

other countries in respect of an invention'. RIRDC states that the costs of applying for the grant of patents or the registration of copyrights, designs or trade marks and any similar rights in respect of all such intellectual property shall be borne by the parties 'in the proportions in which they share the title to and ownership of the Intellectual Property'. The cost of registering and maintaining patents world-wide is an expensive proposition and many universities may balk at the prospect, especially given the limited prospects of success. According to Mr R W Byrom, Legal Officer at The University of Queensland, for each successful product there are ten unsuccessful ones; 100 prototypes discarded; 1000 patents applied for; 10,000 inventions described; and 100,000 ideas floated<sup>1</sup>.

The cost of patenting can be quantified to a degree. Mr Crispin Marsh, patent attorney with F B Rice & Co in Sydney, has stated<sup>6</sup> that it costs around \$1000 to file a provisional patent application in Australia; \$1500 to file a complete specification; \$1000 for examination before the (former) Australian Patent Office; and then there are annual renewal fees, which rise from about \$180 for the third year to \$700 for the sixteenth year. Overseas patent applications are generally more expensive, especially where foreign translations are required. The typical all-up cost of patenting in the United States, including renewals over the patent life, is around \$10,000. In Japan, the cost is about \$16,000 and in Europe (covering all twelve signatories to the European Patent Convention) about \$50,000. As Mr Marsh points out, these are indicative costs only and in individual cases they may be substantially higher.

The capacity of universities to meet these costs is limited. One option is for universities to arrange for the initial costs to be recovered up front when licensing rights to other parties; another option is for the costs of protecting intellectual property to be a first charge against royalty income. But how many inventions produce sufficient income to offset these costs?

### The future

In the long term, universities need to assess, on a case by case basis, the risks and benefits of operating under the restrictive conditions applying to competitive research grants schemes involving industry collaboration. Alternatively, universities might choose to give less

emphasis to -\*research of this nature. A pragmatic approach based on experience, subjective judgement, the size of the research project and the potential risk of non-compliance is required to find a sensible balance between accepting research grants of this nature with little consideration of the implications, and being too concerned with the legal technicalities of some of the conditions. In view of government policy to encourage greater interaction between universities and industry, universities are likely to find that access to external funds will become very limited in some disciplines if they choose not to accept grants from the commercially-based competitive research grants schemes. As research infrastructure funding to universities through Mechanism A is also currently linked to some competitive schemes with commercial objectives, it is even more difficult for universities to ignore the other benefits which flow through the system as a consequence of success in attracting these grants. The university sector is unlikely to extract many more compromises from funding agencies in relation to these issues. It is up to universities to develop the necessary policies and procedures to adapt to this new funding environment.

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# Patents and university research in the United Kingdom

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### Introduction

For many years there was little interaction between patents and university research: the patent system had little impact upon university research and university researchers little desire to patent their inventions. The mutual disregard of the law for university research, and university researchers for the law has over the last decade come to an end. It is the aim of this paper to examine the nature of this changing relationship by focusing upon the main points of interaction between patents and university research in the United Kingdom. These are: first, the attitude within universities towards the ownership and management of patents; second, the question of who has the right to patent inventions which are generated during university research; and third, the impact that the patenting of research will have upon university research itself.

### Part I: University policy on patenting

Attitudes within universities in the United Kingdom towards the ownership and exploitation of inventions created within the university sector are in a state of flux. In order to understand the present approaches towards the patenting of research within universities and how these attitudes are changing, it is necessary to outline the changing environment within which universities operate.

The first important change that occurred over the last decade is that the UK government has pursued a policy of greater public sector accountability. One of the consequences of this was that during the 1980s there was a marked decline in the level of government funding of universities. As a result, universities have been forced to look to alternative sources for their income. In addition to expanding student numbers, universities have also sought to capitalise on the knowledge or, as it is now called, the information that they generate. That is, in order to make up for the short-falls in funding which have arisen, universities have begun to trade in the 'products' that they produce<sup>1</sup>.

As a part of the drive towards increased public sector accountability there has also been an increase in the pressure for university research, as with most aspects of university life, to be rendered more 'useful'. One of the consequences of this is that in evaluating research, there has been a move away from criteria such as the novelty or originality of the research towards an examination of its commercial relevance or, as it was put recently, its 'direct application to real problems faced by society' (Cabinet Office 1992, p.33). In turn, traditional academic criteria such as dissemination of knowledge and freedom of research have been devalued as goals. Combined together with changes in the funding structure, the re-definition of the university as a public institution has led to an increase in demands for research to be placed in a form so that it can best be exploited and traded: one of the most obvious ways this goal could be achieved was through the use of intellectual property protection.

The second major change that has occurred in recent years is in terms of the way inventions created within universities are exploited. In 1981, the British Technology Group (BTG) was set up to ensure the proper exploitation and management of intellectual property rights generated in public sector research. To achieve this end, BTG was given the right of first refusal to the products of government funded

research. The rationale behind the establishment of BTG was the belief that universities lacked the expertise to protect and exploit inventions. In addition, as basic research is often removed from immediate commercial application, it was felt that universities were unable to identify the (potentially) valuable intellectual property which they were generating (Cabinet Office 1992, p.7).

As a part of the general re-definition of the public sector that occurred in the last decade BTG was, in 1985, mandatorily disbanded. As BTG's right of first refusal was taken away from it, universities were given the chance to exploit their own intellectual property rights. Many, but not all, universities have taken up this offer. In order to ensure that their charitable status was not affected, many universities established holding companies to deal with and exploit any intellectual property rights that they owned. In addition, specialist positions were created within the university - the so-called 'Industrial Liaison Officers' - whose job it was to liaise between universities and holding companies, and to advise and educate university staff as to the nature of intellectual property rights (University Directors of Industrial Liaison 1989). Despite the fact that many universities have altered the way they exploit patents, the Office of Science and Technology said recently that only a small number of universities 'appear to have satisfactory mechanisms to exploit their own [intellectual property rights]' (Cabinet Office 1992, p.25).

The third factor which has influenced university attitudes towards patenting is the changes that have occurred within the nature of the research itself. During the post-war period, we have witnessed a remarkable change in the nature of science: most notably we have seen the growth of 'big science' and the scientific corporation. This has meant that science (at least in terms of its agenda and aims) has moved away from the university sector towards the industrial sphere. These moves away from the university have been partially reversed in recent years, however, by changes in the nature of research (or at least the research that is carried out in certain university departments). In particular, there has been an erosion of the distinction drawn between pure and applied research. One of the most important factors which has challenged this dichotomy is that university research has taken on a relevance that it hitherto lacked. This has been most noticeable in the fact that 'pure' research, especially that carried out in fields such as biotechnology, is no longer as far removed from direct commercial application as it once was (Eisenberg 1987).

The fourth and final change that has shaped university attitudes towards the management and ownership of patents is that the subject matter of patent law has expanded. Traditionally certain products or methods of creation, such as agriculture, pharmaceuticals and pure research, were excluded from the subject matter of patent law. Over the last twenty years, however, the subject matter which is said to fall outside the scope of protection has decreased<sup>2</sup>. One of the consequences of the expansion in the scope of patentable subject matter is that there has been an increase in the amount of university research which is *potentially* patentable.

While it is possible to identify changes in the environment within which university decisions about patenting are made, it is not as easy to identify any one clear response to these changes. The reason for this

is that it is impossible to speak of the university sector as a unified or coherent category.

Having said this, it is possible to identify two extremes that exist within the university sector. At one end of the spectrum lies what can be seen as the more traditional approach to the patenting of research. This is the approach adopted in institutions where the main aim of research is the dissemination and production of knowledge and learning (as compared to 'information'); where pure research (defined by its lack of practical and commercial application) and academic freedom are given pride of place over other policy goals. These policies are reflected not only in the organisational structure of the university but also in terms of the way resources are allocated within the university, and in decisions concerning promotion and appointment. In relation to the question of the patenting of research, the attitude of this 'traditional' university is that it would not attempt to exploit the intellectual property rights that it owned and certainly not seek to have academics assign their intellectual property rights to the university. One of the best examples of this traditional approach towards patents and their management can be seen at Cambridge University<sup>3</sup>. Not only does the university not seek ownership of intellectual property rights, there are also no specific provisions in the contract of employment for the transfer of rights from employees to the university.

At the other end of the spectrum is the institution which takes a more proactive approach to the ownership and exploitation of research. Perhaps the best example of institutions which have adopted such an approach are Imperial College and the Universities of Stathclyde and Salford. For example, Imperial College seeks to retain much of the intellectual property which is generated within the college. This applies both to research carried on by university employees, as well as sponsored or collaborative research. In addition, the college now undertakes a systematic and continuous technology audit to ensure that valuable inventions are identified and then exploited, an aggressive approach to liaison with industry (which includes full costing of research overheads), and has established a holding company to provide effective technology transfer from the university (Cabinet Office 1992, pp.21-4).

While it is possible to identify a variety of approaches to the question of the patenting of research in the university sector, it is safe to say that institutions are moving away from the traditional approach to research towards the idea that research is a valuable commodity which, if universities are to continue, must be both protected and exploited. That is, there has been a move away from the Cambridge model towards the type of approach adopted at Imperial College.

## Part II: Ownership of research

While there have been changes in university attitudes towards the ownership and exploitation of research, this does not necessarily mean, from a legal perspective, that it is the university rather than the inventor who has the right to patent inventions that spring from research carried on within the university.

Questions concerning the right to patent inventions arise in two different situations. The first, which is internal to the university, arises where an invention is created by a researcher or academic of the university. Here, the question is whether it is the inventor or the university who has the rights in the invention. The second situation, which concerns the external relations of the university, occurs when an invention is generated during collaborative or sponsored research. The question here is whether it is the university or the external sponsor/collaborator who has the right to patent the invention. Each of these situations will be dealt with in turn.

### (1) The academic as employee.

In order to determine whether it is the inventor (or more often now, the inventors) or the university who has the right to patent an invention, we need to ask two further questions: first, is the inventor an employee of the university? If the answer to this question is no then, *prima facie*, it is the inventor who has the right to patent the

invention. If it turns out, however, that the inventor is an employee of the university, we then move on to the further question: was the invention created in 'the normal course of employment'? If the invention is made during the normal course of employment, then the right to patent the invention belongs to the university and not the employee-inventor.

The status of the employee under patent law in the United Kingdom is clear: anything that is produced in the normal course of employment belongs to the employer. That is, the law treats the worker employed to create or invent in the same way as it treats someone who works on a factory floor. While the law is clear in this regard, its application to the patenting of university research is uncertain. In part, this uncertainty stems from the fact that the specific provisions in the 1977 *Patents Act* which deal with the ownership of inventions were drafted with a different model of employment in mind. While there have been no test cases in this area, it is often assumed that patents created by university workers are owned by the university. As we will see, however, this depends on the status of the inventor and the nature of the invention in question.

#### (i) Is the inventor employed by the University?

The status of the traditional academic is relatively clear: most academics are regarded as university employees. Problems arise, however, in relation to postgraduate students, visiting fellows and the like since the legal status of these 'abnormal' inventors is unclear. Whether or not such an inventor is said to be an employee of the university will depend on a host of factors such as the way the individual is taxed through to whether it is the individual or the university who is able to dictate the nature of the research which is undertaken. In practice, universities are able to avoid this problem by ensuring that these 'abnormal' researchers contractually assign any intellectual property rights that they generate to the university.

If it turns out that an invention has been created by an individual or group of individuals who are not employed by the university then *prima facie* the right to patent the invention belongs to those inventors. Like all property rights, however, it is possible for the patent to be contractually assigned from the inventor to the university. As such, the starting point for any examination of the question of ownership between universities and non-employee inventors must be to ask whether there are any contractual arrangements between them concerning the ownership of intellectual property rights. While the practice is far from universal, it is increasingly common for researchers to assign their intellectual property rights to the university in which they work. This practice has been applied to some non-scientific research and it has been recommended by the Office of Science and Technology that it be adopted as 'best practice' for research students in the natural sciences.

#### (ii) 'Made in the normal course of employment'?

Once it has been determined that an individual is employed by a university, the next question is whether or not the invention has been created in the 'normal course of employment'. If the invention has been created in the normal course of employment then it is the university and not the inventor who has the right to patent the invention. The answer to this question will depend on the particular circumstances of each case.

Given that research is explicitly a part of most academics' job description, and it is one of the criteria by which merit and promotion are judged, there seems to be little doubt that in most situations it is the university and not the academic-inventor who has the right to patent the invention (University Directors of Industrial Liaison(s) 1988, p.14). The situation is less clear, however, where an academic is appointed to research in one field, say pharmaceuticals, and they invent something which relates to another field, such as electrical engineering. Clearly, the closer the fields are together and the more use which is made of university resources (such as secretarial time, laboratory resources), the more likely it will be that it is the university and not the inventor to whom the rights in the invention accrue. Beyond the situation where special duties are ascribed to a researcher or where a specific program of research exists, the position is less

clear. Where the researcher is under a duty to pursue research that can be reasonably expected to generate patentable inventions, it is likely that the university will have the rights to patent the inventions<sup>4</sup>.

At first glance it appears that the employee-inventor is treated in law the same way as other employees. The law's regard for the sacred nature of the intellectual labourer as compared to the manual labourer means, however, that the employee-inventor enjoys certain rights that are not given to manual labourers. The first of these is that the inventor is entitled to be named on the patent as inventor. While this technical right of attribution has no impact upon the ownership of the invention, it does mean that it provides the researcher with symbolic capital. Secondly, and more importantly, the 1977 *Patents Act* provides that if an employee is able to show that the patent which results from their invention has been of 'outstanding benefit to the employer' (ie the university), then - and irrespective of the fact that the creation is owned by the university - the employee is entitled to receive as compensation a 'fair share (having regard to all the circumstances) of the benefit which the employer has derived' (section 41(1))<sup>5</sup>.

While these provisions appear to offer employee-inventors an opportunity to some of the financial benefits that spring from their creations, the provisions in the 1977 *Patents Act* are subject to a number of limitations. First, the right to compensation does not apply where a 'relevant collective agreement provides for the payment for compensation in respect of employees inventions' (section 40(3)). Many such schemes have been established in UK universities which provide for alternative methods of compensation. Secondly, as the 'outstanding benefit' must result from the patent and not the invention, inventors may have problems in establishing the necessary connection between their invention and the patent. Thirdly, the courts have held that whether a patent is of an 'outstanding benefit to the employer' is to be determined in relation to the overall business of the employer. For example, a court recently declared that an employee's invention which provided £5 million benefit to the employer was not 'of outstanding benefit to the employer'. The reason for this was that as the employer had a turnover of £5 billion and a pre-tax profit of £593 million, the benefit derived from the employee's invention 'only' amounted to 0.01 % of the turnover and 0.085 % of the pre-tax profit (*GEC Avionics Ltd's Patent*, 1992)<sup>6</sup>. As such, whether or not an employee-inventor is entitled to compensation will depend on the size of the university (as well as factors such as how much the employee is paid and the relative contributions of the employer and employee in the creation of the invention). One factor that may create difficulties is that the criteria used to determine 'benefit', that is the profit and turnover of the employer, are not as easily calculated in universities as they are in commercial organisations subject to financial audit and different accounting procedures<sup>7</sup>.

### (2) The patenting of collaborative or sponsored research

One of the most important and contentious questions in relation to university research concerns the ownership of patents in sponsored or collaborative research with industry.

Initial calls for the introduction of a standard formula to determine how arrangements between universities and the private sector should be organised were rejected. Instead, the Government's policy was that the parties should be able to negotiate freely in relation to matters of ownership, licensing, exploitation and distribution of licences and royalty income (Cooper 1989; Cabinet Office 1992, p.10 & 35-40). This (limited) free market approach has, unsurprisingly, led to very different experiences within the university sector. At one extreme there are the stories which circulate of the helpless (naïve) researcher trading valuable intellectual property rights for small research grants. At the other extreme there is the aggressive approach of Imperial College which has been accused by certain sectors of industry 'of trying to drive too hard a bargain' who, as a consequence, 'threatened to withdraw all research support' (Cabinet Office 1992, p.23).

Despite these variations, it is possible to identify a trend that has developed in this area over the last few years. Until recently, nearly all intellectual property rights that arose from collaborative or spon-

sored research were assigned to the industrial partner concerned. The reasoning behind this was that universities were said not to be in a position properly to exploit their intellectual property rights, that they did not have the expertise needed for the strategic nature of patenting, and the fear that involvement with intellectual property rights would open universities up to expensive and time consuming litigation.

With the success of a number of American universities acting as role models (Porter n.d., p.1) the demise of the romantic idea of the researcher as an inventive genius incapable of making commercial or practical decisions, the recognition of the use of intellectual property litigation insurance, and the expertise provided by industrial liaison officers, universities have adopted a more proactive approach towards the ownership and exploitation of patents that spring from collaborative or sponsored research. The fact that universities have adopted a more positive approach in negotiations over the exploitation of patents does not necessarily mean, however, that they necessarily retain them. Since the issue of ownership of patents is to be negotiated by the parties in each particular case, the nature of the arrangements between universities and industrial groups will depend on the outcome of particular negotiations which, in turn, are shaped by factors such as the financial position of the university, the level of funding provided by the industrial partner, the nature of the invention and its market, as well as the number of partners involved. As universities gain expertise and knowledge in the management and exploitation of patents and related rights, we can expect to see more universities retaining intellectual property rights from their research.

The proactive approach of universities also extends to situations where patents are assigned to industrial partners. This can be seen in the growing use of 'due diligence' clauses; that is, specific provisions inserted in the contract of assignment to ensure that the patent is exploited in a manner acceptable to the university. Another example of the new proactive approach is the practice of universities to charge for the overhead costs of carrying out collaborative research (rather than this being subsidised from departmental funds).

While the arrangements between universities and industrial sponsors vary from case to case at present, it is likely that as practices develop that these relationships will be standardised. This process of standardisation can already be seen at work in relation to university research which is carried out under the European Community (EC) collaborative programs. In such circumstances, it is usual practice for the EC Model Contract to be used (Directorate General XII, 1988). This requires that patents and other intellectual property rights which arise from the research are to remain with the organisation that generates the invention (ie the university). In such circumstances 'the collaborating companies receive a free non-exclusive licence to exploit the foreground [intellectual property rights] and to have access to essential background intellectual property rights (owned by a partner before a program started) on fair and reasonable terms. A royalty is payable to non-industrial partners for use of the foreground [intellectual property rights]' (Directorate General XII, 1988). While this contract is primarily used in EC collaborative ventures, if, as has been suggested, Industrial Liaison Officers adopt it as the basis for their negotiations with industry, it will form an important model for the future.

## Part III: Academics as researchers

In order to create a better environment within which to protect, manage and exploit inventions, there have been frequent calls for changes to be made in university research practices. While many of these changes merely involve the education and training of scientists as to the nature of intellectual property rights, other changes are less innocuous. The changes which have been suggested to improve the calculability of research and render it more accountable can be seen as a new form of social control. In turn, the models developed in the natural sciences are increasingly being applied, inappropriately, to the social sciences<sup>8</sup>. Another change which has already attracted criticisms is the fact the criteria taken into account for promotion and allocation of research grants concentrate less on the 'quality' of the

research and focus more upon the royalties and licence fees that the research brings to the department.

One of the fears that has been raised about the patenting of research is that it may clash with the academic tradition of open publication and dissemination of knowledge. Such an argument was recently considered, and dismissed, by the Office of Science and Technology who said that the 'perception that the proprietary nature of intellectual property may restrict academic traditions of open exchange of research information, and that research carried out using public funds should be freely available to benefit society as a whole' ... is ... 'generally false' (Cabinet Office 1992, p. 7-8). As we will see, this is only partially accurate.

Potential restrictions upon research arise in two different ways. The first is that for an invention to be patentable, the invention must be 'new'. What this means for practical purposes is that the invention cannot be disclosed in any form anywhere in the world before a patent application is lodged at the relevant patent offices. In a recent study on intellectual property in public sector research laboratories, the risk 'of losing innovations through prior disclosure' was seen as one of the most important issues that needed to be dealt with (Cabinet Office 1992, p.15.). One method suggested to resolve this problem is the introduction of technology audits to ensure early identification of inventions. The second main restriction upon university research arises from the fact that in collaborative and sponsored research the industrial sponsor may, to ensure a competitive advantage, wish to place restrictions upon the publication of research results. In addition to placing contractual limits upon the researcher, it has also been suggested that the managerial arrangements of the release of information within laboratories be altered.

Such prohibitions on the dissemination of research-information inevitably give rise to the argument that patent law promotes and requires a form of censorship. Such an argument is, at least in relation to patents, unfounded. The first reason for this is that it is not in industry's general interest to stifle research within the university sector. Indeed, there seems to be partial recognition within certain industrial groups that the domination of academic research by specific (applied) issues may ultimately be detrimental to their own interests. The reason for this is that industry not only utilises many of the developments of pure research, but also relies upon universities for a supply of well qualified staff. The second reason for doubting the argument that patenting will censor university research is that one of the aims and functions of patent law is to provide for the dissemination of technical information: indeed there are specific provisions in the 1977 *Patents Act* which are designed to ensure that the relevant information is published.

To suggest, as the Office of Science and Technology did, that patenting will have no impact upon university research is to ignore the fact that the patenting of information will have an impact upon the research culture within universities. In addition to changes in the way research is managed, we can also expect to see that the place where academics first read or disclose information will move from traditional sites such as journals and conferences to the patent specification. There should be no reason, however, why this information should not after publication of the patent, also be disclosed using traditional methods. Another change that the patenting of research gives rise to is that the *form* that this information takes will change. The reason for this is that information takes on a different shape when embodied in a patent than when it is written up as a research paper. This is because patent claims are written for different audiences with different aims in mind: the aim of a patent is not to present a thesis or argue a particular case, but to set out and demarcate a property claim.

More important, however, is the fact that in practice patents cannot be treated in isolation from other intellectual property rights: rights which on the whole do not require disclosure of information in the way that a patent does. Often, a patent will only disclose part of the information which is necessary to produce or manufacture the invention. While the remaining information is not protected if independently created or if it falls into the public domain, the non-disclosure of know-how does mean that the particular company is able to gain a strategic advantage over their competitors. The problem that arises for the academic researcher who is working in collaboration with industry is that it may be a condition of the research grant in the first place that the information that is generated from

the liaison is not made available to the public. Thus, while the patenting of research does not create problems of access to information (although there are related problems), the lack of similar disclosure requirements for trade secrecy, confidential information and works protected by copyright<sup>9</sup> will create problems for academic researchers if they, or their employees, do not have the bargaining power to negotiate otherwise.

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### Notes

- 1 As the notepaper at the LSE proudly proclaims, the LSE was given the Queens Award for Export (of knowledge) in 1991.
- 2 One possible exception to this is in relation to the patenting of genetically manipulated animals.
- 3 While Cambridge University has an explicit policy that the University should not hold patents; there is requirement in relation to Research Council grants that individuals should approach the university's Wolfson Cambridge Industrial unit as to the possibility of exploitation. The unit then takes over the role of assuring that inventions are exploited. As an incentive to exploitation (and not through a belief in fairness), the University divides the royalties from the patent in the following way:

Net Income	Inventor %	Department %	University %
First £ 10,000	90	5	5
£10 - £ 30,000	70	15	15
£30 - £ 50,000	50	25	25
Over £ 50,000	33.3	33.3	33.3

Source: Cambridge University Reporter 1987 p.441.
- 4 It could be argued, following *Noah v Shuba* (1991) that the university has acquiesced and assigned patent rights back to the inventor. This will depend, however, on whether it has been usual practice for the university to allow academics to exploit their own inventions (as it was with the copyright in *Noah v Shuba*).
- 5 Section 41(3) of the 1977 *Patents Act* deals with the situation where a Research Council assigns the patent rights resulting from public research to an organisation for exploitation for little or no consideration. Any 'benefit' derived from that invention is deemed to be derived by the Crown or the Research Council.
- 6 See also *British Steel plc's Patent* (1992).
- 7 This situation may be different if the government changes university accounting procedures from a cash to an accruals basis as it is doing in many other areas of the public sector.
- 8 For example, in the latest round of the University Funding Committee, academics within the social sciences were asked how many patents and copyrights (sic) they had produced over the previous three years.
- 9 As computer programs are now expressly included within the scope of copyright protection, copyright will take on a more important role in university research. See section 3(1), 1988 *Copyright, Designs and Patents Act*.

# Universities, intellectual property and litigation: A view from the sideline

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### Introduction

The view from the sideline is different to that from the locker room and committee rooms. It is even further removed from the view which the players have in the game. The lawyer's perspective is akin to seeing the rules of the game and the decisions of the umpire while missing the passages of play which make up the game itself. It would be little wonder if the players ignored any comments from such a spectator. Heedless of such misgivings, it is proposed to follow the sporting spectators' tradition of giving a view no matter how uninformed or unqualified.

Intellectual property embraces a complex bundle of rights stated and protected by statutory law, common law and international conventions. It is also an area of law which is inextricably woven into the fabric of university activity. At first sight it could be expected that lawyers would rub their hands in anticipation of lucrative legal disputation. On the other hand, university advisers could be expected to wring their hands in anguish fearing the dire consequences which could reasonably be expected to ensue if their advice or procedures based on such advice are ignored or neglected.

In fact, the area has provided neither the fertile field for lawyers as might be expected nor such disastrous consequences as might be feared. Although the educational use of copyright has been the subject of much negotiation accompanied by threat of legal action, in general legal action is exceptional. In other words the umpire is not seen or the whistle heard as much as might be expected. Nonetheless, in an area of activity which has legal implications, it makes good sense to explain applicable statutory law and to warn of the consequences which might arise as well as explaining the law as it develops in court decisions. Such advice is necessarily geared to litigation as the ultimate means of resolving disputes.

### The lack of litigation

Why has there not been the level of litigation or legal disputation which might be expected in the area of intellectual property in universities? It would be comforting to answer that there has been such a degree of awareness and compliance with legal requirements that disputation has not arisen, obviating the need to resort to legal remedies. To return to the analogy of the game, it may be that the players have so thorough knowledge of the rules and are such good sports that they never infringe.

It may be close to the case in respect of educational use of copyright. Much has been done to raise awareness and introduce rules which enable the game to flow through collection agencies and institutional licences. In the area of patents the use of patent committees, usually with external expertise as well as the personal knowledge of players involved, may well explain the absence of litigation in that area. It may also be the case in other areas. However, it would be going too far to say that this is the complete answer. For a start, litigation or threat of litigation has played an integral part in raising awareness and providing impetus for dealing with educational use of copyright.

Indeed it may be that the contrary is the case. That is, lack of awareness of legal requirements as well as of rights protected together with, probably more importantly, lack of financial ability and will to take legal action have considerably restricted disputation at law. The

analogy of the sporting game breaks down at this point. The umpire in the area of intellectual property is not on the playing field but has to be approached for a ruling through lawyers who charge fees and via set and time consuming procedures.

Lack of litigation is not unique to intellectual property in universities. In commerce infringement of intellectual property rights does not always result in redress by legal action. To illustrate, false use of a trade mark on items sold in a Sunday market may go undetected or be of such insignificance that, although causing anger, it does not justify the costs of legal action. However, when infringement of a level which harms business reputation or sales is detected there is sufficient incentive to take legal action as has been well demonstrated.

Important elements in explaining lack of litigation are detection of infringement, awareness of rights, and the ability and incentive to protect or exert those rights.

Detection is always problematical. Universities are places where activities can proceed in remarkable isolation. This may result in either undetected infringement or a failure to take steps to protect rights. In the former case there will be no litigation as the person whose rights are infringed is ignorant of the fact. In the latter case there may be no litigation as rights have been lost. While this may help explain a low level of litigation, it should not give rise to a false sense of security.

Detection may come from a person associated with the activity, for example, by presentation or publication of a paper, particularly where there is a lack of awareness of infringement. There is also the possibility of investigation where infringement is suspected. The skills of investigation ought never be underestimated. It is not uncommon in a court case for one side to be left wondering how the other side got the information.

It should also be said that the legal procedure known as an *Anton Pillar* order which allows for entry and inspection has greatly assisted those seeking to fully detect infringement and protection of their rights. In short, if lack of detection is a reason for lack of litigation, it can hardly be relied upon in all situations to support disregard or neglect of the rights in question.

Lack of awareness of rights involves both personal rights and rights of others. The former category is concerned with ensuring that rights are protected while the latter is concerned with avoiding infringements. It is impossible to state with any certainty that lack of awareness of rights in intellectual property is a factor in there being a low level of litigation in the area. However, it cannot be discounted. This is not to say that it would be better not to raise awareness in the hope that ignorance will reduce the chance of litigation. The fact is that awareness of intellectual property rights is likely to be raised in any event and there are obvious advantages in ensuring that it occurs at an institutional level.

Lack of financial resources is probably a more relevant factor. Legal action is costly and takes up a lot of time. Litigation is probably beyond the financial resources of most academic staff and certainly beyond most students. Universities may have the resources but there is a general, and mostly prudent, reluctance to use valuable resources in this way.

Persons or bodies external to the university may have the resources