

The Legal Protection of Databases

Mark J. Davison

Monash University



PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE
The Pitt Building, Trumpington Street, Cambridge CB2 1RP, United Kingdom

CAMBRIDGE UNIVERSITY PRESS

The Edinburgh Building, Cambridge, CB2 2RU, UK
40 West 20th Street, New York, NY 10011-4211, USA
477 Williamstown Road, Port Melbourne, VIC 3207, Australia
Ruiz de Alarcón 13, 28014 Madrid, Spain
Dock House, The Waterfront, Cape Town 8001, South Africa
<http://www.cambridge.org>

© Mark J. Davison 2003

This book is in copyright. Subject to statutory exception
and to the provisions of relevant collective licensing agreements,
no reproduction of any part may take place without
the written permission of Cambridge University Press.

First published 2003

Printed in the United Kingdom at the University Press, Cambridge

Typeface Plantin 10/12 pt *System* L^AT_EX 2_ε [TB]

A catalogue record for this book is available from the British Library

ISBN 0 521 80257 1 hardback

Contents

<i>Foreword by William R. Cornish</i>	<i>page xv</i>
<i>Acknowledgments</i>	xvi
<i>Table of cases</i>	xvii
<i>Table of legislation</i>	xxiii
<i>Table of European Union legislation</i>	xxxiv
<i>Table of treaties, conventions, other international and regional instruments</i>	xxxviii
1 Introduction	1
Why have databases become an important issue	2
The structure of this book	3
2 Some basic principles	10
Basic copyright principles concerning databases	11
Compilations and collections	11
Originality	13
The ‘sweat of the brow’ approach	14
An intellectual creation	15
European standards of originality	16
The spectrum of originality	17
Originality as it applies to compilations and databases	17
Authorship	21
Some technical aspects of database creation	22
Infringement	24
A substantial part of a work: qualitative rather than quantitative tests	25
Rights that are infringed	28
Right of reproduction	29
Right of rental	31
Right of distribution	31
Right of communication to the public	31
Protection against circumvention of technological protection devices	32
Exceptions to copyright	32
Compulsory licensing	34
Summary of copyright	36

Principles of unfair competition	37
Contract law and databases	40
Competition law	43
The paradigm does not fit	43
The legal model for protection may generate the possibility of legitimate market power being created	46
The logistics of government regulation	47
Government policy towards competition law	48
Aspects of distributive justice	48
3 Protection of databases in the EU	50
History of the Directive	51
The Green Paper	52
The First Draft	53
Justification for a Directive	54
Definition of a database	54
Copyright in a database	54
Relationship to copyright in computer programs	55
Exceptions to copyright	55
Relationship between copyright and contract law	56
The <i>sui generis</i> right	57
Compulsory licensing	57
Exceptions to the <i>sui generis</i> right	58
Term of protection	59
Protection for databases outside the EU	59
Retrospectivity	59
Preservation of other legal provisions	59
Summary of the First Draft	60
Opinion of the Economic and Social Committee of the Council	60
Definition of a database	62
Protection for databases outside the EU	63
Duration of protection	63
Authorship of databases and circumvention of technological protection of databases	64
Summary of the Committee's Opinion	64
Amendments to the Directive by the European Parliament	65
Definition of a database	66
The <i>sui generis</i> right	66
Compulsory licensing	66
Exceptions to the <i>sui generis</i> right	67
The duration of protection	67
Summary of the 1993 Amendments	67
The common position of 10 July 1995	68
The final version of the Directive	68
The recitals	69
The need for uniform laws	69
Explanation of the substantive provisions of the Directive	70
Scope of the Directive and the definition of a database	70
Computer programs	74
Copyright in databases	75

Contents	ix
Authors of databases	76
Restricted acts	76
Exceptions to copyright in databases	77
The <i>sui generis</i> right	81
The maker of a database	82
A qualitatively or quantitatively substantial investment in obtaining, verifying or presenting	83
Right to prevent extraction and/or re-utilisation	87
Infringement of the right of extraction and re-utilisation	89
Exceptions to the <i>sui generis</i> right	91
Duration of the <i>sui generis</i> right	92
Retrospectivity	93
Territorial qualification for protection	97
Compulsory licensing and competition law	97
Saving of existing legal regimes	98
Final provisions	98
Summary of the Directive	99
Circumvention of protection measures	100
4 Transposition of the Directive	103
Belgium	109
Copyright before and after transposition	109
Unfair competition laws	111
<i>Sui generis</i> protection	111
Right to extract or re-utilise an insubstantial part	112
Exceptions	113
Term of protection	113
France	113
Copyright before and after transposition	113
Unfair competition law	115
<i>Sui generis</i> protection	116
Right to extract or re-utilise an insubstantial part	117
Exceptions	117
Term of protection	118
Germany	118
Copyright before and after transposition	118
Unfair competition laws	123
<i>Sui generis</i> protection	124
Right to extract or re-utilise an insubstantial part	125
Exceptions	126
Term of protection	126
Ireland	126
Copyright protection before and after transposition	126
Unfair competition laws	127
<i>Sui generis</i> protection	128
The right to extract or re-utilise an insubstantial part	128
Exceptions	128
Term of protection	128
Licensing schemes	128
Technological protection measures	129

Italy	129
Copyright before and after transposition	129
Unfair competition laws	131
<i>Sui generis</i> protection	132
The right to extract or re-utilise an insubstantial part	133
Exceptions	133
The Netherlands	133
Copyright before and after transposition of databases prior to the Directive	133
Unfair competition laws	134
<i>Sui generis</i> protection	135
The right to extract or re-utilise an insubstantial part	136
Exceptions	137
Term of protection	137
Spain	138
Copyright before and after transposition	138
Unfair competition laws	139
<i>Sui generis</i> protection	140
The right to extract or re-utilise an insubstantial part	140
Exceptions	140
Term of protection	140
Sweden	141
Copyright before and after transposition	141
Unfair competition laws	142
<i>Sui generis</i> protection	142
United Kingdom	143
Copyright before and after transposition	143
Unfair competition laws	146
<i>Sui generis</i> protection	147
Right to extract or re-utilise an insubstantial part	151
Exceptions	151
Term of protection	151
Licensing schemes	152
Summary of the transposition of the Directive	152
Harmonisation of copyright	152
The investment necessary to qualify for <i>sui generis</i> protection	153
Nature of the right and the test of infringement	155
Definition of a lawful user	156
Lack of harmonisation of the exceptions	156
The period of protection	156
Relationship to unfair competition laws	157
Single source databases	157
Conclusion	158
5 Protection of databases in the United States of America	160
Copyright	162
Some decisions since <i>Feist</i>	162
Circumvention of technological measures	164
The fair use defence	167
Summary of the copyright position	170

Nature and history of the American tort of misappropriation	171
<i>International News Service v. Associated Press</i>	172
Subject matter of protection	173
Protection against whom	174
Nature of the protection	174
The dissenting judgment in <i>International News Service v. Associated Press</i>	175
Summary of the position in <i>International News Service v. Associated Press</i>	176
The chequered history of the decision in <i>International News Service v. Associated Press</i>	178
Limitations on the scope of the tort of misappropriation	179
Pre-emption by the Federal Constitution and intellectual property legislation	180
Direct competition between the parties	183
Time-sensitivity	185
Reducing the plaintiff's incentive	187
Summary of American unfair competition law	189
Legislative proposals for <i>sui generis</i> protection	190
The Database Investment and Intellectual Property Antipiracy Bill of 1996	190
Definition of a database	191
The <i>sui generis</i> right	191
Comparisons with misappropriation	192
Comparisons with the Directive	192
The Collections of Information Antipiracy Bill 1997	193
Definition of a Database	194
Prerequisite for <i>sui generis</i> protection	194
Nature of the <i>sui generis</i> right	195
Potential market	195
Circumvention of database protection systems and protection of database management information	197
Permitted acts	197
Exclusions	198
Preservation of contract law and other legal regimes	199
Pre-emption of state law	199
Comparisons with the Directive	199
Comparisons with misappropriation	200
The Collections of Information Antipiracy Bill of 1999	200
Definition of a collection of information	201
Material harm	201
The market protected	202
A substantial part	203
Fair use	204
Reasonable uses for educational, scientific or research purposes	205
Other reasonable uses	206
Special provisions for securities and commodities market information and digital on-line communications	207
Special provisions regarding genealogical information	207
Investigative, protective or intelligence activities	207

Computer programs and digital on-line communications	208
Government collections of information	208
Duration of protection	209
Retrospectivity	211
Remedies	211
Study and report	211
Comparisons with the Directive	211
Comparisons with misappropriation	212
The Consumer and Investor Access to Information Bill of 1999	213
Summary of the American position	213
6 International aspects of protection of databases	217
International agreements concerning copyright protection of databases	218
National treatment, most favoured nation status and the Directive	221
Public international obligations and the American legislation	226
Steps towards a WIPO Treaty on the Protection of Databases	226
The Draft Treaty	227
Further moves towards a database treaty by WIPO	228
WIPO information meeting on intellectual property in databases, Geneva, 17–19 September 1997	229
Observations by WMO and UNESCO	229
Outcome of the information meeting	230
Summary of moves to adopt a database treaty	231
EU and bilateral arrangements	234
Conclusion	235
7 The appropriate model for the legal protection of databases	237
The argument in favour of <i>sui generis</i> protection	239
Economic theory	241
Price discrimination	242
The costs of intellectual property rights	244
Rent seeking	245
Loss of public good benefits	247
Transaction costs	254
Enforcement costs	257
Limiting the costs of property rights	257
Summary of economic theory	258
Anecdotal and empirical evidence	259
Evidence of the Directive's impact	263
Non-economic roles of information	264
Limits of the tragedy of the commons	266
Examples of scientific cooperation	269
The Health WIZ project	269
World Meteorological Organization (WMO)	271
Some suggestions for protection of databases	272
Defining the subject matter of protection narrowly so as to avoid unnecessary and unintended consequences	273

Separation of the subject matter of <i>sui generis</i> protection for sweat of the brow from copyright protection	274
Differentiation of <i>sui generis</i> rights from copyright	275
Exceptions to copyright to permit use of underlying information	276
Exceptions to prohibitions on circumvention protection devices	277
An equivalent to the fair use defence	277
Relationship with contract law and compulsory licences	278
Modification of competition law principles	280
Duration of the period of protection	280
Remedies	281
Excise some areas of scientific cooperation from any treaty or legislation	282
Government information	282
Conclusion	283
Addendum	285
Canadian approach to originality	285
Reports to WIPO on the impact of database protection on developing countries	286
<i>Glossary</i>	288
<i>Bibliography</i>	290
<i>Index</i>	296

1 Introduction

We live in the Age of Information. Information is money. So is time. The economies of the First World are dominated by the creation, manipulation and use of information and the time it takes to do so. These economies do not suffer from a shortage of information; they suffer from the difficulties associated with collecting, organising, accessing, maintaining and presenting it. Databases are designed to help deal with these difficulties. They are collections of information arranged in such a way that one or more items of information within them may be retrieved by any person with access to the collection containing those items.¹ Therefore, databases are big business because they contain important and copious amounts of information and they reduce the time taken to access that information.² And where there is big business, the law and lawyers inevitably follow.

But information is more than money and databases are more than big business. Information and databases are critical to science, the legal system itself, education and all those aspects of life that are improved by them. Consequently, there are important issues of social and political policy to be considered in the regulation of access to, and use of, databases. Again, where there are such critical issues at stake, the law has a role to play.

There is an inevitable tension between the commercial and the socio-political role of databases that leads to complexities in developing an appropriate model for their legal protection. In fact, given the diverse range of areas in which databases can be used, any one of a variety of legal models may be appropriate in any given context. One of the criticisms of general references to the importance of information is that they fail

¹ This is a very rough working definition of a database. The various issues concerning the definition of a database are discussed in later chapters, especially Chapters 3 and 4.

² 'In 1989, the world-wide turnover for online database and real time information services accounted for around 8.5 billion ECU.' In 1996, the estimated size of the European Market electronic information supply market was £5.138 billion. A Consultative Paper on United Kingdom Implementation: Directive 96/9/EC of 11 March 1996 on the legal protection of databases copyright directorate, The Patent Office, DTI, August, 1997 at para. 2.1.5 and Annex 2.

to differentiate between different categories of information.³ The same criticism could be levelled at any legal system that applied a 'one size fits all' approach to the regulation of databases. It is no surprise then that a number of different legal models for protection of, and access to, data and databases have arisen.

Why have databases become an important issue

The transition of many First World economies from industrially based economies to information-based economies is a relatively recent phenomenon. It is a consequence of an explosion in information and the means by which it can be disseminated that results in turn from far-reaching technological and scientific developments.⁴ In particular, advances in digital technology have facilitated the creation of databases. Large amounts of data can be created in, or converted into, digital form, and scanners and other devices permit the digital conversion of data. Alternatively, data can be originally produced and stored in digital forms that are perceived by humans as text, pictures, tables, spreadsheets and other easily recognisable formats. The digitisation of data in turn reduces storage costs. For example, if the DNA structure of the human genome were compiled in hardcopy it would occupy 200,000 pages.⁵ The physical storage of such documentation in digital form can be achieved with a few CDs.

This expanded capacity to store data is complemented by an increased capacity to access and use it. It is facilitated by computer programs that enable quick and reliable searching and retrieval of data. Computer networks also allow on-line use of databases, thus increasing ease of access and marketability. These increased abilities to store and disseminate information, in turn, have increased the production of information. This is due to the relationship between the production of information and the availability of existing information. Existing information and access to it are critical to the creation of new data and information.⁶ This creative process is like a spiral in which the users of existing data actually add

³ See Chapter 6 for a discussion of this point.

⁴ 'It has been estimated that the volume of the increase annually in information generated today equals the total information in circulation in the world fifty years ago.' Explanatory Memorandum to the Proposal for a Council Directive on the legal protection of databases COM(92) 24 final – SYN 393, Brussels, 13 May 1992.

⁵ Human Genome Project Information at <http://www.ornl.gov/hgmis/publicat/primer/fig14.html>.

⁶ At this point, the terms 'data' and 'information' are being used interchangeably. Possible distinctions between the two and the relevance of those distinctions are discussed in Chapter 6.

value to that data in the process of using it, thus generating more new data and information.

The pressure to provide specific legislative protection for databases has arisen from the increase in the mass of raw data available in almost every area of commerce and science, the increased technological ability to create databases containing those data and to provide easy access to them. These are coupled with the increased technological ability of others to reproduce those databases and a perceived lack of adequate protection from existing legal regimes, such as copyright. The same technology that has expanded the role and usefulness of databases permits quick and easy reproduction of those databases or large parts of the data contained within them. 'Robots' and other computer technology can be used to download data from databases with little effort or human intervention. This reproduction can take place anywhere on the planet, provided the person arranging for the reproduction has access to the necessary computer infrastructure. Consequently, database owners have claimed that they require additional legislative protection to protect their investment in the creation and marketing of databases from free-riders who can quickly and easily reproduce the databases created and maintained by them.

The structure of this book

This book examines various models of legal protection for databases. A brief explanation of those models is given at the beginning of Chapter 2, where the various basic legal principles relevant to nearly all jurisdictions are covered. In particular, Chapter 2 deals with some basic principles of copyright, unfair competition law, contract and competition or anti-trust law as they apply to databases. These principles are referred to throughout the book.

Chapter 3 examines the European Union (EU) Directive on the Legal Protection of Databases 1996 (the Directive),⁷ including both the copyright protection and the *sui generis* protection that has been conferred by the Directive. This examination includes the history of the Directive, the justifications provided for it and its important features. In addition, Chapter 3 examines the impact on database protection of the provisions of the EU Copyright Directive on the harmonisation of certain aspects of copyright and related rights in the information Society 2001 (the Copyright Directive).⁸ The provisions of the Copyright Directive

⁷ Directive 96/9/EC of 11 March 1996 on the Legal Protection of Databases, OJ No. L77, 27 March 1996, pp. 20–8.

⁸ Directive 2001/29/EC, OJ No. L167, 22 June 2001, pp. 10–19.

concerning the circumvention of effective technological measures that are designed to protect copyright material also apply to the *sui generis* right conferred by the Directive. Consequently, those provisions are an important aspect of the protection provided for databases.

The examination in Chapter 3 of the history of the Directive reveals that the initial EU moves for *sui generis* protection proposed a very limited protection clearly separated from the copyright protection of databases. However, Chapter 3 also shows that the final form of *sui generis* protection under the Directive is, in fact, a hybrid of the generous scope of protection under former UK copyright law and the restrictive exceptions provided in the copyright law of many continental countries. The latter are probably quite justified in a copyright scheme that requires high levels of originality before conferring any copyright protection at all. However, they are inadequate in a legislative scheme that confers protection on unoriginal databases. The effect of this hybrid approach has been to confer an extraordinary degree of *sui generis* protection. The argument is also made that the *sui generis* protection provided by the Directive is inappropriately and inextricably entwined with copyright law and that, in a number of technical respects, the Directive is worded in such a way that it provides protection, even beyond its intended scope. An example of this latter point is the broad definition of a database.

Chapter 4 examines the legislation transposing the Directive in a number of the Member States and some of the emerging case law relating to that legislation. This examination further illuminates some of the ambiguities in the wording of the Directive and different approaches that have been taken to its transposition.

Chapter 5 examines the protection provided by copyright and the tort of misappropriation in the United States. Copyright and misappropriation principles have underpinned the different proposals that have been made in the United States for *sui generis* protection. Yet the tort of misappropriation has itself had a chequered history. Considerable judicial attention has been given to the theoretical basis of the tort and its consequent scope with resulting differences in the operation of the tort. Consequently, it is not surprising that different pieces of proposed legislation that have all been (allegedly) based on misappropriation have proposed quite different degrees of protection. The lesson to be learned from this is that if the concept of misappropriation is to be incorporated into *sui generis* legislation, it needs to be defined with some precision. Chapter 5 also examines the different pieces of proposed legislation and compares them with the tort of misappropriation and the Directive. This examination reveals a move away from the approach taken in the Directive towards one with wider exceptions to protection and a less

restrictive approach to the use of information for transformative or wealth-producing uses of information. There are also provisions that are designed to ensure public access to information produced by government or with government funds.

Chapter 6 examines moves to provide additional protection for databases outside of the EU. In 1996, a draft treaty based on the Directive and legislation that had been proposed in the United States⁹ was briefly considered at a diplomatic conference hosted by the World Intellectual Property Organization (WIPO). The draft treaty was not adopted but the issue has continued to receive consideration by WIPO since that time. The failure to pass any of the proposed pieces of legislation in the United States has no doubt hampered that process but once such legislation is in place, moves for a treaty are likely to intensify. To date, the EU has suggested its Directive as a template for a treaty on the topic but this has encountered considerable resistance from developing countries. Resistance has also come from international science organisations that are concerned about the potential impact of any *sui generis* legislation on the exchange of scientific information. The relevance of their views to *sui generis* protection is considered in Chapter 7.

In response to this resistance at WIPO, the EU has shifted its focus to its bilateral arrangements with other countries such as those seeking membership of the EU. Consequently, over fifty countries, including the fifteen Member States, either have *sui generis* protection for databases or will acquire it within the next few years.

There are other significant international aspects to the protection of databases associated with these moves. For example, the Directive provides that *sui generis* protection for overseas databases will only be conferred if the nations from which those databases originate also provide materially the same protection for EU databases.¹⁰ This use of reciprocity provisions in intellectual property regimes is a relatively rare departure from the usual international practice of according national treatment to nationals from other nations. One of the reasons for this approach is to place pressure on countries such as the United States to provide reciprocal protection and to create a de facto international model for protection. The implications of this are discussed. In particular, Chapter 6 argues that the EU may be obliged by international agreements to provide national treatment to overseas databases and, consequently, the pressure to provide reciprocal protection is not as great as it may seem. Part of the

⁹ The Database Investment and Intellectual Property Antipiracy Act of 1996, HR 3531 of 1996.

¹⁰ Article 11 of the Directive.

basis of this argument relates back to the point made in Chapter 3 that *sui generis* protection is inextricably entwined with copyright. While the Directive describes it as being separate from copyright, a close inspection of the subject matter of protection, the rights conferred and exceptions to those rights suggests that *sui generis* protection is, in reality, a form of copyright.

Chapter 7 analyses the arguments for and against the different models for *sui generis* protection from a theoretical perspective. As with every intellectual property regime, the law in relation to the protection of databases needs to achieve an appropriate balance between the rights of users and the rights of producers or owners of intellectual property. The ultimate objective of this balancing act is to achieve an optimal production and dissemination of the material that is, or could be, contained within databases. Hence, database owners have argued that greater protection is required for databases in order to protect their investment in production. This emphasis on protection of the database maker's investment undoubtedly underpinned the Directive, as making a substantial investment is the litmus test for whether the Directive's *sui generis* protection extends to a particular database.¹¹ However, this emphasis represents a significant shift in the general approach to the recognition and protection of intellectual property. At least in common law countries, the emphasis in other intellectual property regimes has been on the creation and maintenance of a social contract between creators and users. While encouraging investment is a desirable goal of this social contract, the real question is whether the investment in question is an optimal investment for public purposes. This in itself is a controversial issue, as what constitutes 'optimal' investment is debatable.

In the context of databases, this relationship between producers and users is complicated by the fact that in a number of contexts, the users themselves make significant contributions to the production of the information that is contained within those databases; and this information production is often subsidised by public funds. A particular concern is the relationship between protection of databases and the impact of that protection on research and education, activities essential to the continued production of the very information that finds its way into many databases. Consequently, the book examines the impact of the models for *sui generis* protection on research and education.

As the justification for *sui generis* protection of databases is primarily an economic one, an analysis of that justification inevitably requires some examination of economic arguments for protection; hence, some

¹¹ Article 7(1) of the Directive.

of Chapter 7 is taken up with this. However, the validity of such theories is ultimately dependent on empirical evidence.¹² At the present time, there is no clear empirical evidence justifying a strong form of *sui generis* protection.¹³ Consequently, while those theories are important, they should be treated with some caution, particularly when they suggest the creation of strong intellectual property rights which, if created, will be effectively impossible to rescind. In addition, there are important non-economic aspects of the debate concerning protection of, and access to, databases that receive attention in Chapter 7. One example concerns the availability of information for news reporting and political debate.

The book concludes with a list of basic principles that need to be considered and incorporated into any *sui generis* protection of databases. This list is explained by reference to the preceding analysis in Chapter 7 of the arguments for and against different forms of *sui generis* protection, and is compared with particular aspects of the Directive and the various American bills on the topic that are examined in Chapters 3, 4 and 5.

A couple of points need to be made about the issues with which the book does not deal. In particular, it does not cover in any detail the law of confidential information or trade secrets as it applies to databases. This is because the emphasis is upon databases that are available to the public, or at least those members of the public with sufficient resources and interest to acquire access to them. Consequently, the emphasis in the legal analysis is upon proposals for *sui generis* protection for databases that cannot rely upon the protection of the law of confidential information. Legal issues surrounding privacy and databases are also not considered here, although obviously privacy in the context of databases is an important issue in its own right. Nevertheless, the emphasis in this book is on database owners, rights and their appropriate nature and extent, rather than the privacy rights of those whose details may be included in a database.

While it would be superfluous to repeat the details of Chapter 7 here, a couple of general observations about the book's conclusions are worthwhile to assist the reader in the course of the following chapters. The ultimate conclusion of the book is that there is justification for some *sui generis* protection of the investment involved in the creation and presentation of databases. This view is taken by various independent organisations and even those who have expressed concerns about the possibly excessive nature of any *sui generis* protection.¹⁴ In many jurisdictions, the protection provided by copyright is insufficient. However, the justification

¹² P. Drahos, *A Philosophy of Intellectual Property* (Dartmouth, Aldershot, 1996), p. 7.

¹³ US Copyright Office Report on Legal Protection for Databases, August 1997, pp. 76–7.

¹⁴ *Ibid.*, p. 78. Statements of Andrew Pincus, General Counsel, US Department of Commerce, Joshua Lederberg (on behalf of the National Academy of Science and Ors),

only extends to quite limited protection over and above that presently conferred by copyright, contract and other means. Any international agreement or legislation on the topic needs to acknowledge and respond to the diverse types of information in databases and the diversity of their potential uses. A simplistic approach which confers strong exclusive property rights in all databases and which applies to all uses of those databases does not meet that need. Such an approach runs the risk of treating all information as a commodity for all purposes.

In particular, there is a need to ensure that public access to information created with government funds or subsidies is not completely lost. This is an important issue. For example, governments, universities and other non-profit organisations supply more than one-third of the funds devoted to research and development¹⁵ and the process of government also generates large amounts of information that are valuable both in a commercial sense and to the democratic process.

The latest American proposals for *sui generis* protection based on misappropriation principles have addressed some of the difficulties, and demonstrate an appreciation of the complexities associated with legislation concerning such a diffuse area. Hence, there are a number of exceptions provided for in the latest proposed legislation and protection is based on misappropriation principles. Nevertheless, it is too simplistic to just accept the view that any *sui generis* protection should be based on misappropriation principles. As argued in Chapter 6, misappropriation is a nebulous concept and it must be given a concrete form that is relevant to the area of its application. The latest American proposals still provide generous protection that approximates exclusive property rights, even though they are ostensibly based on misappropriation principles. In addition, the relationship between any prohibition on misappropriation, copyright and contract law needs to be addressed in some detail. While those proposals have considered these issues, there is some room for improvement.

In contrast to the more sophisticated American response to the issue of *sui generis* protection, the Directive adopts an approach conferring broad exclusive property rights with few, if any, meaningful exceptions.

and Charles Phelps (on behalf of the Association of American Universities and Ors) to the Subcommittee on Courts and Intellectual Property of the Judiciary Committee on the 1999 Bill (Collections of Information Antipiracy Act of 1999) on 18 March 1999, pp. 62–506 (Pincus, pp. 51–100; Lederberg, pp. 189–205; Phelps, pp. 223–53).

¹⁵ E.g. between 1992 and 1997 more than 33 per cent of all research and development in the USA was funded by government, universities or other non-profit organisations. 'Statistical Abstract of the United States' (Bureau of Statistics, Washington DC, 1998). The same was also true for the UK between 1992 and 1996: 'Annual Abstract of Statistics No. 135 of 1999, Table 19.1' (Office for National Statistics, London, 1999).

Consequently the Directive has greatly exceeded, in a number of respects, what is necessary or desirable. These include the manner in which it defines a database, the scope of *sui generis* protection provided, the insufficiency of exceptions to *sui generis* protection and an excessive period of protection for database contents. In addition, it is critical that the distinction between copyright and *sui generis* rights be maintained if separate protection regimes are created. Again, the Directive has failed to make this distinction, resulting in a number of difficulties. For those and other reasons, the Directive should not become a template for the international protection of databases.