

# Chapter Three

## Legal research

*Paul Chynoweth*

### Introduction

Legal researchers have always struggled to explain the nature of their activities to colleagues in other disciplines. If Becher's (1981, p. 111) work continues to represent an accurate account of how academic lawyers are viewed by their peers they have much work still to do in this respect. He found that they were regarded as 'not really academic ... arcane, distant and alien: an appendage to the academic world ... vociferous, untrustworthy, immoral, narrow and arrogant'. Their research fared no better, being dismissed as '... unexciting, uncreative, and comprising a series of intellectual puzzles scattered among large areas of description'.

This chapter therefore presents a welcome opportunity to explain the actual nature of legal research (or 'legal scholarship' as it is more usually described) to researchers from the other component disciplines within the built environment. The built environment is usually considered to be an interdisciplinary (or, at the very least, a multidisciplinary) field linking the disciplines of management, economics, law, technology and design (Chynoweth, 2006). The field as a whole can benefit from an improved understanding of each of its component disciplines, and from the greatest possible involvement of each of these in its collective research agendas. The current chapter aims to assist this process in the context of the law discipline. Specifically, it attempts to describe the nature of research within that discipline by reference to the epistemological, methodological and cultural features which distinguish it from other forms of built environment research.

### The epistemology of legal scholarship

#### Legal research styles

There is a dearth of theoretical literature on the nature of legal scholarship and a consequent lack of awareness about what legal scholars actually do. Although there is a tradition of theoretical scholarship (or 'jurisprudence') within the law, this tends to address abstract philosophical questions about the nature of law itself. Many lawyers would recognise Bix's (2003) description of jurisprudence as 'theorists talking past each other' and Murphy and Roberts (1987, p. 682) describe its spectacular lack of contribution to the wider discipline in the following terms:

legal theory has failed to provide any significant explanation or justification of what academic lawyers do (as is normally demanded of the theoretical component of a discipline) and thus of what academic law is or might be.

Nevertheless, in a very different context, Arthurs (1983, pp. 63–71) proposed a useful taxonomy of legal research styles in his report on legal education and research

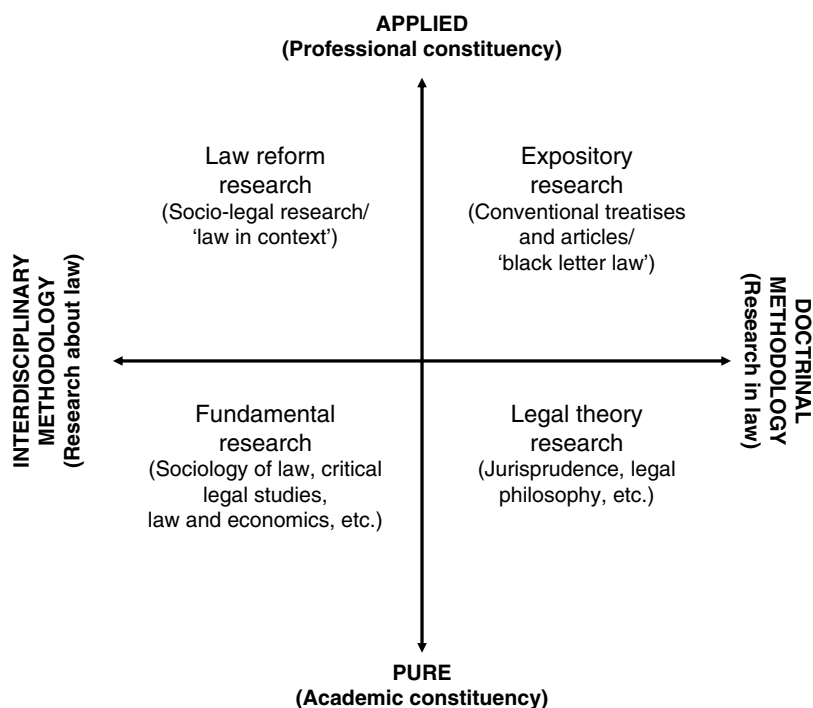


Figure 3.1 Legal research styles (Arthurs, 1983).

in Canada. This has informed the analysis in this chapter and is represented as a matrix in Figure 3.1. It will be seen that the vertical axis of the matrix represents the familiar distinction between pure research which is undertaken for a predominantly academic constituency, and applied work which generally serves the professional needs of practitioners and policy makers. However, in the present context, the more interesting distinction is that between doctrinal and interdisciplinary research which is represented by the horizontal axis.

### Doctrinal legal research

Doctrinal research (on the right in Figure 3.1) is concerned with the formulation of legal 'doctrines' through the analysis of legal rules. Within the common law jurisdictions legal rules are to be found within statutes and cases (the sources of law) but it is important to appreciate that they cannot, in themselves, provide a complete statement of the law in any given situation. This can only be ascertained by applying the relevant legal rules to the particular facts of the situation under consideration.

As will be discussed below in the section on methodology, deciding on which rules to apply in a particular situation is made easier by the existence of legal doctrines (e.g., the doctrine of consideration within the law of contract). These are systematic formulations of the law in particular contexts. They clarify ambiguities within rules, place them in a logical and coherent structure and describe their relationship to other rules. The methods of doctrinal research are characterised by the study of legal texts and, for this reason, it is often described colloquially as 'black-letter law'.

## Normative character of doctrinal research

Doctrinal research is therefore concerned with the discovery and development of legal doctrines for publication in textbooks or journal articles and its research questions take the form of asking ‘what is the law?’ in particular contexts. At an epistemological level this differs from the questions asked by empirical investigators in most other areas of built environment research.

This is perhaps most obvious in a comparison with research in the natural sciences which typically seeks to explain natural phenomena through studying the causal relationships between variables. Epistemologically, this is clearly very different from the interpretive, qualitative analysis required by doctrinal research. Although the interpretive nature of the process bears a superficial resemblance to the *verstehen* tradition of the social sciences (Schwandt, 2000), there are actually fundamental epistemological differences between doctrinal analysis and all styles of scientific research.

Scientific research, in both the natural and social sciences, relies on the collection of empirical data, either as a basis for its theories, or as a means of testing them. In either case, therefore, the validity of the research findings is determined by a process of empirical investigation. In contrast, the validity of doctrinal research findings is unaffected by the empirical world.

Legal rules are *normative* in character as they dictate how individuals *ought* to behave (Kelsen, 1967). They make no attempt either to explain, predict, or even to understand human behaviour. Their sole function is to prescribe it. In short, doctrinal research is not therefore research *about* law at all. In asking ‘what is the law?’ it takes an internal, participant-orientated epistemological approach to its object of study (Hart, 1961) and, for this reason, is sometimes described as research *in* law (Arthurs, 1983).

As will be described below, the actual process of analysis by which doctrines are formulated owes more to the subjective, argument-based methodologies of the humanities than to the more detached data-based analysis of the natural and social sciences. The normative character of the law also means that the validity of doctrinal research must inevitably rest upon developing a consensus within the scholastic community, rather than on an appeal to any external reality.

## Interdisciplinary research

In practice, even doctrinal analysis usually makes at least some reference to other, external, factors as well as seeking answers that are consistent with the existing body of rules. For example, an uncertain or ambiguous legal ruling can often be more easily interpreted when viewed in its proper historical or social context, or when the interpreter has an adequate understanding of the industry or technology to which it relates. As the researcher begins to take these extraneous matters into account, the enquiry begins to move leftwards along the horizontal axis in Figure 3.1, in the direction of interdisciplinary research.

There comes a point, towards the left-hand side of the matrix, when the epistemological nature of the research changes from that of internal enquiry into the meaning of the law to that of external enquiry into the law as a social entity. This might involve, for example, an evaluation of the effectiveness of a particular piece of legislation in achieving particular social goals or an examination of the extent to which it is being complied with.

In taking an external view of the law, each of these examples could be described as research *about* law rather than research *in* law. As one continues to move leftwards

along the axis one encounters a greater willingness to embrace the epistemologies and methodologies of the social sciences.

### Pure and applied legal research

Finally, let us return to the distinction between pure and applied legal research represented by the vertical axis in Figure 3.1. Within the context of interdisciplinary legal research (to the left of Figure 3.1) this distinction, in one sense, simply represents that between pure academic knowledge about the operation of the law (at the bottom of the diagram), and knowledge of the same kind which has been produced with a particular purpose in mind (at the top). The purpose of the latter will generally be to facilitate a future change, either in the law itself, or in the manner of its administration. Arthurs (1983) therefore describes this latter category of research as 'law reform research'. The terms 'law in context' and, increasingly, 'socio-legal research' are more often used in the UK. He distinguishes these forms of research from the production of pure, academic knowledge which he refers to as 'fundamental research'.

In fact, there is also a strong correlation between pure, fundamental research and the willingness (indeed, the motivation) of researchers in these areas to question not simply the operation of law, but also its underlying philosophical, moral, economic and political assumptions. Research of this nature takes many forms but would include the Sociology of Law as well as the (left wing) Critical Legal Studies and (right wing) Law and Economics movements.

The applied form of doctrinal research (to the right of Figure 3.1) is concerned with the systematic presentation and explanation of particular legal doctrines and is therefore referred to as the 'expository' tradition in legal research. This form of scholarship has always been the dominant form of academic legal research (Card, 2002) and has an important role to play in the development of legal doctrines through the publication of conventional legal treatises, articles and textbooks.

When doctrinal research is undertaken in its pure form it is variously described as legal theory, jurisprudence, or (occasionally) legal philosophy. The limitations of this form of research in defining the nature of law as an academic discipline have already been noted. Nevertheless, although rarely used as a practical basis for legal analysis, it does provide insights into the nature of the legal methodologies actually employed by lawyers and legal scholars and this will be considered in the next section.

## In search of a methodology

### Significance of the doctrinal tradition

The dominance of the expository, doctrinal tradition in legal scholarship has already been noted. However, it is important to understand that this is not simply a single, isolated category of scholarship. Some element of doctrinal analysis will be found in all but the most radical forms of legal research.

For example, although law reform research appears as a separate category within Figure 3.1, its practitioners emphasise the importance of traditional legal analysis within their socio-legal work (Cownie, 2004, p. 55). Indeed, even within socio-legal studies, it was once suggested that social scientists should be regarded as 'intellectual sub-contractors' who should be kept 'on tap, not on top' (Campbell and Wiles, 1976). Doctrinal analysis therefore remains the defining characteristics of academic legal research and the account which follows represents an attempt to describe the nature of the methodologies employed within it.

The scale of the task is more daunting than readers may imagine. As already noted, the process of doctrinal analysis is more at home within the humanities than the sciences. Its approach involves the development of scholastic arguments for subsequent criticism and reworking by other scholars, rather than any attempt to deliver results which purport to be definitive and final. Any 'methodologies' in this type of research are therefore employed subconsciously by scholars (and by practising lawyers) who would most usually consider themselves to be involved in an exercise in logic and common sense rather than in the formal application of a methodology as understood by researchers in the scientific disciplines.

### **Doctrinal research methodology and deductive reasoning**

The starting point is to recognise that there is no fundamental distinction between the process of academic doctrinal analysis and the legal analysis undertaken by practising lawyers or judges. As already described, the aim, in each case, is to answer the question 'what is the law?' in a particular situation. In the case of practising lawyers or judges this will be a real and well-defined situation requiring an immediate answer to the question. For the legal scholar, the situation, or more likely the class of situations being considered, will be hypothetical and the purpose is to undertake a more in-depth analysis which is capable of informing the deliberations of practitioners and judges in future cases.

In either case, the initial process of applying a rule of law to a factual situation can be understood as an exercise in deductive logic. Most readers will need no explanation of this form of reasoning which, of course, also forms the basis of the scientific method. However, in a legal context, the familiar syllogism, comprising major premise, minor premise and conclusion, takes the following form:

- Major premise – identifies a general rule of law which requires a specified legal outcome when particular facts are present in a situation.
- Minor premise – describes a particular factual situation.
- Conclusion – states whether the rule in the major premise therefore applies to the facts in the minor premise, and whether the specified legal outcome therefore takes effect.

By way of example, in English law, section 108 of the Housing Grants, Construction and Regeneration Act 1996 contains a general rule of law (the major premise) that a party to a construction contract is entitled to refer a dispute under the contract to adjudication. Therefore, where a particular dispute arises in a particular construction contract between a particular employer and a particular contractor (the minor premise) we can conclude, as a matter of deductive logic, that either party is entitled to refer that dispute to adjudication (conclusion).

### **Open texture of rules**

This, of course, is an idealised account of the process of legal reasoning. If the process were as simple, and as mechanistic as this, society would have no need for lawyers, and still less for legal scholarship. In reality, in almost all cases, the deductive model will fail, without further analysis, to produce a definitive answer to the question of what the law is in a given situation.

Legal rules, of necessity, have to be expressed in general terms and were famously described by Hart (1961) as having an 'open texture', and therefore capable of interpretation in more than one sense. In the context of the above example, there has, for

instance, been considerable judicial and academic discussion over the meaning of 'dispute' in relation to construction adjudication. There will, therefore, often be an element of doubt as to whether a rule applies to a particular factual situation and this characteristic will, of course, be manipulated by the opposing parties and their lawyers in an attempt to achieve the outcome that is most favourable to their interests.

Although Hart (1961) concluded that judges exercise discretion in these so-called 'hard cases', their decisions are actually based on recognised patterns of reasoning employed within the legal community which are used to supplement the deductive model described above. Lawyers and legal scholars are therefore often able to predict the outcomes of future cases by employing, however subconsciously, the same patterns of reasoning that will eventually be used by the judiciary.

## Role of analogy

The most widely used technique is undoubtedly the process of analogical reasoning. In contrast to deductive reasoning, which entails reasoning from a general rule to a specific case, analogy involves a process of reasoning from one specific case to another specific case. In those many situations where it is unclear whether a particular factual situation falls within the ambit of a rule, it can often be helpful to examine apparently similar cases which have previously come before the courts. If, upon examination, the facts of these cases are found to be sufficiently similar to the facts of the subject case then it can be concluded that the facts of the subject case should be treated by the courts in the same way. Most readers will be familiar with this process in the context of the operation of the common law doctrine of precedent.

The decision as to whether a case is sufficiently similar to another is ultimately a subjective one as no two cases are ever completely identical. Judges therefore have considerable scope to distinguish the facts of a subject case from those in an established precedent if they choose not to follow it. Nevertheless, this scope is not unlimited and Bell (1986, p. 48) has highlighted how judicial decision making in these circumstances is constrained by social conventions within the legal community which he describes as the 'rules of legal discourse'. He describes how these 'provide a framework lying outside the power of the reasoner within which he has to operate if his arguments are to count as legal justifications'. Judges are subject to these rules but so, of course, are lawyers and legal scholars who all participate in the same legal discourse, and who all desire their arguments to be taken seriously.

## Induction and legal formalism

A third technique involves the use of inductive reasoning which can be described as the reasoning from specific cases to a general rule. This can be of particular assistance when a particular factual situation does not appear to be addressed directly by a legal rule at all and it therefore becomes necessary to 'fill the gap' in the law. As with inductive reasoning in the sciences a general proposition can sometimes be derived from a number of specific instances.

In the case of legal reasoning this involves the recognition of a new general rule which emerges from a number of earlier authorities which are then regarded simply as particular instances of the new rule. *Donoghue v Stevenson* [1932] AC 562 is the best-known example of this technique. Particular instances of negligence had been recognised by the courts for years before the famous snail in the ginger beer case came before the courts. However, it was not until Lord Atkin proposed his now well-known neighbour principle in this case that the tort of negligence was recognised

as a more general rule, capable of being applied to novel fact situations which were not already described in the individual authorities then available. Once again, the capacity for developing new rules in this way will be regulated and limited by the recognised rules of legal discourse described above.

A variety of other techniques is available which, like those already described, also allow the available body of legal rules to be marshalled into coherent patterns (or 'doctrines') and applied to new factual situations in an apparently logical and consistent manner. Indeed most legal discourse revolves around the verbal manipulation of the available sources of law, in the belief that the answer to most legal problems can be found in the underlying logic and structure of the rules if only this can be discovered (Smith, 2004). This approach is usually described as legal formalism (Vandevelde, 1996) and, despite numerous academic criticisms of its assumptions (e.g., Fitzpatrick and Hunt, 1987), continues to represent the dominant paradigm within legal practice and within legal scholarship, at least in terms of external appearances.

### **Indeterminacy and policy judgements**

Nevertheless, there is now a widespread recognition that, in some cases, the law cannot be determined with certainty from an analysis of the rules alone. Although judges will justify their decisions by reference to the existing rules (MacCormick, 1994) there is a growing realisation that the rules (in the so-called 'hard cases') can sometimes be used to justify a number of possible, and opposing, legal outcomes. This is, once again, a function of the open texture of legal rules and, where this occurs, the law is said to be indeterminate (Kress, 1989).

If the law is indeterminate, and some cases are decided according to a value judgment made by the judge on the day, there are of course implications for democracy, and for the rule of law. This has unsurprisingly generated criticisms of the political role of the judiciary (e.g., Griffith, 1997), which remains beyond the scope of this chapter. However, the judges' political role is usually described more charitably in terms of making decisions according to 'policy considerations' and this is now widely accepted as a legitimate part of the judicial function.

The challenge for the legal scholar (or practising lawyer) trying to predict the likely outcome of future cases is to understand the nature of the policy considerations that are likely to influence the judiciary. Dworkin's (1977, 1986) influential writings provide a wealth of guidance in this respect and remind us that policy decisions are far from the arbitrary and unpredictable exercise of judicial power that some would suggest. Rather, he argues that legal systems consist of underlying principles, as well as rules, and that judges are bound to follow these when deciding the outcomes of hard cases. As with Bell's (1986) rules of legal discourse described above, these can be seen to provide a constraint on judicial action, and at least some assistance in attempting to anticipate the likely outcome of cases. Bell's (1983) empirical work on policy matters also identifies the particular forms of policy argument used by the courts and this can also assist the scholar in trying to anticipate judicial decision making in this context.

### **Summary**

In summary, therefore, it is probably incorrect to describe the process of legal analysis as being dictated by a 'methodology', at least in the sense in which that term is used in the sciences. The process involves an exercise in reasoning and a variety of techniques are used, often at a subconscious level, with the aim of constructing

an argument which is convincing according to accepted, and instinctive, conventions of discourse within the discipline.

Although the discourse is apparently conducted according to formalistic conventions it is also influenced by shared value (or policy) judgments which often remain unspoken. The 'methods' employed in legal scholarship are therefore neither consciously learned, nor consciously employed as is the case with scientific methods. The skills and conventions of legal analysis are instead learned at an instinctive level through exposure to the process, and they are then employed on the same basis in the development of legal argument. In much the same way that the use of an explicit methodology confers legitimacy in scientific research, credibility within legal scholarship is therefore dependent on the researcher's work demonstrating an understanding and adherence to the accepted conventions and norms of its discourse.

## The cultural dimension

### Disciplinary spectrum

This lack of a formal research methodology, and the reliance on analysis and the development of argument within a prevailing academic discourse, is of course a particular feature of the arts and humanities family of disciplines to which law belongs. This places law at the 'soft' end of the familiar disciplinary spectrum. Using the well-known Biglan (1973) disciplinary model (illustrated in Figure 3.2) it can be seen that (in common with design), law differs from the dominant built environment research specialisms in this respect. Unlike law and design, the disciplines of technology, economics and management all belong either to the natural, or to the social sciences.

The science/arts & humanities distinction reflects genuine epistemological and methodological differences between the families of disciplines about the nature of

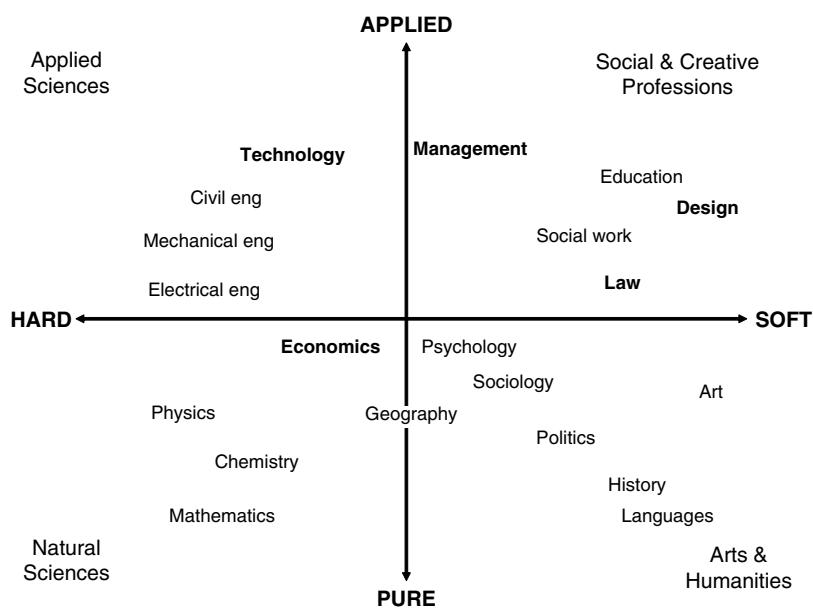


Figure 3.2 Disciplinary model (Biglan, 1973).



knowledge, and about the manner of its production. Becher (1987) has described knowledge production in the sciences in terms of the cumulative and piecemeal accumulation of individual segments of knowledge which, over time, contribute to a comprehensive explanation of particular phenomena. He contrasts this with humanities disciplines like law. These, he describes, as being concerned with the organic development of knowledge through an ongoing process of reiterative enquiry. They address multifaceted, rather than discrete, problems and attempt, not to explain the individual components of phenomena, but to develop a holistic understanding of their overall complexity.

The dominance of the scientific disciplines within the built environment inevitably influences prevailing views about knowledge and knowledge production within the field. Indeed, the language of built environment research is often dominated by the rhetoric of the social sciences in particular. This is characterised by a concern with the traditional social science methodologies (see, e.g., Fellows and Liu, 2003) and with an emphasis on empirical investigations rather than the development of theoretical perspectives (Betts and Lansley, 1993; Brandon, 2002).

### Cultural challenges

The epistemological and methodological differences between legal scholarship and most other built environment research styles also generate cultural differences between the two. These produce expectations regarding the external appearance of academic research within the field which legal scholars often struggle to satisfy. These may relate to expectations about the form and appearance of research outputs, about the process which is undertaken in generating the research, and about the more general behavioural characteristics of researchers within the field.

In their seminal work, *Academic Tribes and Territories*, Becher and Trowler (2001) have demonstrated how individual academic communities (tribes) develop cultural norms which are closely associated with the particular knowledge areas (territories) which they inhabit. In particular they demonstrate a close correlation between Biglan's (1973) hard/soft continuum of knowledge types (illustrated in Figure 3.2) and a corresponding continuum between what they describe as urban and rural research styles. Scientific research culture (including the prevailing culture within the built environment) conforms to an urban research pattern whilst the humanities (including law) typically exhibit the characteristics of a rural research community.

They find, for example, that urban research communities like the built environment focus on narrower and more short-term research topics, are more competitive and are more influenced by the availability of external funding than their rural counterparts. They also describe a greater tendency for urban areas to be dominated by charismatic research leaders (the so-called 'research stars') than rural areas. Urban research is faster moving and more gregarious than that within rural environments and is therefore characterised by more networks, a higher level of conference attendance and an increased incidence of team working than in rural settings.

The different patterns of working are also reflected in publication patterns and styles. Urban communities produce large numbers of short articles, often by multiple authors, whilst the outputs from rural communities like law are likely to be substantial, but less frequent, and authored by a single researcher. The gregarious teams of researchers in frenetic urban environments can therefore easily overlook their more solitary, and less visible, counterparts in rural fields. The danger for those operating in the rural subjects like law is that their lack of visibility can be mistaken for lack of activity.

More fundamentally, as illustrated by the quotations at the start of this chapter, cultural differences can sometimes obscure the academic merits of doctrinal work from those belonging to different disciplinary traditions. As a consequence, legal scholars' experiences of peer review within the built environment have not always been happy ones. Their work can all too easily be dismissed as lacking a methodology, as being based only on opinion, or even as being 'not research' by peers operating within a scientific, rather than a humanities paradigm.

## Conclusion

The chapter has shown that the normative process of doctrinal analysis is the defining characteristic of most legal scholarship. It has demonstrated how this places it within the humanities' tradition with corresponding methodologies and cultural norms. As the built environment research community operates overwhelmingly within a scientific paradigm it embraces different methodologies and cultural norms from those traditionally associated with legal scholarship with consequent difficulties for communication.

In common with other humanities' disciplines, most legal scholarship is not concerned with empirical investigation, but with the analysis and manipulation of theoretical concepts. The methodologies employed therefore differ from those of the sciences and are probably more accurately categorised, in social science terms, as techniques of qualitative analysis. As has been seen, deductive and inductive logic, the use of analogical reasoning and policy analysis all feature strongly within this process.

Crucially however, as the process is one of analysis rather than data collection, no purpose would be served by including a methodology section within a doctrinal research publication and one is never likely to find one. This is perhaps the most striking difference between the appearance of research outputs in the two traditions, and the one which has historically caused most difficulty for legal scholars when subject to peer review by other built environment researchers.

This chapter began by highlighting the failure of the legal research community to adequately explain itself to its peers in other disciplines and, in this sense, it can hardly complain if those peers then judge it by standards other than its own. Communication between disciplines is one of the great challenges to achieving genuine interdisciplinary rigour and that challenge is never greater than when trying to bridge the gulf between the humanities and the sciences.

Nevertheless, it is surely incumbent on all of us within the built environment research community to do precisely that. This involves developing at least an awareness of practices within the field's various disciplines. But it also involves a willingness to reflect upon our own previously unquestioned assumptions about the practices in our own discipline, and to articulate these for the benefit of others within the field. It is hoped that the above account might make some contribution to this process by increasing understanding (perhaps amongst legal scholars as well as others) about the nature of legal research, and about how it differs from other research within the built environment.

## References

- Arthurs, H.W. (1983) *Law and Learning: Report to the Social Sciences and Humanities Research Council of Canada by the Consultative Group on Research and Education in Law*, Information Division, Social Sciences and Humanities Research Council of Canada, Ottawa.

- Becher, T. (1981) Towards a definition of disciplinary cultures, *Studies in Higher Education*, 6, 109–122.
- Becher, T. (1987) The disciplinary shaping of the profession, in Clark, B.R. (ed.) *The Academic Profession*, University of California Press, Berkeley, California.
- Becher, T. and Trowler, P.R. (2001) *Academic Tribes and Territories*, SRHE and Open University Press, Buckingham.
- Bell, J. (1983) *Policy Arguments in Judicial Decisions*, Clarendon Press, Oxford.
- Bell, J. (1986) The acceptability of legal arguments, in MacCormick, N. and Birks, P. (eds) *The Legal Mind: Essays for Tony Honoré*, Clarendon Press, Oxford.
- Betts, M. and Lansley, P. (1993) Construction management and economics: A review of the first ten years, *Construction Management and Economics*, 11(4), 221–245.
- Biglan, A. (1973) The characteristics of subject matters in different academic areas, *Journal of Applied Psychology*, 57(3), 195–203.
- Bix, B. (2003) *Jurisprudence: Theory and Context* (3rd Edition), Sweet & Maxwell, London.
- Brandon, P. (2002) *Overview Report on 2001 Research Assessment Exercise, Panel No. 33: Built Environment*. Higher Education & Research Opportunities in the United Kingdom, available at <http://admin.hero.ac.uk/rae/overview/docs/UoA33.doc>
- Campbell, C.M. and Wiles, P. (1976) The study of law in society in Britain, *Law and Society Review*, 547–578.
- Card, R. (2002) The legal scholar, *The Reporter: Newsletter of the Society of Legal Scholars*, 25, 5–12.
- Chynoweth, P. (2006) The built environment interdiscipline: A theoretical model for decision makers in research and teaching, *Proceedings of the International Conference on Building Education and Research* (CIB W89 BEAR 2006), 10–13 April 2006, Hong Kong Polytechnic University, Hong Kong, People's Republic of China.
- Cownie, F. (2004) *Legal Academics: Culture and Identities*, Hart Publishing, Oxford and Portland, Oregon.
- Dworkin, R. (1977) *Taking Rights Seriously*, Duckworth, London.
- Dworkin, R. (1986) *Law's Empire*, Harvard University Press, Cambridge, Massachusetts.
- Fellows, R. and Liu, A. (2003) *Research Methods for Construction* (2nd Edition), Blackwell Publishing, Oxford.
- Fitzpatrick, P. and Hunt, A. (eds) (1987) *Critical Legal Studies*, Basil Blackwell, Oxford.
- Griffith, J.A.G. (1997) *The Politics of the Judiciary* (5th Edition), Fontana Press, London.
- Hart, H.L.A. (1961) *The Concept of Law*, Clarendon Press, Oxford.
- Kelsen, H. (1967) in Knight, M. (trans) *The Pure Theory of Law*, University of California Press, Berkeley, California.
- Kress, K. (1989) Legal indeterminacy, *California Law Review*, 77(235), 283–337.
- MacCormick, N. (1994) *Legal Reasoning and Legal Theory*, Clarendon Press, Oxford.
- Murphy, W.T. and Roberts, S. (1987) Introduction (to the Special Issue on Legal Scholarship), *Modern Law Review*, 50(6), 677–687.
- Schwandt, T.A. (2000) Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics and social constructionism, in Denzin, N.K. and Lincoln, Y.S. (eds) *Handbook of Qualitative Research* (2nd Edition), Sage Publications, Thousand Oaks, London and New Delhi.
- Smith, S.D. (2004) *Law's Quandary*, Harvard University Press, Cambridge, Massachusetts and London.
- Vandevelde, K.J. (1996) *Thinking Like a Lawyer: An Introduction to Legal Reasoning*, Westview Press, Boulder, Colorado.

# Advanced Research Methods in the Built Environment

EDITED BY

**Andrew Knight**

School of Architecture

Design and the Built Environment

Nottingham Trent University

**Les Ruddock**

School of the Built Environment

University of Salford

 **WILEY-BLACKWELL**

A John Wiley & Sons, Ltd., Publication

This edition first published 2008  
© 2008 Blackwell Publishing Ltd

Blackwell Publishing was acquired by John Wiley & Sons in February 2007. Blackwell's publishing programme has been merged with Wiley's global Scientific, Technical, and Medical business to form Wiley-Blackwell.

*Registered office*

John Wiley & Sons Ltd, The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ,  
United Kingdom

*Editorial offices*

9600 Garsington Road, Oxford, OX4 2DQ, United Kingdom  
2121 State Avenue, Ames, Iowa 50014-8300, USA

For details of our global editorial offices, for customer services and for information about how to apply for permission to reuse the copyright material in this book please see our website at [www.wiley.com/wiley-blackwell](http://www.wiley.com/wiley-blackwell).

The right of the author to be identified as the author of this work has been asserted in accordance with the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, except as permitted by the UK Copyright, Designs and Patents Act 1988, without the prior permission of the publisher.

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books.

Designations used by companies to distinguish their products are often claimed as trademarks. All brand names and product names used in this book are trade names, service marks, trademarks or registered trademarks of their respective owners. The publisher is not associated with any product or vendor mentioned in this book. This publication is designed to provide accurate and authoritative information in regard to the subject matter covered. It is sold on the understanding that the publisher is not engaged in rendering professional services. If professional advice or other expert assistance is required, the services of a competent professional should be sought.

*Library of Congress Cataloging-in-Publication Data*

Advanced research methods in the built environment /edited by Andrew Knight, Les Ruddock.  
p. cm.

Includes bibliographical references and index.

ISBN 978-1-4051-6110-7 (pbk. : alk. paper)

1. Building-Research. 2. Research-Methodology. I. Knight, Andrew,  
1972- II. Ruddock, Leslie, 1950-

TH213.5.A38 2008  
690.072-dc22

2008013079

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

Set in 9.5/11.5 pt Avenir by Newgen Imaging Systems Pvt. Ltd, Chennai, India  
Printed in Singapore by Fabulous Printers Pte Ltd

1 2008

# Foreword

This book sets out to complement the more standard research methods textbooks available, by broadening and deepening the treatment given. A range of very experienced researchers thus provide perspectives on a wide variety of research paradigms, but there are also contributions concerning the 'nitty gritty' of research practice. This is all delivered solidly within the context of built environment research.

Together the contributions provide a wealth of wisdom and insights for the postgraduate researcher, or indeed the ambitious undergraduate or curious established researcher.

The diversity of the subjects covered is an indication of the complexity of the built environment research domain. The quality of the material is a very positive measure of the level of maturity that this research discipline has now reached.

**Professor Peter Barrett MSc, PhD, DSc, FRICS**

Pro-Vice Chancellor for Research, University of Salford  
President of the CIB (International Council for Research and  
Innovation in Building and Construction)



**University of Salford**  
A Greater Manchester University

# Contents

<i>Foreword</i>	xi
<i>Introduction</i>	xiii
<i>Contributors</i>	xix
<b>1 Methodological Pluralism in Construction Management</b>	
<b>Research</b>	<b>1</b>
<i>Andrew Dainty</i>	
Introduction	1
Research strategy and design	3
The dominant research paradigm within construction management	4
Discussion: The implications of methodological uniformity	6
The case for methodological pluralism in construction management research	8
Challenges in undertaking multi-paradigm research	9
Conclusions	10
Acknowledgements	11
Note	11
References	12
<b>2 Architectural Research</b>	<b>14</b>
<i>Alan Penn</i>	
Introduction	14
A sketch of architectural design	15
The structure of architectural research	17
Space syntax and the social logic of space	18
Conclusion	25
Note	27
References	27
<b>3 Legal Research</b>	<b>28</b>
<i>Paul Chynoweth</i>	
Introduction	28
The epistemology of legal scholarship	28

	In search of a methodology	31
	The cultural dimension	35
	Conclusion	37
	References	37
<b>4</b>	<b>Feminist Research</b>	<b>39</b>
	<i>Pat Morton and Sara Wilkinson</i>	
	Introduction	39
	What is feminist research?	39
	Locating feminism in the social sciences	40
	Locating the feminist researcher	42
	Ethical considerations	43
	Standpoint epistemologies	44
	Participatory action research	45
	Oral histories and diaries and women's voices	45
	Can anyone be a feminist researcher?	46
	Conclusions	48
	References	48
<b>5</b>	<b>Approaches to Economic Modelling and Analysis</b>	<b>51</b>
	<i>Les Ruddock</i>	
	Introduction	51
	General economic models	51
	Relationships between economic variables – econometrics	52
	Approaches and applications in the construction sector	56
	Conclusions	61
	References	62
<b>6</b>	<b>Epistemology</b>	<b>64</b>
	<i>Andrew Knight and Neil Turnbull</i>	
	Introduction	64
	Concepts	65
	Classical epistemology	66
	Modern epistemology	68
	Postmodernism and the critique of epistemology	71
	Conclusion	72
	References	74
<b>7</b>	<b>Scientific Theories</b>	<b>75</b>
	<i>Göran Runeson and Martin Skitmore</i>	
	Introduction	75
	The philosophy behind theories	75
	Scientific theories	76



Working as a scientist	77
The plot gets complex	78
Testing social science theories	79
A solution (or two)	83
Building new theories	83
Conclusions	84
References	84
<b>8 Grounded Theory</b>	<b>86</b>
<i>Kirsty Hunter and John Kelly</i>	
Introduction	86
What is grounded theory?	86
Substantive to formal theory	87
Data collection and analysis	89
The theory building procedure	90
Data sorting	91
Coding and comparison groups	91
Theory development in case studies	93
Grounded theory challenges	93
Scope and limitations of theory	94
A good theory	95
The derived theory	96
Summary	96
References	97
<b>9 Case Study Research</b>	<b>99</b>
<i>David Proverbs and Rod Gameson</i>	
Introduction	99
Case study research: An overview	99
Designing case studies	100
Identifying and selecting the case(s)	101
Collecting the information	101
Analysing the information	103
Writing up	104
Example	104
Conclusions	108
Acknowledgement	109
Notes	110
References	110
<b>10 Interviews: A Negotiated Partnership</b>	<b>111</b>
<i>Richard Haigh</i>	
Introduction	111
The interview method	112

Interviews in the built environment disciplines	115
Planning, conducting and analysing interviews	116
Conclusion	120
References	120
Further reading	120
<b>11 Questionnaire Design and Factor Analysis</b>	<b>122</b>
<i>Mike Hoxley</i>	
Introduction	122
Construction	123
Attitude scales	124
Piloting	125
Sampling	125
Administration	126
Coding	127
Software packages	127
Coding missing values	127
Data entry	128
Factor analysis	128
Summary	133
References	134
<b>12 Using Software to Analyse Qualitative Data</b>	<b>135</b>
<i>Andrew King</i>	
Introduction	135
Why use software?	136
Comparison of software	136
Methodology and software	137
Analytic distance	139
Learning to use CAQDAS	139
The quality of qualitative research	140
Conclusion	141
References	141
<b>13 Getting Started in Quantitative Analysis</b>	<b>144</b>
<i>Chris Leishman</i>	
Introduction	144
The essence of sampling theory	145
Other common forms of hypothesis test	147
Inference and causality – basic regression models	148
Multiple regression models	150
Concluding remarks	153
References	154

<b>14</b>	<b>Artificial Neural Network Modelling Techniques for Applied Civil and Construction Engineering Research</b>	<b>155</b>
	<i>Abdelhalim Boussabaine and Richard Kirkham</i>	
	Introduction	155
	First concepts	155
	System dynamics	157
	Network structure and nomenclature	158
	System architecture design	160
	Recent advances in construction and civil engineering research	166
	Neuro-fuzzy modelling	167
	Conclusion: Why neuro-fuzzy models?	167
	References	169
<b>15</b>	<b>Social Network Analysis</b>	<b>171</b>
	<i>Stephen Pryke</i>	
	Introduction	171
	Why choose social network analysis?	172
	Concepts and terminology	173
	Finally on SNA theory and techniques	178
	Software for the analysis of networks	178
	Conclusion	180
	References	181
<b>16</b>	<b>Managing the Thesis</b>	<b>183</b>
	<i>Alan Griffith and Paul Watson</i>	
	Introduction	183
	Defining the thesis	183
	Having a clear research focus	184
	Developing and managing the draft thesis	185
	Producing the final version of the thesis	188
	Knowing the thesis and preparing for the viva voce	189
	Conclusions	192
	References	192
	Further reading	192
<b>17</b>	<b>Getting Your Research Published in Refereed Journals</b>	<b>193</b>
	<i>Will Hughes</i>	
	Introduction	193
	Writing good journal papers	193
	Elements of a journal submission	198
	Editorial processes	202
	Publication and dissemination	205
	Conclusion	205
	Note	206
	References	206

<b>18</b>	<b>Researcher Attitudes and Motivation</b>	<b>207</b>
	<i>David Boyd</i>	
	Introduction	207
	Inner self	207
	Personal environment	211
	The research project	212
	Research environment	213
	Conclusion: Keeping going and succeeding	214
	References	215
<b>19</b>	<b>Built Environment Futures Research: The Need for Foresight and Scenario Learning</b>	<b>216</b>
	<i>John Ratcliffe</i>	
	Introduction	216
	Concept and context	216
	Conclusion	226
	References	227
	<i>Index</i>	<b>229</b>