownership so conferred is to very particular expressions or practical applications of an idea. This is important ethically because any system of property rights which threatens our human potentiality for learning from each other and operating within a tradition of criticism and creativity is dangerous.

It is clear that an awful lot about property rights is social, not 'natural'. There may nonetheless be intrinsic property rights or important considerations about human beings that back up social property rights.

One of these is the idea that we have a natural right to own our own thoughts. But this idea seems too weak to support the edifice of intellectual property rights, as does the idea of desert, that someone who has put in the effort involved in producing a new idea and its application should be rewarded.

A second notion is that of contract. When I have thought up something, I am entitled to contract for the terms under which it will be revealed. This is inadequate because it begs the question whether the revealing of my idea is something that should be a matter of restrictive contract or not.

Another defence often made for the granting of legal intellectual property rights is that they will act as an incentive for the production of new ideas, inventions and books. But there is not much evidence that this is true. Nonetheless, perhaps a utilitarian justification makes more sense than the alternatives.

One interesting issue about authorship in humanities disciplines is the ownership of course materials. It is increasingly common for universities to assert their rights to such materials, but the moral case for their increasingly expansionist claims is thin. A general feature of all such proposals is a removal of teaching material from the realm of personal authorship and the marketing of it as neutral packaged knowledge.

This is a particularly threatening process in the humanities. The provision of packaged information denies the perspectival reality of authorship and the contested, critical nature of knowledge. The progress of knowledge and its transmission is dialogical and conversational. Hence the personal voice is an essential element. I worry that the commercialisation and commodification of knowledge that is now dominating higher education may eventually destroy it.



Professor Tony Coady is the Founding Director, Centre for Philosophy and Public Issues, at the University of Melbourne. He is a popular commentator on social issues.

Sue Serjeantson

## Issues in the sciences: scientists' economic potential



Professor Sue Serjeantson is President-elect of the Federation of Australian Scientific and Technological Societies and a Visiting Fellow at the Australian National University. As the former Director of the Institute of Advanced Studies at the ANU, she was closely involved in the protection and commercialisation of the university's intellectual property.

The main issue confronting Australian scientists with respect to intellectual property and the law is the collapse of business expenditure on research and development in Australia. This fell 4 per cent last year, following a fall of 7.4 per cent in the previous year.

Many experts believe that the greatest hindrance to commercialisation of research is not the low level of tax concessions but, rather, the capital gains tax regime in Australia. Leaks about the Ralph review of business taxation suggest that recommendations may include a reduction in capital gains tax from the current marginal rate to about 15 per cent. Will a capital gains tax of 15 per cent attract foreign venture capital and increase the rate of commercialisation of intellectual property in Australia? This remains to be tested.

A recent survey of scientists by the Federation of Australian Scientific and Technological Societies identified cultural obstacles to the commercialisation of intellectual property, but many consider these obstacles are of lesser import than current taxation law.

The recent green paper on higher education research and research training, *New knowledge, new opportunities*, proposed that funds for university research should be diverted through various incentive schemes to support industry-oriented rather than basic research. But the problem must be tackled at the structural level of taxation reform, not at the level of using incentives to distort the academic enterprise.

Peter Spearritt

## Issues in the social sciences

No paper on social science is complete without a survey. Please raise your hands.

How many people here own copyright in and have received income from text, music, images or voice recordings? I estimate about 25 per cent.

How many people have signed over copyright to the Crown or, by the nature of their employment, produce works owned by the Crown? 25 per cent.

How many people pay royalties or fees to other copyright holders on a regular basis, for text, videos and the like? 45 per cent.

How many people have knowingly abused or otherwise tried to get around copyright, for scholarly or library purposes of course? 55 per cent.

Copyright affects all of us. When I am choosing photographs to illustrate a book, the copyright fees affect my choice.

As indicated above, minor transgressions are occurring all the time. However, with the advent of the World Wide Web, the scale has reached an all-time high. All sorts of people are downloading text, pictures, music and sounds with abandon, and altering these materials without regard for the creator. A whole generation of web manipulators doesn't even regard this as sinful.

This extraordinary infringement of copyright is happening at the same time as knowledge, especially in the form of databases, is becoming increasingly expensive. I once bought a few volumes of census results for the equivalent of 25 cents each. Census statistics now cost \$40 per run or \$4000 for the data on CD-ROM. Census data is something we all have to contribute to.

Because of the policies of some journals, publicly funded authors at universities now have to pay to get access to their own research results. Universities and libraries are trying to enter this commercial world, but are not successfully expanding. They and other public organisations are subsidising the rest.



*Professor Peter Spearritt is Foundation Director of the National Centre for Australian Studies at Monash University in Melbourne. He was an author representative on the Public Lending Right Committee.*

*Colin Adam*

## *Issues in the technological sciences*

Scientists have to understand the way a deal is constructed. Returns from intellectual property rights are negotiable. A company has to do something to set its value for negotiation: make an investment (on its own, with others or in a pool) and calculate the likely returns on that investment. If you don't understand the potential use of your intellectual

property, you are at a disadvantage to someone who does.

New technologies such as biotechnology may have problems during commercialisation. For example, when Sainsburys supermarkets in Britain placed genetically modified food in its stores, the public did not buy it.

For Australian technology to be sold at a profit, markets will look at a number of factors to determine the value of the company that owns the technology:

- the quality of the board and management
- the cost of capital
- a stock market analysis of future earnings
- brand name and reputation
- market access and potential growth
- the availability of new technology.

The technology (and its associated intellectual property) is at the bottom of the list. The potential earning stream – through the marketing of products and the negotiation of deals – may be independent of the original technology.

Knowledge is becoming the most valuable asset of major corporations. But to cut costs, some corporations are closing their research and development departments. Their technologies will increasingly be sourced from competitors, government research bodies, universities or private consultants.

As a result, the bargaining balance over intellectual property between corporations and research providers seems to be shifting. The companies used to dictate terms; now they need research providers. They are more likely to confine their demands to the real requirements of their competitive position.

Global businesses must face global issues. This means Australia has to match international policies and practices. If you have a choice between filing a patent in the USA, Europe or Australia, you should be aware that US patent protection makes international negotiation easier.

One aspect of globalisation is that CSIRO has become more like a high-technology company than a university. The research of many Australian universities is not yet internationally competitive. We have to ask: Is the Australian community getting a reasonable return on its investment in these universities?



*Dr Colin Adam is Deputy Chief Executive of CSIRO, from which position he oversees the organisation's commercial activity. He is also an adjunct professor in the Faculty of Engineering, Physical Sciences and Architecture at the University of Queensland.*

## Discussion

This is a summary of discussion. Audience comments are in italics.

*Would moral rights help authors? Do they carry weight?*

Colin Adam. Environmental disasters such as Bhopal and the North Sea have led to a reluctance to accept genetically modified foods; consumers don't trust chemical companies. The recognition of scientists' moral rights may increase trust in companies. Citizens bear the cost when things go wrong.

Ian David. That shows a lack of understanding of moral rights. Moral rights cover the relationship between the creator and the work. Legislation would be a great step forward: people would understand the relationship - a European idea - better than before.

*The audience survey showed that 55 per cent are abusing copyright. What does the law matter if enforcement is weak? Is copyright dead?*

Peter Spearritt. It's not dead. The World Wide Web will evolve so that you can search it for copyright infringements. It is a big technological ask, given the low success rate for search engines. Some artworks and databases - those with an income stream attached - will be well respected. You will be chased for infringing the copyright of Norman Lindsay, but not for Emil Mercer.

*A lot of those who obtain royalties are not the owners of copyright. When publishers negotiate with an author, they are not interested in a licence; they want the copyright. A lot of authors need help from the Australian Society of Authors.*

*What are the priorities for intellectual property? The web offers an effective means of payment - some shareware operations have become major businesses.*

*Scientists say investment is the top priority. The humanities are agnostic; for them, more protection might help.*

Peter Spearritt. A challenge to the universities is major publishers buying the rights in popular areas so they can corner the market in, say, first year accounting texts. The publishers buy the bestsellers and set up elaborate web sites. What happens when the small publishers are bought out? How does accounting maintain its critical edge?

Tony Coady. As a liberal Catholic I would have to take exception to being described as an agnostic. The extension of free use to accommodate extensive abuse indicates that there might be something wrong with the regulations. There are different sorts of constituencies: copying doesn't worry me because I have a job, but others live entirely from the pen and they have a desire for more restriction.

Sue Serjeantson. The example of publishing in accountancy shows how things should be done. If the books get expensive, someone else can write and produce a new text.

Peter Spearritt. The web sites allow publishers to monopolise the market. Knowledge is being commercialised. Universities are becoming glorified private schools.

Colin Adam. Academics could talk to their colleagues in business schools. They could construct a deal which would benefit authors and undergraduate students. What strikes me is that many Australian academics are naive in business.

*How much protection is enough? Australia generates 2 per cent of the world's intellectual property and 98 per cent is produced elsewhere. Should we be the pioneers in extending patent protection? Should we pioneer the decompilation of computer software? Should we give 100-year protection to software with a three-year commercial life? The USA came to dominate English-language publishing by plagiarising English rights until they had gained the dominant position in the market. Japan and Germany did not recognise patent rights for chemicals until their local chemical industries developed. Bill Gates started his business with someone else's code and then used the law to knock everyone else into line.*

Colin Adam. CSIRO takes out patents in Australia and the USA. There are differences in the two systems. Australian patent examiners are spread thinly. Some patents are extremely complex. How long can we keep playing this game in Australia? For our influenza compound we had to have US patents. You would be ill advised to rely on one country's protection. An Australian patent only makes sense in mining and minerals, the one industry where we are world class.

*The corporatisation of the patent office means that the patentee is seen as the client. The examiners are being pressured to grant bad patents, and they are put at a disadvantage because the patentee doesn't have to disclose any prior rights.*

*Charles Sturt University claims to own the intellectual property created by its staff; it sells their course materials in Asia. Do academic staff have any moral rights?*

Tony Coady. The university rights are claimed because the university is the employer and provider of facilities. But much material originates in the spare time of staff, or even during work with a former employer. Specific contracts may be needed. It is a moral and legal mess.

*Judging from the intellectual property policies of a number of universities, there is an extraordinary diversity in what universities claim to own. It is a legal matter, not a matter for institutional decision. Even if the university says it owns the intellectual property, it might not assert that claim.*

Henrietta Fourmile

## The indigenous knowledge industry

Three different domains of the indigenous knowledge industry – the arts, the social sciences and the biological sciences – each represent different kinds of consumers of indigenous knowledge and raise different issues of intellectual property.

My framework for dealing with such concepts includes cultural heritage, cultural property and intellectual property. Intellectual property is a subset of what we regard as cultural property, over which we assert our cultural rights. We want to have this ownership recognised in Australian law, whether through native title rights, through a special law, or through the exercise of a number of different laws regarding intellectual property rights, indigenous heritage, natural resources and community governance.

Because of obvious breaches of copyright, the visual arts have been the main battleground for the last 25 years. There have been numerous reviews concerning the misappropriation of Aboriginal art and a number of very successful and well publicised legal actions initiated by the artists or their industry representatives. However, federal governments of both persuasions have preferred to perpetually review the matter rather than legislate to resolve it.

The Copyright Act still offers no protection to works such as rock paintings, which are unattributable to individual artists, or to particular art styles like Western Desert dot painting, and does not control imitations of them which are often imported from overseas. We need to be wary of attempts to introduce *sui generis* legislation to protect our intellectual property, as past experience has taught us that legislation created supposedly to protect our heritage has frequently offered inferior protection to that afforded to mainstream heritage.

Within the general domain of the social sciences there now exists a considerable body of guidelines, codes and principles intended to guide researchers toward the right conduct in their dealings with indigenous communities.

Major concern is now centred on biotechnology, where failure to protect traditional knowledge of native species could cost indigenous communities millions of dollars in lost royalties, commercial rights and product licences. While native title rights, land rights and some natural resource laws may provide some means for the protection of traditional knowledge, biodiversity contracts are increasingly finding favour.

Dale Spender

## From garret to global marketplace



Dale Spender is the Deputy Chair of the Australian Society of Authors (ASA) and a Director of the Copyright Agency Ltd. The author or editor of more than 30 books, she is now creative director of Digital Style, which delivers online professional services to educators.

The Australian Society of Authors is already encouraging its members to think of their work less in terms of freelance writing, and more in terms of running a small business.

Partly because there is a dwindling number of publishers, there are fewer contracts being offered to authors, and their terms represent an erosion of the author's position.

Now that new models of payment for authors are up for renegotiation, there is complete commitment by the ASA to obtain a much better deal for the new content providers. Our mission statement is to maximise the income-generating opportunities for members in the new digital environment.

Because the protection of copyright is not a workable business arrangement in the digital age, the ASA is examining the radical possibility of obtaining a fee for electronic use. This raises several issues. What uses should be covered? What should be zero rated? Licences or fees? How do you know it is the author's own work?

This will be the beginning of an entirely new form of authorship, one which will not necessarily be text, and almost certainly not created by a single author. We are in the process of developing a new aesthetic, new protocols and a very new audience. For those authors who want to make the transition from the garret to the global market, the ASA will be able to serve as a broker, matching Australian authorial content with international users.

Some authors are not keen about online use of their work; they don't want one comma changed. Moral rights may provide some form of integrity protection for them.

There is a lot of groundwork to do. The ASA must be completely 'webified'. Old relationships – with publishers and libraries – need to be reinvented. New relationships need to be forged. And we do not believe that we have to wait for the digital agenda to become law; we suspect we don't need it to set up our own professional businesses.





Mara Bún

## The power of the new media



Mara Bún is Manager, Policy and Public Affairs, for the Australian Consumers Association. Her policy interest is the information society and the impact of new business models on consumers and public goods.

An audio file format, MP3, recently supplanted sex as the most popular term entered into Internet search engines. The recording industry is blaming music downloads for declining sales.

Is MP3 about piracy or is it a new way to create music? This technology allows anyone to put a song on the Internet, by-passing the intermediaries in production and retailing. Small record companies can be like multinationals. Musicians can cut record companies out of their contracts; they see the Internet as the way to make it.

In the new millennium, speed is the new success factor; rapidly shifting consumer preferences demand speed, in research, production, distribution, communication.

Cultural connectedness gives everyone global reach. We don't just have to listen to the big American hits; there is a much greater choice. Information and culture are developing as a pastiche of many different styles of interactions.

How does the old paradigm of copyright fit with the new technology? Jack Valenti, of the Motion Picture Association of America, has said, 'Our future is blighted because we know that unless we can protect what we own, we don't own anything.' He is wrong. Companies have to deliver value, quickly, to have a future.

Peter Fowler, of the US Patent and Trade Office, has stated, 'The vast majority of copyrighted works will eventually be distributed electronically.'

There are powerful national interests at stake. The USA exported copyright worth \$60.2 billion in 1996 – more than cars or agricultural products. From 1987 to 1996 the copyright industries grew twice as fast as the US economy.

Some computer software imprints an identification number on every document created so that the software manufacturer can track copyright. This may help identify legitimate users but it could also infringe people's privacy. What else could this technology be used for?

The power of the new media shifts control back towards the individual users; they can choose the information they want. If consumers have a relationship with the Internet that

is instantaneous, diverse and changing, how do we compensate the creators of information? We need new models of compensation that do not restrain shifting tastes and innovation.

John Zillman

## The availability of scientific information



Dr John Zillman AO is Director of the Commonwealth Bureau of Meteorology. He is Australia's permanent representative on, and President of, the World Meteorological Organization. He is a former Vice-President of the Australian Academy of Technological Sciences and Engineering.

Scientific research and education have always depended on the free flow of information in the research community. International moves towards a new *sui generis* form of legal protection of databases pose important problems for research and education.

Meteorology is the epitome of international cooperative activity. Scientifically sound weather forecasts and warnings rely on real-time data from around the world. Australian data may be sufficient to forecast 6 to 12 hours ahead for south-east Australia but for periods beyond a few days, global data is essential. Meteorology operates on the premise that every country will collect what data it can and make it freely available to every other country. It's a huge international quid pro quo that started over a century ago and continued happily until the mid-1980s.

Privatisation, and the discovery that some data has potential commercial value, has begun to restrict the flow between countries. Between 1985 and 1995 debate raged on how to sustain the free flow of information, while accommodating those with national meteorological services that had to attempt to recoup costs. On the brink of a data war in 1995, everyone took fright at the prospect of buying or independently collecting meteorological information – the world already spends \$6 to \$7 billion per year, including more than \$2 billion for satellites – and agreed to reassert a commitment to free and unrestricted exchange of meteorological data between the 185 member countries of the World Meteorological Organization. This commitment is embodied in its Resolution 40.

In March 1996 the European Parliament and Council, concerned about the ability of database creators to recoup their costs, issued a directive on the legal protection of databases. Many scientists in meteorology, oceanography and

hydrology saw this as a threat to freedom of inquiry, the free flow of scientific information and the use of data gathered by others.

Meanwhile the World Intellectual Property Organization proposed a treaty on database protection, and US authorities proposed a domestic counterpart to the European directive. Tensions rose between those promoting database protection and those concerned to ensure continued access to databases for research and education. The international treaty stalled following objections from scientists in the USA, Australia and elsewhere, coordinated through the International Council for Science.

In Australia, the learned academies, the CSIRO and the Bureau of Meteorology pursued the issue. The Federal Government's Coordinating Committee on Science and Technology has prepared a position statement on the proposed treaty. It argues that access to information in the public domain or generated by publicly funded research should not be impaired by its inclusion in a protected database. The statement does not accept that a treaty is needed. However, it acknowledges concerns about the moves in Europe and the USA, and the fact that some scientists would benefit from database protection.

Virginia Morrison

## Copyright in the online economy



Virginia Morrison is Senior Legal Officer of the Australian Copyright Council.

The balance between the rights of owners and the rights of people who want to make use of copyright material in a way that would be otherwise inconsistent with the owners' rights is currently under scrutiny by all stakeholders in the emerging digital environment.

Copyright is set to form one of the important legal foundations of online distribution of literary, artistic and other creative and scholarly material. The traditional

### Discussion

*Henrietta Fourmile expressed concern about the applicability of any copyright protection regime. Are there any schemes that could meet indigenous people's requirements?*

Mara Bún. I cannot imagine how it would feel to have my cultural identity flogged. One becomes very cynical. The big companies are trawling the world and patenting little bits of life, then selling it back. Public opinion still has some sway: we need to make copyright issues more mainstream.

Henrietta Fourmile. We're still trying to catch up. Indigenous people are trying to get advisers with expertise in various areas. We have to consider the lifestyle we're living. You can't eat technology. It's not food. Dependence on technology has dangers.

*If payments are made to authors over the Internet, will there still be public libraries for people who cannot afford to pay?*

Dale Spender. We need a more equitable distribution of wealth. Libraries of books will be bypassed, though we should have free digital libraries. Fair dealing is for students and research. But we will all be students to keep pace in the workforce. Lifelong learning will redefine study. Authors have to be part of the Internet; then they will get a better deal.

Mara Bún. I think Dale's wrong. We have no idea what will happen. I'm not sure authors will win out. Whoever delivers value will win out. Students and others will demand it.

*It is possible for individuals to make perfect copies of an artefact in infinite numbers for friends or commercial use.*

Mara Bún. The music industry took the manufacturer of MP3 recorders to court. Digital watermarks could limit the number of copies.

*New technology will get around the watermark.*

Dale Spender. Computer companies can already say which software is licensed to which computer. This has privacy implications. But if the technology exists, why can't authors have it?

Mara Bún. Only 5 per cent of the world is online. Libraries will be around for a while yet.

*People respect the law if they feel the law is valid. Young people have no feeling for copyright law. My son will break any system without feeling guilt. How do you bring in laws that people have no respect for?*

Dale Spender. The present copyright laws are not workable. In the audience 55 per cent admitted they were breaking copyright law; how many of the others were lying?

Mara Bún. The Grateful Dead encouraged members of their audiences to bring tape decks. Everyone had bootleg tapes. The band were part of a community, way ahead of the law.

economic and moral rationales for copyright protection hold true in the digital environment. The mode of delivery has changed and business models will change to reflect this, but digital publishers are still trading in the rights comprised in copyright.

How should the fair dealing defences be framed in the context of the online environment? In short, the three-step international standard must be used as a blueprint. This provides that exceptions to exclusive rights must be confined to special cases, that those cases must not conflict with normal exploitation of the work, and that they must not unreasonably prejudice the interests of the rights holder.

My view is that any exceptions ought not be too prescriptive, but need to have a fair degree of flexibility built into them as determination about the viability of markets may need to be made case by case.

An aspect of the Digital Agenda Bill that amounts to an inappropriate response to concerns about access is the provision that effectively allows the circumvention of technological protection measures that copyright owners have put in place. This is of particular concern in the context of use by libraries, as they are not subject to any fairness requirement.

*Annabelle Herd*

## *Maintaining the balance*



*Annabelle Herd is Executive Officer of the Australian Digital Alliance, a coalition of schools, universities, research organisations, libraries, software producers, consumer groups and cultural institutions. She also advises the Australian Libraries Copyright Committee on copyright law.*

Underlying many of the objections to the government's Digital Agenda copyright legislation is the belief that current exceptions to copyright owners' rights are 'loopholes'. We are told that because new communications technologies are able to effectively control access and use of copyright material, we no longer have any need for these exceptions. We are told we must close the loopholes.

I do not believe that this is an accurate account of the policy reasoning that underlies our Copyright Act. The limitations on and exceptions to the exclusive rights of a copyright owner are not and never have been loopholes. In the digital environment, the free copying exceptions are not loopholes.

Copyright is a statutory tool created to promote learning, culture and the free flow of information, knowledge and ideas. It can only do this by the establishment and

maintenance of the best possible regulatory environment for learning and cultural development.

Unlike in Europe, the utilitarian approach to copyright has always applied in Australia. Any suggestion that copyright has a life beyond that given to it by Parliament, that authors have natural rights in the products of their minds, has never had any basis under Australian law. Copyright exists only to the extent that Parliament decrees, and no more.

The preamble to the World Intellectual Property Organization's Copyright Treaty recognises 'the need to maintain a balance between the rights of authors and the larger public interest, particularly education, research and access to information, as reflected in the Berne Convention.'

The consequences of overprotection are serious, with adverse implications for the clever country, competition policy, the trade deficit and social justice.

How is balance achieved? By keeping ideas, facts and raw information in the public domain and only protecting a limited range of rights. Exceptions to copyright protection for fair dealing and library copying are essential to achieving balance.

Is digital different? The World Intellectual Property Organization Copyright Treaty rejects this. It specifically states that current copyright exceptions can be carried forward and new exceptions devised appropriate to the digital environment.

In Australia's digital agenda reforms the controversial provisions concern libraries and fair dealing. The Bill will be good for Australia, without unfairly reducing the rights of copyright owners. The free use exceptions are not just there because they can't be enforced. They are fundamental to achieving copyright's objectives.

*Alex Byrne*

## *Collaborative information centres*



*Alex Byrne is Pro Vice-Chancellor (Information Resources) at the Northern Territory University. He is a former Chief Librarian of the university and former President of the Council of Australian University Librarians.*

In May 1998, the Minister for Education, Employment, Training and Youth Affairs suggested to an OECD meeting that there was a lack of effective collaboration between university libraries and a failure to achieve economies

through collaborative purchasing. The Council of Australian University Librarians responded with a proposal that led to the Janus project.

This project has been initiated in the context of a growing volume of publications, the proliferation of new media and declining library purchasing power. As a result, individual research libraries are able to capture only a rapidly diminishing part of the world's published information.

The Janus project is investigating the proposed development of a network of collaborative information centres. It offers an opportunity to develop and test a sustainable business model for a service to provide research information regardless of format or physical location. The project takes advantage of the enhanced access and delivery capabilities made possible by new communications technology. The technical building blocks exist in call centres, international computer networks and emerging data standards. The goal of the Janus project is to secure more rapid and comprehensive access to publications while gaining a better return on the investment in research libraries.

### *Intellectual property and human rights*

Freedom of expression and access to information are basic human rights. Fair dealing comes out of these rights. All library readers are users of intellectual property. Any extension of restrictions – by the diminution of fair dealing, monopolistic corporate bullying or restrictions imposed by the publishers of journals – will be against the interests of creators and will abrogate the fundamental human rights of freedom of expression and access to information.

## *Discussion*

*What is the legal position of universities regarding the intellectual property of staff?*

Virginia Morrison. I am not up to speed on university policies and agreements, but the copyright position is that an employer will own copyright in material produced by staff where it is created in the course of employment (as part of their duties). There could be some debate on what constitutes 'course of employment'. What are the duties of an academic?

*Prior to the Titanic sinking, radio messages about icebergs didn't get through because rich people were monopolising the microphone for personal conversations. The moral is: if the market decides who has access to what information, you're sunk. Should our copyright laws ensure we have access to information? Or the market?*

Virginia Morrison. To override the rights of copyright owners there should be a demonstrated need. Compulsory licensing is

*Dianne Nicol*

## *Patenting human genes*



*Dianne Nicol is a solicitor and barrister at Dobson Mitchell & Allport in Hobart. Since 1994 she has been involved in research into the legal and ethical implications of human genetic research in Australia.*

Recent advances in biotechnology have provided a major impetus for researchers to transfer their technology to industry. At the same time researchers have to be aware of the commercial interests of others, in particular whether their research infringes any patents and whether they need to negotiate licence agreements.

It is generally agreed at an international level that private ownership of gene sequence data is undesirable because it does not help discovery or exploitation. However, patents for biotechnology inventions are not opposed per se. The argument is not whether to patent but at what level of the discovery–invention continuum.

In my view, anonymous sequences are clearly discoveries whereas diagnostic assays and therapies are more likely to be inventions. Where should the line be drawn between discoveries and inventions? The line is decidedly blurred.

The focus of attention on patenting of gene sequences is directing attention away from some of the other issues concerning the breadth of patent protection being granted.

a compromise; many copyright owners object to this, despite payment being made. Copyright protects the expression of ideas, not the fundamental information.

Annabelle Herd. Libraries are fundamental to ensuring access. Maintaining the library provisions is critical. What is a library? If libraries have to pay, that will eliminate one of the elements that makes the Copyright Act balanced.

*We talk in generalisations; not all works have the same economic value. Many original works have a very short economic shelf life. Libraries are full of works whose life has expired. Some are CD-ROMs and web pages to which access can no longer be gained. Creators walk away from the expense of maintenance. The long-term warehousing of digital information is no less challenging or costly than it is for other works. Fair dealing allows other creators to stand on the shoulders of these dusty giants. I welcome the more open-ended proposal for fair dealing.*

The requirement that a patent specification must fully describe the invention is supposed to prevent rights from being claimed that are broader than warranted by the invention. However, the decision in *Genetics Institute Inc v Kirin Amgen Inc* (No 3) (1998) 156 ALR 30 indicates that broad biotechnology patents may be valid, particularly when the gene sequence is disclosed.

Once a broad patent has been granted for an important product or process, what can a researcher do? Patent law in most countries recognises a research exemption, whereby academic research using patented technology does not infringe the patent-holder's rights. However, if that research is commercial in nature it will infringe the patent. Patentees will frequently require that licence agreements are entered into even if the research is non-commercial, to guard against subsequent commercial use.

Consequently, researchers are not only faced with broad patent claims, but also broad licence and access agreements which may extend beyond the ambit of the patent.

Does the law offer any protection against excessively broad licensing? Such conduct is obviously anti-competitive and would therefore appear to offend modern competition policy. However, it must be realised that patents by their very nature are monopolistic, and therefore anti-competitive. The issue is finding the right balance.

There are a number of ways of guarding against anti-competitive conduct. These include:

- compulsory licensing
- use of the Trade Practices Act
- regulation of licence fees and terms.

Patents are a fact of scientific life, particularly in biotechnology. Researchers have to learn how to deal with them, and lobby Parliament for direction as to licensing.

Ron King

## *Bioprospecting for new pharmaceuticals*

Griffith University has established a major partnership with the Swedish pharmaceutical company, Astra Pharmaceuticals Pty Ltd.

In late 1980s the university planned to establish a bioprospecting facility for possible new drugs. In 1988, the university contacted 25 companies individually participating in the Federal Government's Factor f scheme. In 1993, after a tense final presentation at Sydney airport, the Astra project commenced.

The development of a new drug requires a very large investment. It takes about 13 years and \$500 million to reach the stage of applying for approval in the USA.

Pharmaceutical companies spend about 15 per cent of their sales on research and development. By way of comparison, Australian resource-based industries spend less than 1 per cent.

Successful bioprospecting needs high quality plant material combined with good baseline data about its identity and distribution. The pharmaceutical research institute subcontracts the collection of plants to the Queensland Museum and the Queensland Herbarium, supplementing their income.

As a result of the work the museum has identified 1500 new species of sea sponge; the herbarium has found several new plant species in the rainforests. They have also developed better location mapping and improved knowledge of the Great Barrier Reef.

The project produces extracts from the plant and animal samples and screens them for a wide range of potential pharmaceuticals. The screening uses nuclear magnetic resonance imaging, robotic equipment and powerful computers to manage data and visualise the results. This makes it resource intensive. High-throughput screening has made it much quicker to find candidate compounds and elucidate their structures.

The institute has increased the range of sources of plant samples, screening material from China and India. It ensures that the correct protocols for collection have been followed.

Screening produces intellectual property for the client in the form of drug candidates. The project is funded directly by Astra.

The institute has strict confidentiality agreements with its staff. The protection of intellectual property is paramount.

Astra has several compounds from the research which they are investigating further. They are investing more than they originally planned in the research facilities. This shows how important it is to add value to the client's business in the most cost-effective manner possible.



Dr Ron King is Director of the Office for Research at Griffith University in Queensland. His role encompasses research collaboration with industry and the management and commercialisation of the university's intellectual property.

Anne Trimmer

## Licensing: turning research into income



Anne Trimmer is a partner in the law firm Deacons Graham & James and leader of the firm's national technology group. She has drafted and negotiated many licences for intellectual property.

What accessible and effective options exist for the commercialisation of intellectual property in Australia? We need to look at long-term strategic goals with an emphasis on returning value other than income.

Commercialisation can occur in a number of ways: through a venture capital injection into a startup company to enable it to develop, manufacture and market a product of research; through licensing and technology transfer; or through a strategic partnership or joint venture.

There are also various sources of finance for commercialisation: government funding, corporate licensing, joint venturing, bank loans, private investors, public markets through a float or prospectus, and venture capital.

The selection will turn to some extent on the nature of the relationship of the participants. For example, intellectual property may be licensed to a joint venture where the returns take the form of profit-sharing as opposed to a royalty stream.

A licence is a permission granted by an individual or company (the licensor) to another (the licensee) to use the licensor's technology. Licensing can be a major contributor to economic growth and the enhancement of living standards. It can help offset research and development costs. It can also enhance the speed to market of an innovation and differentiate product offerings.

Investment and risk analysis will often identify licensing as the best or only route to certain markets. This is so particularly where capital investment is not possible or too difficult. Licensing-in can also be an alternative to in-house research and development.

The essential elements of a licence agreement include:

- the parties – the licence must ensure a clear link to the owner of the technology
- the subject matter of the licence – a patent, copyright, a trade mark, knowhow or a combination
- the extent of the licence – the nature of rights, the geographical territory, whether the licence is exclusive, and whether sublicensing is permitted

- the financial arrangements – an upfront licence fee, a royalty payable on production, an annual minimum royalty, or a combination
- the ownership of new developments and improvements – in some cases it may not always be possible to separate the improvements from the core technology.

There is an inherent conflict between two opposing principles. The Trade Practices Act is based on the principle that maximum competition, free from restrictive relationships and with easy access to markets, is to be encouraged, while the intellectual property regimes are based on the principle that competition should be restricted in the interest of promoting innovation and technological development.

Is the licensing of intellectual property rights truly anti-competitive? It does not restrict the exploitation of the rights of the original owner. Licensing in fact effectively disperses intellectual property. With a non-exclusive licence a number of competitors may take a licence to use and improve the intellectual property in competition with each other in the marketplace.

Julian Land

## Intellectual property management



Julian Land is Principal Commercial Advisor at CSIRO Corporate. His responsibilities cover commercial oversight of CSIRO's relationships with the Australian minerals and energy industry.

While intellectual property law is generally and appropriately the province of specialists, the scientist or technologist can usefully learn lessons about intellectual property which can make a difference to many important activities – safeguarding future research opportunities, planning technology transfer or managing relations with commercial partners. I want to illustrate this with examples from my experience at CSIRO.

There is a great deal of confusion about what intellectual property is. Patent rights, for instance, are often accompanied by knowhow packages. This is where the confusion creeps in, because whilst knowhow means something specific to a process licensee, it means other things to the researcher - including knowledge of how to do research.



In the technical community, the problem is that it is not totally obvious where intellectual property rights stop and the researcher's rights start. Our company clients are apt to tell our scientists that they won't settle for less than exclusive rights (or even owning the intellectual property). As they dangle the cheque book in front of cash-starved researchers, quite primitive emotions are evoked.

Very often you will find that the researcher is less concerned about a particular piece of patented art than about their skills – for example, in how to run certain sorts of experiments or about the possible next generation of the technology.

What the researchers need to know is that there is great support in the law for their rights. Unreasonable restraint of trade, beyond those restraints necessary to safeguard the granted rights of a commercial partner, is severely frowned upon.

Everybody knows that patent monopoly rights are obtained for a specific period in a kind of social bargain where the applicant fully discloses how the invention works. It is important to be prudent about what is disclosed in patent specifications. For instance, known methods which are part of the invention do not have to be disclosed in detail.

Intellectual property law is complicated and, in a contract research environment, expert help is vital.

*Cover image: detail from a painting by Malangi used on the one-dollar note. Reproduced with permission from the Reserve Bank.*

*Report edited and designed by Green Words & Images, Canberra.*

## Sponsors

The National Academies Forum and the National Library of Australia thank the following organisations for sponsoring the symposium:

*IP Australia*

*Commonwealth Department of Communications, Information Technology and the Arts*

and for supporting the attendance of speakers:

*Australian Consumers Association*

*Australian Copyright Council*

*Commonwealth Bureau of Meteorology*

*CSIRO*

*Dobson Mitchell & Allport*

*Griffith University*

*Northern Territory University*

*Screenrights*

*University of Melbourne*

*University of Western Australia*

## Discussion

*What will be the impact of the goods and services tax?*

Anne Trimmer: Licensing is the provision of services, therefore there will be a GST component. This will affect agreements in the future and agreements you are already in.

*How do you identify the intellectual property of your staff when you have so many staff working on so many different things?*

Julian Land: You delegate the problem to divisional managers and it is no longer a problem. You have to do quite a bit of networking. You also work out what you want to achieve commercially. Scientists at CSIRO are generally keen to help Australian industry. We run courses, produce manuals and make commercial advice available.

Anne Trimmer: One joint venture has prepared a business plan, which it reviews each year. It also reviews its intellectual property each year.

*Will licensing have to change to take account of Internet activities?*

Anne Trimmer: I don't think so. We do online licensing now. The same sorts of issues arise. The US code used for software can be applied.

*Ownership is often seen as providing opportunities; it also brings responsibilities, such as avoiding locking up technology. Universities are not given the resources to discharge their responsibilities.*

*Other people are doing well out of bush tucker – Aboriginal people are losing certain things. Aboriginal people are isolated from meetings like this; our interests are not considered in intellectual property. We can play a greater role in society, we would like more input from Aboriginal people. Change is coming in technology and information. We don't want to be people running to and fro. The younger generation has as much access to education as other young Australians. The exchange of information is very important to us.*

Mark Armstrong

## Issues and future action



Mark Armstrong is Professor of Communications Law and Director of the Media and Telecommunications Policy Group at RMIT University. He is a former Chair of the ABC.

Intellectual property law is the tool to use after you have decided your creative, intellectual and financial objectives. Then the lawyers can advise you whether the law needs changing.

The different interests need to work out what they want and then the delicate balances can be set within communities of creators, researchers, publishers, universities, libraries; and between these often competing groups. This clearly has not been done.

A lot of work is needed, especially the collection of applied economic data, to balance bald, non-empirical legal arguments. Then we can plot the effect of government policies and speak to the government in its own language.

The threats to indigenous culture will need to be met by specific, tailored laws, not the Band-aid use of existing intellectual property laws. Indigenous culture applies to groups as much as to individuals. In a broader context, the protection of culture includes discussion about the funding of the film industry and requirements for Australian content on television.

Patenting of natural ecology raises distinct, major policy issues. This also requires specific laws, domestically and internationally.

The demise of monolithic publishers (of books, music, film) and broadcasters means that disintermediation is now a business truism. Large publishers are already optional, because they no longer have a distribution monopoly. Computer networks and the post can distribute nearly anything.

For writers, artists and other individual creators, the Internet is just the beginning. New media inescapably return the power to individuals.

The real challenge is technical and financial. Collecting societies and creator groups must quickly use new, efficient payment systems, with better licensing arrangements and the ability to trace creators electronically.

Collecting societies have a vital role but, like the universities, they need to focus on which stakeholders they represent and to place less reliance on blanket copyright 'protection' as the panacea. Restraints on publication may be

needed in a minority of specialised cases where the creators do not want rewards from wider publication.

For researchers in universities and other educational institutions, the issue is not what the law might be, but what terms they can negotiate with their employers in corporate governance, employee relations and individual contracts.

Intellectual property conflicts are increasing, not because of a legal problem, but because many universities are trying to commercialise their outputs (research and training) while maintaining non-commercial inputs (corporate structure, staff rewards and library privileges). If universities want to commercialise, they need a business model where inputs are also costed. If they don't, overseas forces will make it happen within five years.

Can libraries and other public information sources survive outside the commercial system? All creative work depends on access to information yet, over the last 20 years, library resources have been massively reduced. Libraries need to balance the needs of information users (including creators) with the needs of information providers (including creators).

Scientific and industrial research uses patents rather than copyright, which is more relevant to the humanities. Scientific research inputs are large-scale investments: laboratories, equipment and computers costing millions of dollars. Researchers operate in teams, not as individual authors, producing inventions with large, tangible values.

The economic debate is about the extent and beneficiaries of patents. But the real value may be in the non-patentable knowhow and skills of researchers and teams. If they can see better value elsewhere, the law cannot stop them from moving.

Policy questions concern the balance of trade, especially trade with East Asia. Do we follow the tight US line on intellectual property or the looser approach of our neighbours?

There is little argument about whether intellectual property laws are needed. The question is: How much protection or restriction will serve agreed policy?

There is a shortage of empirical, statistical, economic data. Such data could offer real advantage for innovators and creators, more than legal rhetoric about absolute 'rights' or what is 'just'.

Lawyers are good servants but bad masters. They have been taught to 'always act for the money', so the legal input will inevitably favour existing major players. This is dangerous when new forces are producing the greatest revolution since Gutenberg.

Genuine tolerance is needed. We should eschew terms like 'piracy', 'theft' and 'monopoly', and recognise that most parties have legitimate, selfish interests. We should also avoid abstract discussion of intellectual property in isolation, and engage instead in practical policy debates about investment, tax, trade, cultural heritage and education.